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Gender, diagnosis and involuntary psychiatry admission in Ireland: A report from the Dublin Involuntary Admission Study (DIAS)

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ABSTRACT

Involuntary admission and treatment are common, long-standing features of psychiatry but the relationships between gender, diagnosis and other features of involuntary treatment are not clear. We studied all voluntary and involuntary psychiatry admissions at Tallaght University Hospital, Dublin over 2 years ($n = 1230$). Admission rates in Tallaght were lower than national rates for all admissions (224.9 admissions per 100,000 population per year in Tallaght versus 376.8 nationally), voluntary admissions (194.0 versus 328.4) and involuntary admissions (30.9 versus 48.4). Compared to men, proportionately fewer admissions of admissions of women were involuntary (11% versus 16%) and women were more commonly diagnosed with affective (mood) disorders (29.5% of women versus 22.6% of men), neuroses (anxiety disorders) (14.0% versus 8.8%) and personality and behavioural disorders (18.0% versus 9.2%), and less commonly diagnosed with schizophrenia group disorders (21.8% versus 32.0%), alcohol disorders (2.9% versus 4.3%) and drug disorders (3.6% versus 8.1%). Schizophrenia group disorders accounted for a greater proportion of male (63.2%) than female (55.6%) involuntary admissions, and affective disorders accounted for a greater proportion of female (17.5%) than male (12.3%) involuntary admissions. Duration of admission was independently associated with, in order of strength of association, involuntary status, schizophrenia group disorders and increasing age, but duration of involuntary care was not associated with any of these factors. The chief gender-related features of involuntary psychiatry admission are that (a) proportionately fewer admissions of admissions of women are involuntary compared to men, and (b) diagnoses of affective disorders are more common in women, and schizophrenia group diagnoses more common in men. Future research could usefully explore gender differences in grounds for involuntary detention and police involvement in the involuntary admission process. Future research is also warranted into whether gender associations differ in older compared to younger involuntary patients.

1. Introduction

Involuntary admission is a long-standing feature of psychiatric care (Shorter, 1997) but the relationships between gender, diagnosis and specific features of involuntary treatment are not clear (Curley et al., 2016). These are important issues owing to both the differing ways in which women and men have been treated by psychiatry over the past two centuries (Geller, & Harris, 1995) and continued uncertainty today about differing pathways to care for women and men, especially with psychosis (Ferrari et al., 2018). A clearer understanding of the relationships, if any, between gender and various aspects of involuntary care (diagnosis, duration of admission, duration of involuntary care, etc.) would help guide more evidence-based service planning, help ensure that mental health services meet the needs of women and men equally and help protect rights equally - including the right to liberty and the right to treatment.

If there are differences in patterns of involuntary treatment between women and men, it is especially important to establish if they are mediated by factors that have been linked with involuntary admission in the past, such as diagnosis (especially psychosis) (Riecher, Rössler, Löffler, & Fätkenheuer, 1991; Salize & Dressing, 2004), or if they need to be explained in other ways.

It is already known that the basic rates of involuntary admission vary between men and women in different countries. In Ireland, the

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Dublin Involuntary Admission Study (DIAS) previously reported an association between male gender and involuntary status (Curley et al., 2016; Gilhooley et al., 2017; Umama-Agada et al., 2018) and men have generally higher rates of inpatient psychiatry admission in Ireland as a whole (Daly & Craig, 2017). Men also have higher rates of involuntary admission compared to women in England (Health and Social Care Information Centre, 2016), New Zealand (Wheeler, Robinson, & Robinson, 2005), the United States (Houston, Mariotto, & Hays, 2001), the Netherlands (Mulder et al., 2008; Salize & Dressing, 2004), Norway (Hustoft et al., 2013; Myklebust, Sørgaard, & Wynn, 2014) and various other European Union countries including Belgium, France, and Luxembourg (Salize & Dressing, 2004). The converse – an association between female gender and involuntary care – is reported in Switzerland (Eytan, Chatton, Safran, & Khazaal, 2013), Brazil (Chang, Ferreira, Ferreira, & Hirata, 2013) and China (Gou et al., 2014).

These inconsistent and contradictory patterns across jurisdictions might arise from differences in mental health legislation and, especially, varying levels of emphasis on 'dangerousness' as a criterion for involuntary care. Other factors might also be relevant; for example, help-seeking behaviour among involuntary female patients in the UK differs between ethnic groups, as pathways to care among non-native ethnic groups are more likely to involve the police or criminal justice system (Lawlor, Johnson, Cole, & Howard, 2012).

Even after involuntary admission, gender differences persist: male involuntary patients appear to be subject to more coercive measures then female patients (Lay, Nordt, & Rössler, 2011; Pawlowski & Baranowski, 2017); older detained patients are more likely to be female than male, owing, largely, to the lower life expectancy of men (Audini & Lelliott, 2002); and female gender is associated with better social outcomes following involuntary admission (Priebe et al., 2011).

In Ireland, involuntary admission and treatment of people with mental disorder are governed by the Mental Health Act 2001 which has been fully operational since 2006. For a patient to be detained under the 2001 Act, they must have a 'mental disorder', as outlined in Section 3(1) of the legislation; i.e. they must have a 'mental illness', 'severe dementia' or 'significant intellectual disability' where (a) 'because of the illness, disability or dementia, there is a serious likelihood of the person concerned causing immediate and serious harm to himself or herself or to other persons' (the *'risk criterion'*), or (b)'because of the severity of the illness, disability or dementia, the judgment of the person concerned is so impaired that failure to admit the person to an approved centre would be likely to lead to a serious deterioration in his or her condition or would prevent the administration of appropriate treatment that could be given only by such admission', *and* 'the reception, detention and treatment of the person concerned in an approved centre would be likely to benefit or alleviate the condition of that person to a material extent' (the *'treatment criterion'*), or (c) both (a) and (b).

The involuntary admission process can be instigated by a (a) spouse, civil partner or relative; (b) authorised (designated) officer of the health service; (c) member of the police force; or (d) member of the public (subject to certain conditions). An 'application' is made to a general practitioner or other doctor who can then make a 'recommendation' that a patient be admitted to hospital for assessment by a consultant psychiatrist. Within 24 h of such an admission, the consultant psychiatrist must make a decision as to whether that person will be involuntarily admitted or not. This decision is subject to review by a mental health tribunal within 21 days.

Alternatively, a person who already is a voluntary inpatient in a psychiatry unit and expresses a desire to leave can be retained by a nurse or doctor for up to 24 h if they think the patient meets the criteria for involuntary care. Within this period, the patient is assessed by two consultant psychiatrists and a decision made about whether their status should change to involuntary; i.e. whether or not the voluntary patient undergoes a change of status from voluntary to involuntary (rather than being involuntary from the outset).

Under the legislation, an involuntary patient with mental capacity for treatment decisions cannot be treated without their consent. Section 57(1) provides for circumstances in which the right of the involuntary patient to refuse treatment can be over-ruled by the treating consultant psychiatrist but only if treatment is necessary 'to safeguard the life of the patient, to restore his or her health, to alleviate his or her condition, or to relieve his or her suffering' and the patient is deemed incapable of providing consent due to the presence of a mental disorder. The Expert Group on the Review of the Mental Health Act 2001 (Department of Health, 2015, p. 57) explored how this provision is interpreted in practice and noted that 'the vast majority of existing involuntary patients are deemed to lack capacity to consent to treatment and that it is rare that a patient will be deemed to be suffering from a mental disorder (as defined in the current Section 3) and yet also deemed to have capacity to make decisions on treatment'. In other words, most involuntary patients are presumed to lack the mental capacity for treatment decisions by virtue of their involuntary status.

To complicate matters further, the definition of a voluntary patient in the Irish legislation is very broad and does not require the patient to possess mental capacity in order to be a voluntary patient in the first place. The 2001 Act defines a voluntary patient as 'a person receiving care and treatment in an approved centre who is not the subject of an admission order or a renewal order' (Section 2(1)); i.e. all patients who are not involuntarily admitted under the legislation are regarded as voluntary patients. Voluntary patients are not legally required to provide written consent to admission or most treatments, and mental capacity to consent is generally not formally assessed. This 'voluntary' category therefore encompasses a wide spectrum of mental capacities and levels of 'voluntariness' and – as a result - may be soon be subject to revision, as recommended by the 2015 Expert Group Report.

Against this background, and especially in light of contradictory evidence about gender and involuntary care in the literature, we aimed to explore differences in patterns of involuntary care in women and men in Ireland and to compare these to the experiences of voluntary patients, with a particular focus on gender differences in diagnosis among involuntary patients.

2. Method

2.1. Setting

We studied all admissions to the Acute Psychiatry Unit at Tallaght University Hospital, Dublin between 1 July 2015 and 30 June 2017 inclusive. The Acute Psychiatry Unit at Tallaght University Hospital is a 52-bed admission unit for the Dublin South West and West Mental Health Service, a public sector general adult psychiatry service that serves a catchment area of 273,419 people (Gilhooley et al., 2017). This mental health service includes four multi-disciplinary general adult psychiatry teams, one rehabilitation/assertive outreach service, and one old age psychiatry service. The inpatient unit is part of a general hospital and provides acute mental healthcare to adults (aged 18 years or over), including both voluntary and involuntary patients under the Mental Health Act 2001. Ireland's public mental health service is arranged on a strict catchment area basis, so that all public (non-fee-paying) psychiatry admissions of individuals resident within the geographical catchment area of this service *must* occur in this admission unit.

2.2. Data collection

For all admissions to the Acute Psychiatry Unit at Tallaght University Hospital, Dublin between 1 July 2015 and 30 June 2017 inclusive we recorded gender, date of birth, occupation, marital status, date of admission and date of discharge. We recorded clinical discharge diagnosis using the *International Classification of Diseases, Volume 10* (World Health Organization, 1992). This was a study of usual practice

Table 1
Voluntary and involuntary psychiatry admission numbers, percentages and rates: Ireland (national data) and Tallaght University Hospital (study area).

Variable		Ireland (1 January 2016 to 31 December 2016, inclusive)[a]	Tallaght University Hospital (1 July 2015 to 30 June 2017, inclusive)
Number of admissions per 100,000 population per year	All admissions	376.8	224.9
	Voluntary	328.4	194.0
	Involuntary	48.4	30.9
Percentage of admissions that were involuntary	Both genders	12.8%	13.7%
	Male	15.1%	16.3%
	Female	10.6%	10.9%

[a] Daly and Craig (2017).

using existing routine data to evaluate the current mental health service.

For patients whose status was involuntary for part or all of their admission, we recorded whether their status was involuntary from the outset or they underwent a change of status from voluntary to involuntary during their admission. We also recorded the dates that involuntary status was commenced and terminated, and the method by which it was terminated, categorised as follows: (a) involuntary admission order revoked by responsible consultant psychiatrist; (b) involuntary admission order revoked by mental health tribunal; (c) involuntary admission order expired and not renewed; or (d) patient transferred to another hospital while still an involuntary patient.

2.3. National data

We obtained national data about psychiatry admissions in Ireland for 2016 (the year mid-way through our study period), from the annual report of the National Psychiatric Inpatient Reporting System maintained by the Health Research Board (www.hrb.ie) (Daly & Craig, 2017). We obtained general population data from the Irish National Census 2016 on the website of the Central Statistics Office (www.cso.ie). The census was conducted on 24 April 2016 (also around the midpoint of our study period) and we used census data detailing the number of residents in the catchment area, and the proportions that were male and female.

2.4. Ethics

This study was approved by the Joint Research Ethics Committee of St James's Hospital and Tallaght University Hospital and performed in accordance with the *Declaration of Helsinki* (World Medical Association, 2008). Data were stored on a password-protected research computer in a locked research office. Data were irrevocably anonymised and encrypted. Data protection legislation was adhered to and patient confidentiality protected at all times.

2.5. Statistics

We stored and analysed data using IBM SPSS Statistics (Version 24). Data were normally distributed except where specified otherwise. For bi-variable analysis, we used the Student *t*-test, Pearson Chi-square test, Mann Whitney *U* test, Pearson correlation coefficient and Spearman correlation coefficient, as appropriate.

For multi-variable analysis, we generated two multi-variable, linear regression models. The first model had duration of admission (in days) as the dependent variable; independent variables entered in the model were: gender, age, occupation, marital status, diagnosis and admission status (either (a) voluntary or (b) involuntary for part or all of the admission). The second model had duration of involuntary care (in days) as the dependent variable; independent variables entered in the model were: gender, age, occupation, marital status, diagnosis, whether the patient was involuntary from the outset or underwent a change of status, and how the involuntary admission was terminated (either (a) involuntary admission order revoked by responsible consultant psychiatrist; (b) involuntary admission order revoked by mental health tribunal; (c) involuntary admission order expired and not renewed; or (d) patient transferred to another hospital while still an involuntary patient).

We tested both models for multicollinearity which is when one or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a "tolerance value" for each independent variable in each model; tolerance values below 0.25 indicate possible multicollinearity and tolerance values below 0.10 indicate significant problems with multicollinearity (Katz, 1999).

3. Results

3.1. Admission rates

Over the 2-year period studied, there were 1230 admissions to the Acute Psychiatry Unit at Tallaght University Hospital of which 1061 (86.3%) were voluntary and 169 (13.7%) were involuntary (i.e. all or part of the admission was on an involuntary basis). This yields an annual admission rate of 224.9 admissions per 100,000 population per year (Table 1). The voluntary admission rate was 194.0 per 100,000 population per year and the involuntary admission rate was 30.9 per 100,000 population per year.

Women accounted for 47.1% ($n = 579$) of all admissions and 37.2% ($n = 63$) of involuntary admissions. Mean age at admission was 40.6 years (range 18–91; standard deviation [SD] 15.1); there was no relationship between admission status and age ($t = 0.279$, $p = .780$). Just over one tenth of female admissions were involuntary (10.9%) compared to 16.3% of male admissions (Pearson Chi-square 7.545, $p = .006$).

Two thirds of patients were single (i.e. never married; 66.6%; $n = 779$); 18.7% ($n = 219$) were married; 9.3% ($n = 108$) were separated or divorced; and 2.9% ($n = 34$) were widowed. Involuntary patients were more likely than voluntary patients to be single (73.3% versus 65.5%; Pearson Chi Square 13. 668, $p = .018$). Two thirds of patients were unemployed (66.5%; $n = 818$); 17.3% ($n = 213$) were employed outside the home; 6.7% ($n = 82$) were students; 5.4% ($n = 67$) worked in the home; and 4.1% ($n = 50$) were retired. There was no relationship between admission status and employment (Pearson Chi-square 0.413, $p = .981$).

3.2. Gender and diagnosis

Schizophrenia, schizotypal and delusional disorders were the most common diagnoses among all admissions (27.2%; $n = 334$); affective (mood) disorders were the next most common (25.9%; $n = 318$), followed by personality and behavioural disorders (13.3%; $n = 164$), neuroses (anxiety disorders) (11.2%; $n = 138$), drug disorders (other than alcohol) (6.0%; $n = 74$), alcohol disorders (3.7%; $n = 45$), and organic mental disorders (1.5%; $n = 19$), with 11.2% ($n = 138$) diagnosed with other disorders or non-specific diagnoses.

Table 2
Psychiatry admission rates and diagnoses stratified by gender: Ireland (national data) and Tallaght University Hospital (study area).

Diagnosis	Rate of admission per 100,000 population per year			
	Ireland (1 January 2016 to 31 December 2016, inclusive)[a]		Tallaght University Hospital (1 July 2015 to 30 June 2017, inclusive)[b]	
	Male	Female	Male	Female
Organic mental disorders	10.6	10.8	3.7	3.2
Alcohol disorders	33.6	21.4	10.4	6.1
Other drug disorders	30.4	10.9	19.7	7.5
Schizophrenia, schizotypal and delusional disorders	89.0	60.7	77.5	45.3
Affective disorders	128.4	158.5	54.7	61.4
Neurosis	31.5	33.6	21.2	29.1
Personality and behavioural disorders	17.3	39.6	22.3	37.4
Other and unspecified	39.2	38.2	32.8	18.0
Total	380.0	373.7	242.4	208.0

[a] Daly and Craig (2017).
[b] Pearson Chi Square 60.959, $p < .001$.

Compared to women, men were more commonly diagnosed with schizophrenia group disorders (32.0% of men versus 21.8% of women), alcohol disorders (4.3% versus 2.9%) and drug disorders (8.1% versus 3.6%), while women were more commonly diagnosed with affective disorders (29.5% of women versus 22.6% of men), neuroses (14.0% versus 8.8%) and personality and behavioural disorders (18.0% versus 9.2%; Pearson Chi Square 60.959, $p < .001$). These patterns were reflected in the rates of admission per 100,000 population per year (Table 2). Schizophrenia group disorders and affective disorders were the most common diagnoses among both men and women with involuntary status, with schizophrenia group disorders accounting for a greater proportion of male than female involuntary admissions, and affective disorders accounting for a greater proportion of female than male involuntary admissions (Table 3).

3.3. Duration of admission

Duration of admission was normally distributed with a mean of 20.2 days (SD: 55.6); this did not differ between women (mean: 19.6; SD: 33.1) and men (mean: 20.8; SD: 70.1; $t = -0.403$, $p = .687$) but was longer for involuntary (mean: 42.5; SD: 98.1) compared to voluntary patients (mean: 16.9; SD: 45.3; $t = -3.185$, $p = .002$); increased slightly with age (Pearson correlation coefficient: 0.144; $p < .001$); and was longer for patients with schizophrenia group disorders (mean: 34.3; SD: 74.6) compared to those with other diagnoses (mean; 15.1; SD: 45.9; Pearson Chi Square − 4.307, $p < .001$). On multi-variable analysis, duration of admission was independently associated with, in order of strength of association, involuntary status, schizophrenia group disorders and increasing age (Table 4).

Table 4
Predictors of duration of psychiatry admission in Tallaght University Hospital: multi-variable linear regression model.

Independent variables	β	Standard error	*p*	Tolerance value[a]
Gender	−0.839	3.391	.805	0.955
Age	0.497	0.122	< .001	0.822
Occupation	2.358	1.857	.204	0.936
Marital status	−0.157	1.525	.918	0.858
Diagnosis	−2.320	1.076	.031	0.945
Status (voluntary or involuntary)	24.778	4.954	< .001	0.967
Constant	−22.737	12.467	.068	–

This multi-variable linear regression model ($p < .001$) includes all admissions over the study period (1 July 2015 to 30 June 2017, inclusive). The dependent variable was duration of admission (days).
[a] To test for multicollinearity, a "tolerance value" was calculated for each independent variable; tolerance values below 0.25 indicate possible multicollinearity, and tolerance values below 0.10 indicate significant problems with multicollinearity (Katz, 1999).

3.4. Duration of involuntary care

A majority of patients whose status was involuntary for part or all of their admission were involuntary from the outset (84.4%) and the remaining 15.6% underwent a change of status from voluntary to involuntary during the course of their admission; these proportions did not differ between women and men (Pearson Chi Square 0.434, $p = .643$). Most involuntary admission orders were revoked by the responsible consultant psychiatrist (85.9%) and the remainder were revoked by mental health tribunals (5.5%), expired (2.3%) or the patient was transferred to another hospital while still an involuntary patient (6.3%); these proportions did not differ between women and men (Pearson Chi Square 3.553, $p = .314$).

For patients whose status was involuntary for part or all of their admission, duration of involuntary care was non-normally distributed (skewed to the right); the median duration of involuntary care was 17.0 days (inter-quartile range [IQR]: 9.0–34.0); this did not differ between women (median 18.0; IQR: 13.5–38.0) and men (median 15.0; IQR: 8.0–30.5; Mann Whitney U: 1165.00; $p = .050$); did not correlate with age (Spearman correlation coefficient: 0.142; $p = .133$); but was longer for patients with schizophrenia group disorders (median: 19.0 days; IQR: 13.0–40.0) compared to those with other diagnoses (median: 12.0; IQR: 8.0–18.0; Mann Whitney U: 2140.00; $p < .001$).

Table 3
Psychiatry admission diagnoses stratified by gender and admission status: Tallaght University Hospital (1 July 2015 to 30 June 2017, inclusive).

Diagnosis	Female patients[a]		Male patients[b]	
	Voluntary, *n* (%)	Involuntary, *n* (%)	Voluntary, *n* (%)	Involuntary, *n* (%)
Organic mental disorders	7 (1.4%)	2 (3.2%)	7 (1.3%)	3 (2.8%)
Alcohol disorders	14 (2.7%)	3 (4.8%)	27 (5.0%)	1 (0.9%)
Other drug disorders	19 (3.7%)	2 (3.2%)	46 (8.4%)	7 (6.6%)
Schizophrenia, schizotypal and delusional disorders	91 (17.6%)	35 (55.6%)	141 (25.9%)	67 (63.2%)
Affective disorders	160 (31.0%)	11 (17.5%)	134 (24.6%)	13 (12.3%)
Neurosis	78 (15.1%)	3 (4.8%)	56 (10.3%)	1 (0.9%)
Personality and behavioural disorders	101 (19.6%)	3 (4.8%)	57 (10.5%)	3 (2.8%)
Other and unspecified	46 (8.9%)	4 (6.3%)	77 (14.1%)	11 (10.4%)
Total	516 (100%)	63 (100.0%)	545 (100.0%)	106 (100.0%)

[a] Pearson Chi Square 54.212, $p < .001$.
[b] Pearson Chi Square 65.104, $p < .001$.

Table 5
Predictors of duration of involuntary care in Tallaght University Hospital: multi-variable linear regression model.

Independent variables	β	Standard error	*p*	Tolerance value[b]
Gender	−3.499	10.932	.750	0.917
Age	0.084	0.379	.824	0.754
Occupation	2.912	5.754	.614	0.825
Marital status	−3.044	5.498	.581	0.822
Diagnosis	−2.040	4.111	.621	0.895
Was the patient involuntary from the outset or did they undergo change of status?	12.445	13.763	.368	0.953
How did involuntary status end[a]	−0.058	6.450	.993	0.974
Constant	24.473	41.304	.555	–

This multi-variable linear regression model includes all admissions over the study period (1 July 2015 to 30 June 2017, inclusive). The dependent variable was duration of involuntary care (days).

[a] Was involuntary status terminated by: (a) involuntary admission order revoked by responsible consultant psychiatrist; (b) involuntary admission order revoked by mental health tribunal; (c) involuntary admission order expired and not renewed; or (d) patient transferred to another hospital while still an involuntary patient.

[b] To test for multicollinearity, a "tolerance value" was calculated for each independent variable; tolerance values below 0.25 indicate possible multicollinearity, and tolerance values below 0.10 indicate significant problems with multicollinearity (Katz, 1999).

On multi-variable analysis, however, none of these variables were independently associated with duration of involuntary care (Table 5).

4. Discussion

4.1. Admission rates

Admission rates to the Acute Psychiatry Unit at Tallaght University Hospital, Dublin between 1 July 2015 and 30 June 2017 were lower than the national rates for all admissions, involuntary admissions and voluntary admissions (Table 1). This might be attributable to the relatively well-developed community mental health services in this area; i.e. home-based treatment teams, community facilities at weekends, etc. (Gilhooley et al., 2017). The *proportions* of admissions that were involuntary in Tallaght were, however, similar to national data: almost 11% of female admissions in Tallaght were involuntary compared to just over 16% of male admissions; this is consistent with national data for both women (11%) and men (15%) (Table 1; Daly & Craig, 2017).

This pattern of proportionately fewer female admissions, both voluntary and involuntary, nationally and in our study, may relate to a number of factors. Greater help-seeking behaviours among women may lead to better engagement with outpatient services at an earlier stage of illness, thus reducing the need for inpatient care. More advanced stages of illness may necessitate both admission and use of the involuntary process in men. The published literature in this area is limited, suggesting scope for further research on potential gender differences in help-seeking behaviour in mental health.

Local resourcing undoubtedly impacts on decisions around inpatient admissions. Our finding that fewer patients were admitted overall in our study area compared to national figures (Daly & Craig, 2017) may relate to more limited bed availability in urban centres. There may also be clinician-related factors in deciding which patients should be admitted to a finite number of beds. Clinicians may prioritise patients presenting with disorders that appear more likely to benefit from acute treatment (e.g. schizophrenia, which is more common among male inpatients) over patients presenting with disorders that appear less likely to benefit from acute admission (e.g. personality and behavioural disorders, more common among female inpatients).

Emphasis on treatability over risk as a criterion for admission may go some way towards explaining low overall admission rates. The ability of psychiatrists to accurately predict risk of deliberate self-harm and suicide based on risk factors (Chan et al., 2016) and risk assessment scales (Quinlivan et al., 2016; Steeg et al., 2018) is very limited. This well-established finding may contribute to prioritisation of admission for those likely to respond to treatment in Ireland, over those at possible risk of self-harm. This is a point of contrast between Ireland and jurisdictions such as England, where risk is a key driver of mental health legislation (Kelly, 2016a).

4.2. Gender and diagnosis

Among all admissions (voluntary and involuntary) in Tallaght, women, compared to men, were more commonly diagnosed with affective disorders, neuroses, and personality and behavioural disorders, and less commonly diagnosed with schizophrenia group disorders and alcohol or drug disorders; this, too, is consistent with national data (Table 2; Daly & Craig, 2017). There were fewer diagnostic differences among involuntary patients: schizophrenia group disorders and affective disorders were the most common diagnoses among both men and women with involuntary status, although schizophrenia group disorders still accounted for a greater proportion of male than female involuntary admissions, and affective disorders accounted for a greater proportion of female than male involuntary admissions (Table 3).

Our finding that schizophrenia group disorders were the most common diagnoses among male and female involuntary patients may reflect the fact that patients presenting with these illnesses commonly meet the criteria for mental disorder, as defined in the Mental Health Act 2001. Our study found that proportionately more men were involuntarily admitted with schizophrenia group disorders compared to women. This may relate to core epidemiological differences, with schizophrenia generally cited as having a male to female *incidence* rate ratio of 1.4:1 (Abel, Drake, & Goldstein, 2010), although its *prevalence* appears constant across genders (Charlson et al., 2018).

Compared to men, women in our study had proportionately more involuntary admissions with affective disorders. Interpretation of the epidemiology of affective disorders is complex, given the diagnostic instability of these disorders over time. There is some evidence that lifetime rates of bipolar I disorder (depression and mania) are higher for males and bipolar II (depression and less severe hypomania) higher for females (Merikangas et al., 2011), but overall rates of bipolar spectrum disorders do not seem to differ between the genders (Seedat et al., 2009). Major depressive disorders have a higher prevalence among women (Seedat et al., 2009), perhaps contributing more significantly to our finding of proportionately more affective disorders among female involuntary patients.

Evidence of gender differences in symptoms among patients with schizophrenia may go some way to explaining some of the differences observed in admission patterns in our study. Men have been shown to have more negative symptoms, lower family support and more negative family attitudes; while women have been found to have better social functioning (Falkenburg & Tracy, 2014). Perhaps these differences mitigate the need for admission of women with schizophrenia, in favour of care in the community.

Finally, our study included a wide age range, ranging from 18 to 91 years. Given that schizophrenia has a later age of onset in women (Riecher-Rössler, Butler, & Kulkarni, 2018), future research looking specifically at involuntary admission of older adults might reveal further gender-specific trends of interest.

4.3. Duration of admission and involuntary care

Mean duration of admission in our study was just over 20 days; this did not differ between women and men but longer admission was independently associated with involuntary status, schizophrenia group disorders and increasing age (Table 4).

A majority of patients whose status was involuntary for part or all of their admission were involuntary from the outset (as opposed to undergoing a change of status) and, in a majority of cases, the admission orders were revoked by the consultant psychiatrist; these proportions did not differ between women and men. Duration of involuntary care was not significantly related to gender or any of the other factors examined (Table 5). Research exploring associations between gender and duration of admission or length of involuntary care is limited. Future research could explore if there truly is a significant gender association or if any apparent association is mediated by other factors such as age or diagnosis.

4.4. Strengths and limitations of the present study

Our study focuses on an important issue (the relationship between gender and specific aspects of involuntary admission, especially diagnosis) and examines a broad range of variables and co-variates, including age, occupation, marital status, duration of admission, duration of involuntary care, clinical diagnosis, whether the patient's status was involuntary from the outset or they underwent a change of status, and reason for termination of involuntary status. We used clinical diagnoses coded using the *International Classification of Diseases, Volume 10* (World Health Organization, 1992) and compared our results with national data (Daly & Craig, 2017) and the broader literature.

This paper builds on, updates and expands our previous work (Curley et al., 2016) by studying these themes during a more recent time period, at a different location, with expanded diagnostic information and with additional variables (e.g. relevance of change of status as opposed to being involuntary from the outset, comparing diagnoses stratified by gender with national data, etc.) in order to provide a more nuanced picture of gender-related differences in involuntary care, especially in relation to diagnosis.

Limitations include the fact that our research is based in a specific part of suburban Dublin, which may reduce generalisability; the assumption that census data are sufficiently accurate for this kind of analysis (although we used the most up-to-date census data available in as much detail as possible); that we recorded only one diagnosis per patient when some may have had two or more (this was to be consistent with national data collection methods and facilitate comparison); and that we could not examine certain variables known to relate to admission status such as insight (Kelly et al., 2004), severity of mental illness (Riecher et al., 1991), perceptions of dangerousness (Salize & Dressing, 2004), living arrangements (Lay et al., 2011), deprivation (Bindman, Tighe, Thornicroft, & Leese, 2002; Riecher et al., 1991) and level of social support (Webber & Huxley, 2004); these factors could be usefully examined in future studies that do not use the same data sources used for our study.

Finally, the vague definition of 'voluntary patient' in Ireland's legislation means that is it exceptionally difficult to gather evidence to explain the relevance of gender (or, indeed, any other factor) in shaping this population, as it includes patients who possess mental capacity and agree to admission, patients who lack mental capacity but do not object, and various other kinds of patients with different levels of mental capacity and cooperativeness. This definition is in need of legislative reform.

5. Conclusions

The chief gender-related features of involuntary psychiatry admission are that (a) proportionately fewer admissions of women are involuntary (11%) compared to admissions of men (16%), and (b) among all admissions, women are more commonly diagnosed with affective disorders, neuroses, and personality and behavioural disorders, and less commonly diagnosed with schizophrenia group disorders and alcohol or drug disorders, compared to men; these differences are less pronounced, although still present, among involuntary patients.

In drawing conclusions from these findings, it is important to note that legislation plays a significant but not necessarily defining role in psychiatric admission practices in Ireland. Historically, changes in mental health legislation, such as the Mental Treatment Act 1945, did not have significant impact on admission rates; broader social change and decreased tolerance of institutions appear to have been more relevant (Kelly, 2016b). As a result, conclusions from this study relate primarily to clinical practice rather than the content of legislation, and concern issues such as the operational allocation of limited healthcare resources, tolerance of risk in clinical practice, and perceptions of dangerousness among doctors, the police and other actors in the involuntary admission process.

On this basis, future research could usefully explore the balance between risk and treatability as grounds for involuntary care (especially compared with jurisdictions that place greater emphasis on risk, such as England); whether police involvement in the involuntary admission process in Ireland differs between genders (and, if so, the basis for such differences); the possibility that lower rates of involuntary admission among women reflect greater compliance with social norms and processes (compared to men); and the extent to which all patients experience a genuine difference between voluntary and involuntary status in psychiatric settings. To elucidate this final point further, it would be useful to extend this field of study beyond psychiatry and identify possible patterns of perceived coercion in non-psychiatric settings, such as hospital wards for care of the elderly, obstetric services, and other health-care contexts that might involve variable degrees of voluntariness, perceived coercion and involuntariness, all of which might have identifiable gender patterns of interest too.

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References

Abel, K. M., Drake, R., & Goldstein, J. M. (2010). Sex differences in schizophrenia. *International Review of Psychiatry (Abingdon, England), 22*(5), 417–428. https://doi.org/10.3109/09540261.2010.515205.

Audini, B., & Lelliott, P. (2002). Age, gender and ethnicity of those detained under Part II of the Mental Health Act 1983. *The British Journal of Psychiatry : The Journal of Mental Science, 180*, 222–226. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11872514.

Bindman, J., Tighe, J., Thornicroft, G., & Leese, M. (2002). Poverty, poor services, and compulsory psychiatric admission in England. *Social Psychiatry and Psychiatric Epidemiology, 37*(7), 341–345. https://doi.org/10.1007/s00127-002-0558-3.

Chan, M. K. Y., Bhatti, H., Meader, N., Stockton, S., Evans, J., O'Connor, R. C., ... Kendall, T. (2016). Predicting suicide following self-harm: Systematic review of risk factors and risk scales. *British Journal of Psychiatry, 209*(04), 277–283. https://doi.org/10.1192/bjp.bp.115.170050.

Chang, T. M. M., Ferreira, L. K., Ferreira, M. P., & Hirata, E. S. (2013). Clinical and demographic differences between voluntary and involuntary psychiatric admissions in a university hospital in Brazil. *Cadernos De Saude Publica, 29*(11), 2347–2352. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/24233048.

Charlson, F. J., Ferrari, A. J., Santomauro, D. F., Diminic, S., Stockings, E., Scott, J. G., ... Whiteford, H. A. (2018). Global epidemiology and burden of schizophrenia: Findings from the global burden of disease study 2016. *Schizophrenia Bulletin, 44*(6), 1195–1203. https://doi.org/10.1093/schbul/sby058.

Curley, A., Agada, E., Emechebe, A., Anamdi, C., Ng, X. T., Duffy, R., & Kelly, B. D. (2016). Exploring and explaining involuntary care: The relationship between psychiatric admission status, gender and other demographic and clinical variables. *International Journal of Law and Psychiatry, 47*, 53–59. https://doi.org/10.1016/j.ijlp.2016.02.034.

Daly, A., & Craig, S.. Activities of Irish Psychiatric Units and Hospitals 2017 Main Findings. (2017). Retrieved from www.hrb.ie (Published in 2018).

Department of Health (2015). *Report of the Expert Group on the Review of the Mental Health Act 2001.* Dublin, Ireland: Department of Health.

Eytan, A., Chatton, A., Safran, E., & Khazaal, Y. (2013). Impact of psychiatrists' qualifications on the rate of compulsory admissions. *The Psychiatric Quarterly, 84*(1), 73–80.

https://doi.org/10.1007/s11126-012-9228-0.
Falkenburg, J., & Tracy, D. K. (2014). Sex and schizophrenia: A review of gender differences. *Psychosis, 6*(1), 61–69. https://doi.org/10.1080/17522439.2012.733405.
Ferrari, M., Flora, N., Anderson, K. K., Haughton, A., Tuck, A., Archie, S., ... ACE Project Team (2018). Gender differences in pathways to care for early psychosis. *Early Intervention in Psychiatry, 12*(3), 355–361. https://doi.org/10.1111/eip.12324.
Gilhooley, J., Umama-Agada, E., Asghar, M., McManus, S., Whitty, P. F., & Kelly, B. D. (2017). Voluntary and involuntary psychiatric admissions in a suburban area: Comparison with national rates, diagnosis and other correlates of involuntary admission status. *Irish Journal of Psychological Medicine, 34*(4), 243–249. https://doi.org/10.1017/ipm.2017.44.
Geller, J. L., & Harris, M. (1995). *Women of the Asylum: Voices from Behind the Walls, 1840-1945.* New York: Anchor/Doubleday.
Gou, L., Zhou, J.-S., Xiang, Y.-T., Zhu, X.-M., Correll, C. U., Ungvari, G. S., ... Wang, X.-P. (2014). Frequency of involuntary admissions and its associations with demographic and clinical characteristics in China. *Archives of Psychiatric Nursing, 28*(4), 272–276. https://doi.org/10.1016/j.apnu.2014.04.002.
Health and Social Care Information Centre (2016). *Inpatients formally detained in hospitals under the Mental Health Act 1983 and patients subject to Supervised Community Treatment: 2015/16, Annual figures*. Leeds: Health and Social Care Information Centre.
Houston, K. G., Mariotto, M., & Hays, J. R. (2001). Outcomes for psychiatric patients following first admission: Relationships with voluntary and involuntary treatment and ethnicity. *Psychological Reports, 88*(3_suppl), 1012–1014. https://doi.org/10.2466/pr0.2001.88.3c.1012.
Hustoft, K., Larsen, T. K., Auestad, B., Joa, I., Johannessen, J. O., & Ruud, T. (2013). Predictors of involuntary hospitalizations to acute psychiatry. *International Journal of Law and Psychiatry, 36*(2), 136–143. https://doi.org/10.1016/j.ijlp.2013.01.006.
Katz, M. H. (1999). *Multivariable analysis.* Cambridge: Cambridge University Press.
Kelly, B. D., Clarke, M., Browne, S., McTigue, O., Kamali, M., Gervin, M., ... O'Callaghan, E. (2004). Clinical predictors of admission status in first episode schizophrenia. *European Psychiatry, 19*(2), 67–71. https://doi.org/10.1016/j.eurpsy.2003.07.009.
Kelly, B. D. (2016a). *Mental illness, human rights and the law.* London: RCPsych Publications.
Kelly, B. D. (2016b). *Hearing voices: The history of psychiatry in Ireland.* Dublin: Irish Academic Press.
Lawlor, C., Johnson, S., Cole, L., & Howard, L. M. (2012). Ethnic variations in pathways to acute care and compulsory detention for women experiencing a mental health crisis. *The International Journal of Social Psychiatry, 58*(1), 3–15. https://doi.org/10.1177/0020764010382369.
Lay, B., Nordt, C., & Rössler, W. (2011). Variation in use of coercive measures in psychiatric hospitals. *European Psychiatry, 26*(4), 244–251. https://doi.org/10.1016/j.eurpsy.2010.11.007.
Merikangas, K. R., Jin, R., He, J.-P., Kessler, R. C., Lee, S., Sampson, N. A., ... Zarkov, Z. (2011). Prevalence and correlates of bipolar spectrum disorder in the world mental health survey initiative. *Archives of General Psychiatry, 68*(3), 241. https://doi.org/10.1001/archgenpsychiatry.2011.12.
Mulder, C. L., Uitenbroek, D., Broer, J., Lendemeijer, B., van Veldhuizen, J. R., van Tilburg, W., ... Wierdsma, A. I. (2008). Changing patterns in emergency involuntary admissions in the Netherlands in the period 2000-2004. *International Journal of Law and Psychiatry, 31*(4), 331–336. https://doi.org/10.1016/j.ijlp.2008.06.007.
Myklebust, L. H., Sørgaard, K., & Wynn, R. (2014). Local psychiatric beds appear to decrease the use of involuntary admission: A case-registry study. *BMC Health Services Research, 14*(1), 64. https://doi.org/10.1186/1472-6963-14-64.
Pawlowski, T., & Baranowski, P. (2017). How patients' characteristics influence the use of coercive measures. *Indian Journal of Psychiatry*. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_100_17.
Priebe, S., Katsakou, C., Yeeles, K., Amos, T., Morriss, R., Wang, D., & Wykes, T. (2011). Predictors of clinical and social outcomes following involuntary hospital admission: A prospective observational study. *European Archives of Psychiatry and Clinical Neuroscience, 261*(5), 377–386. https://doi.org/10.1007/s00406-010-0179-x.
Quinlivan, L., Cooper, J., Davies, L., Hawton, K., Gunnell, D., & Kapur, N. (2016). Which are the most useful scales for predicting repeat self-harm? A systematic review evaluating risk scales using measures of diagnostic accuracy. *BMJ Open, 6*(2), e009297. https://doi.org/10.1136/bmjopen-2015-009297.
Riecher, A., Rössler, W., Löffler, W., & Fätkenheuer, B. (1991). Factors influencing compulsory admission of psychiatric patients. *Psychological Medicine, 21*(1), 197–208. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/2047496.
Riecher-Rössler, A., Butler, S., & Kulkarni, J. (2018). Sex and gender differences in schizophrenic psychoses—A critical review. *Archives of Women's Mental Health, 21*(6), 627–648. https://doi.org/10.1007/s00737-018-0847-9.
Salize, H. J., & Dressing, H. (2004). Epidemiology of involuntary placement of mentally ill people across the European Union. *The British Journal of Psychiatry: The Journal of Mental Science, 184*, 163–168. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/14754830.
Seedat, S., Scott, K. M., Angermeyer, M. C., Berglund, P., Bromet, E. J., Brugha, T. S., ... Kessler, R. C. (2009). Cross-national associations between gender and mental disorders in the World Health Organization world mental health surveys. *Archives of General Psychiatry, 66*(7), 785–795. https://doi.org/10.1001/archgenpsychiatry.2009.36.
Shorter, E. (1997). *A History of Psychiatry: From the Era of the Asylum to the Age of Prozac.* New York: John Wiley and Sons.
Steeg, S., Quinlivan, L., Nowland, R., Carroll, R., Casey, D., Clements, C., ... Kapur, N. (2018). Accuracy of risk scales for predicting repeat self-harm and suicide: A multicentre, population-level cohort study using routine clinical data. *BMC Psychiatry, 18*(1), 113. https://doi.org/10.1186/s12888-018-1693-z.
Umama-Agada, E., Asghar, M., Curley, A., Gilhooley, J., Duffy, R. M., & Kelly, B. D. (2018). Variations in involuntary admission rates at three psychiatry centres in the Dublin Involuntary Admission Study (DIAS): Can the differences be explained? *International Journal of Law and Psychiatry, 57*, 17–23. https://doi.org/10.1016/j.ijlp.2017.12.007.
Webber, M., & Huxley, P. (2004). Social exclusion and risk of emergency compulsory admission. A case-control study. *Social Psychiatry and Psychiatric Epidemiology, 39*(12), 1000–1009. https://doi.org/10.1007/s00127-004-0836-3.
Wheeler, A., Robinson, E., & Robinson, G. (2005). Admissions to acute psychiatric inpatient services in Auckland, New Zealand: A demographic and diagnostic review. *The New Zealand Medical Journal, 118*(1226), U1752. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16311610.
World Health Organization (1992). *International classification of diseases* (10th ed.). Geneva: World Health Organization.
World Medical Association (2008). *WMA declaration of Helsinki – Ethical principles for medical research involving human subjects.* Ferney-Voltaire: World Medical Association.