Admission patterns in a Psychiatric Intensive Care Unit in Ireland: A longitudinal follow up

Sujesha Navanathan[1] , Shaeraine Raaj Pararajasingam[2], Basil Matti [3], Anisha Bhagawan [4],John Lally [5] ,Roy Browne[6] ,Pauline Twomey[7]

1.Highfield Healthcare ,Whitehall, Dublin
2. Tallaght University Hospital Dublin
3. North Tipperary Mental Health Services
4. National Maternity Hospital, Holles Street, Dublin
5. Mater Misercordiae University Hospital, Dublin
6. Psychiatry Intensive Care Unit, Phoenix Care Centre , Dublin
7. Unaffiliated

Background

In the last three-decades, psychiatric care in Ireland has transitioned from asylum care to a community mental health service model. This led to a reduction in the total number of patients in institutional care in Ireland. The Phoenix Care Centre is a built for purpose facility that was built on the grounds of St. Brendan's Hospital as set out in the national policy and initiatives "A Vision for Change" for mental health in 2006 (Health Service Executive 2015; HSE, 2017). Phoenix Care Centre (PCC) is a state-of-the-art purpose-built mental health facility which includes a Psychiatric Intensive Care Unit located in inner-city Dublin.

A Psychiatric Intensive Care Unit (PICU) is a tertiary mental health service designed to provide intensive care to patients who are in an acutely disturbed phase of a major mental disorder (Dame Bailey, 2014; Winkler D et al., 2019).

A typical PICU patient likely to be young, male, single, unemployed, with a diagnosis of schizophrenia or mania, from the Caribbean or African background, legally detained with a forensic history (Bowers et al., 2008). The UK and Australian literature described PICU as small wards, with a higher proportion of nursing and other staff, built on an open plan designed to promote observation and often locked with facilities for seclusion (Bowers et al., 2008).

PCC relies on dynamic factors, for example, increased nurse to patient ratio and security. Static characteristics are locked doors, security cameras, and walls to minimise risk. Each ward is comprised of a well-resourced specialist multidisciplinary team. A fully-staffed multidisciplinary team for a 12 bedded unit provides a higher level of support and increased face to face time with patients

METHODS

This retrospective cohort study was carried out at the Phoenix Care Centre Dublin, Ireland. Informed consent was not sought as this was a retrospective chart study involving anonymised clinical data which was collected as part of routine clinical care and no items of information were reported that would enable the identification of any subject.

All patients admitted between January 2014 to January 2017 to PCC)formed the study group. Information for the study was extracted from clinical medical records and medication charts. Data collected from clinical medical records included a total of 14 variables: Gender, age, ethnicity, marital status, primary ICD 10 diagnosis, concurrent alcohol/substance use, behaviour precursor (behaviour preceding referral to the PICU), referral source, previous admission to PICU, forensic history, course of admission (number of restraint episodes, seclusion episodes, 1:1 nursing interventions), list of psychotropic medications (this includes antipsychotic dose in milligrams expressed as a percentage of the BNF maximum recommended daily dose), high antipsychotic dose (cumulative antipsychotic dose >100% of maximum BNF recommended daily dose), and Length Of Stay (LOS).

We described primary outcomes using frequencies, percentages, mean and standard deviations, median and interquartile ranges (IQR). Between groups comparisons were made using x2 tests for categorical variables; t-tests, ANOVA tests, or Kruskal-Wallis tests, for continuous variables; All analyses were two-tailed, and a P-value≤0.05 was considered statistically significant.

DISCUSSION

Our study demonstrated antipsychotic polypharmacy were commonly used in treatment (table 2). An interesting development describing males were less likely to be treated with single high dose antipsychotics (n=11, 65%) compared to females (n=4, 80%). Differing MDT practices could be a contributing factor. This study described high dose antipsychotic use measured by cumulative antipsychotic dose >100% of BNF maximum recommended daily use. This finding highlights the severity and complexity of this cohort of patients which was prudent in the administration of high dose antipsychotic medication.

An important finding from our study was the shorter average LOS for males compared to females. A recent UK cohort identified a similar shorter average LOS for male patients, with an average overall LOS of 43 days (O Brien 2013).

Assaultive behaviour is a typical risk behaviour preceding PICU admission. However, over the course of admission, the low incidence of violence at the Phoenix Care Centre reflects similar studies (Crowhurst et al., 2002). The Phoenix Care Centre had reduced the risk and need for seclusion (13.2 %) and restraint (5.7%) compared to secondary acute psychiatric units. This could be due to the built for purpose facility including the higher nursing ratio and low stimulus environment (Dame Bailey et al., 2014)

We identified that schizophrenia was the largest diagnostic category, accounting for 46% of patients. A review of PICU admissions found that in UK settings that schizophrenia accounts for 50% of admissions, with a further 20% admitted with mania (Bowers et al., 2008).

AIM

This observational study aims to describe the course of the admission and clinical characteristics of admissions to the PICUs in the Phoenix Care Centre, Dublin, Ireland. The authors hypothesised that the length of stay (LOS) would be shorter in male patients as compared to females.

CONCLUSION

PICU is an essential service for the severely ill psychiatric patients and is a progressively developing sub-speciality. Our research findings provide novel insights into clinical care in this PICU setting. We determined that physical assaults are an important determinant in PICU admission. The PICU setting provides clinical management and intensive care to the most disturbed psychiatric patients. In this study, we provide important evidence for the characteristics of treatment and duration of admission. Further research is needed to expand on these findings in moving forward with PICUs.

RESULTS

	Total	Male (n; %)	Female (n; %)	χ^2 / t test; p value
Gender	91	53 (58.2%)	38(41.8%)	
Age mean (SD)	37.1 (11.3)	34.2 (10.3)	41.2 (11.4)	0.003
Ethnicity				χ^2
White	82 (90.2%)	48 (58.5%)	34 (41.5%)	3.342; 0.342
Black African	4 (4.4%)	1 (25.0%)	3 (75.0%)	
Asian	2 (2.2%)	2 (100%)	0	
Middle Eastern	3 (3.3%)	2 (66.7%)	1 (33.3%)	
Marital status				χ^2
Single	84 (92.3%)	50 (59.5%)	34 (40.5%)	2.853; 0.240
Married/in a relationship	5 (5.5%)	3 (60.0%)	2 (40.0%)	
Divorced/separated	2 (2.2%)	0	2 (100%)	
Diagnosis (n=; %)				χ^2
Schizophrenia	39 (42.9%)	31 (79.5%)*	8 (21.5%)	22.823; p<0.001
SAD	18 (18.0%)	6 (33.3%)	12 (66.7%)**	
BPAD	21 (21.0%)	14 (66.7%)	7 (33.3%)	
Acute psychotic disorder	9 (9.0%)	2 (22.2%)	7 (77.8%)	
Depression	1	0	1 (100%)	
EUPD	2 (2.0%)	0	2 (100%)	
ADHD	1 (1.2%)	0	1 (100%)	
Psychotic disorder with presence of alcohol/substances	45(54.2%)	33 (73.3%)*	12 (26.7%)	χ^2 3.826; 0.042*
Psychotic Disorder without Alcohol/Substances	38 (45.8%)	20 (52.6%)	18 (72.7%)	

Table 1. Sociodemographic & clinical characteristics of cases & gender comparisons (n; %)

	Total	Male (n; %)	Female (n;%)	
Referral source				χ^2
Dublin area	75 (82.4%)	45 (84.9%)	30 (78.9%)	0.542; 0.321
Outside Dublin area	16 (17.6%)	8 (15.1%)	8 (21.1%)	
Previous PICU admission				χ^2
Yes	27 (29.7%)	13 (24.5%)	14 (36.8%)	1.608; 0.150
No	64 (70.3%)	40 (75.5%)	24 (63.2%)	
Reason for PICU admission				χ^2
Assault	62 (62.0%)	37 (59.7%)	25 (40.3%)	1.017; 0.219
Aggression	14 (15.4%)	11 (78.6%)*	3 (21.4%)	4.582; 0.032*
Absconding	9 (9.9%)	4 (44.4%)	5 (55.6%)	
Suicidal ideation/risk	1 (1.1%)	0	1 (100%)	0.733; 0.264
No risk identified	5 (5.5%)	1 (20.0%)	4 (80.0%)	
Multiple reasons identified for admission (>1)				χ^2
Yes	55 (60.4%)	30 (56.6%)	25 (65.8%)	0.781; 0.253
No	36 (39.6%)	23 (43.4%)	13 (34.2%)	
Forensic history				χ^2
Yes	28 (30.8%)	20 (37.7%)	8 (21.1%)	2.892; 0.070
No	63 (69.2%)	33 (62.3%)	30 (78.9%)	
Number of risks identified pre-admission (mean (SD))	1.8 (0.9) (range:0-4)	1.8(1.0)	1.7 (0.9)	t test 0.22; 0.044

Table 2. Pre-admission clinical characteristics

Gender	0.826	2.606	3.919	<0.001
Age	0.005	-0.110	0.019	0.500
Diagnosis of schizoaffective disorder	0.142	-0.273	0.556	0.497
Diagnosis of acute psychosis disorder	-1.207	-1.691	-0.363	0.003
Psychotic disorder with Comorbid alcohol/substance misuse	-0.112	-0.424	0.200	0.477
Multiple risks identified pre-admission (>1),	0.401	0.096	0.706	0.011
Number of restraint episodes	0.021	-0.019	0.061	0.295
Mood stabiliser used	-0.344	-0.649	-0.038	0.028

Table 3. Associations between demographic & clinical variables