

Characteristics of a later life population in a general adult community mental health service setting

R. O'Sullivan^{1*}, M. Cosgrave^{1,2}, A. Butler^{1,2} and J.P. Lyne^{1,2}

¹ Department of Psychiatry, Ashlin Centre, Beaumont Road, Dublin, Ireland

² Royal College of Surgeons in Ireland, 111 St. Stephen's Green, Dublin 2, Ireland

Objectives: Globally, increasing life expectancy has escalated demands on psychiatric services caring for a later life population. It is recognised that those with enduring mental illness may have specific needs with advancing age. In this study, we describe the characteristics of a population aged over 60 years attending a general adult community psychiatric service and compare demographic and clinical features across age and diagnostic categories. The study aims to gather preliminary information which may guide future local mental health service planning.

Methods: We conducted a cross-sectional observational study using retrospective chart review of all patients aged over 60 years attending four community mental health teams in North Dublin. Cohorts of attenders were stratified by age comparing 60–64 year age group with the population aged 65 years and over. Attenders were also stratified by diagnosis and regression analysis was used to determine predictors of psychotic disorder diagnosis.

Results: The study included 127 patients. There was a higher prevalence of psychotic disorders among those aged 65 years and over ($n = 73$), while those aged 60–64 years ($n = 54$) were more likely to have depression and non-affective, non-psychotic disorders. Among the population aged 65 years and over 78% ($n = 57$) were long-term psychiatric service attenders.

Conclusions: The majority of the sample aged 65 years and over were long-term service attenders with a diagnosis of severe mental illness. Further research is warranted to determine optimal service delivery for later life psychiatric service attenders.

Received 23 May 2019; Revised 24 April 2021; Accepted 16 May 2021; First published online 16 June 2021

Key words: Graduates, psychiatry of old age, psychiatry of later life.

Introduction

The global population is ageing rapidly with mean life expectancy increasing by 5.5 years between 2000 and 2016, the fastest increase since the 1960s (World Health Organization 2019). This has major implications for how we deliver healthcare which requires urgent research. As life expectancy increases, individuals with severe and enduring mental illness are likely to live longer which will bring the issue of how they are best cared for to the fore. The widespread closure of psychiatric institutions that have traditionally provided care for some of this population has further impacted on this issue; whilst the move to community management is generally a positive step, care in community settings presents new challenges requiring consideration.

In countries where they exist, specialised psychiatry of later life services often provide care to the cohort of patients who experience a new onset of psychiatric illness in later life, which may be functional or organic; or care to those who have disengaged from general adult services

for a variably defined time period. General adult services and rehabilitation psychiatry services generally continue to provide care to those who have had diagnoses in early or middle adult life, even after they progress into later life. The latter group are sometimes referred to as 'graduates', a term initially used to describe those in institutions who transitioned into later life (Arie & Jolley 1982). Now the term is more broadly used to describe individuals with functional psychiatric illness diagnosed before the age of 65 years who 'graduate' into later life with an established diagnosis (Abdul-Hamid *et al.* 1998). Previous study of the graduate population has highlighted specific needs for this population which highlight that this is a vulnerable group who can potentially fall between services (McNulty *et al.* 2003; Jolley *et al.* 2004; Abdul-Hamid *et al.* 2009; Abdul-Hamid *et al.* 2015).

The current study was conducted in Ireland where an ageing population has been highlighted in census figures since the 1980s (Central Statistics Office 2017). The population aged over 65 years increased by 19% between 2011 and 2016 alone. In the 2016 census, there were 637 567 people aged over 65 years and this figure is projected to rise further (Central Statistics Office 2017). This will inevitably increase demand on

*Address for correspondence: Dr Roisin O'Sullivan, Department of Psychiatry, Tallaght University Hospital, Dublin 24, Ireland. (Email: Roisin.osullivan1@hse.ie)

specialised psychiatry of later life services; however, it will also likely increase demands on general adult community mental health teams providing care for a graduate population.

Previous Irish research has highlighted the need to plan for graduates in Ireland following the closure of psychiatric institutions (Wrigley *et al.* 2006a, 2006b). Lawlor and colleagues demonstrated that graduates in psychiatry of later life services had higher overall service utilisation than their non-graduate counterparts in the same service which highlighted the debate as to which service should care for this group of patients (Lawlor *et al.* 2006). Lawlor and colleagues outlined the need for appropriate resources for graduates in whatever service was most appropriate, that is, psychiatry of later life, rehabilitation psychiatry or general adult services. An Irish mental health policy document, *A Vision for Change*, recommended graduates at the age of 65 years should have the option of choosing to continue attending their general adult mental health team or choosing to transfer their care to their local psychiatry of later life team, and that the final decision should be needs-based (Department of Health and Children 2006).

In the current study, we sought to characterise the demographic and clinical features of a newer generation of graduates in a general adult community mental health service. Whilst psychiatry of later life is typically considered to be over 65 years, we extended our study to those aged 60–64 years to include the cohort that are approaching later life as this will also impact on service provision planning. We aimed to describe different cohorts of attenders stratified by age and diagnosis and to compare individuals aged 60–64 years with those aged over 65 years.

Methods

Setting

This study was conducted in the North Dublin Mental Health Services in the Swords, Coolock, Darndale and Kilbarrack East sectors. These urban, suburban, and rural catchment areas have a total estimated population of 152 789 people, as per census figures published by the central statistics office. The study included all current attenders in the general adult mental health services for these catchment areas, aged 60 years and over. There were no other exclusion criteria.

Data collection

Data were collected in outpatient clinics as a cross-sectional retrospective chart review of all current service attenders in May 2018. Data in relation to demographics, age at first presentation, and current

medications were extracted from clinical records. Age at first presentation was considered as a proxy for age of onset of mental illness. Diagnoses were determined by a chart review and classified using ICD-10 criteria into the categories of (i) depressive disorder, (ii) bipolar affective disorder, (iii) psychotic disorder, and (iv) non-affective, non-psychotic disorder (World Health Organization 1992). The primary diagnosis for each individual was determined by comprehensive chart review, and comorbid diagnoses were not included in the analysis. Individuals were deemed to have a depressive disorder if they had a depressive episode or recurrent depressive disorder. The bipolar affective disorder group comprised only those individuals with this diagnosis. Individuals were deemed to have a psychotic disorder if they had schizophrenia, schizoaffective disorder, persistent delusional disorder, or unspecified non-organic psychosis. Individuals with a primary diagnosis of obsessive-compulsive disorder, acute stress reaction, adjustment disorder, persistent mood disorder, phobic anxiety disorder, other anxiety disorder, personality disorder, or mental and behavioural disorder due to use of alcohol were all classified as non-affective, non-psychotic disorder.

Statistical analysis

Statistical analyses were conducted using IBM SPSS Statistics Version 20 and Stata/IC version 16.0. Descriptive statistics were used to summarise and describe collected data. Chi-squared analyses were conducted across relevant sample characteristics including age categories (60–64 years *v.* 65 years and older, chosen as this is the age cut-off for later life psychiatry services); age at first known presentation to a psychiatric service (<40 years *v.* 40 years and over, chosen as this age category was closest to the median age of the sample which was 36 years); primary diagnosis (depressive disorder; bipolar affective disorder; psychotic disorder, and non-affective, non-psychotic disorder); and medication including antipsychotics, antidepressants, benzodiazepines, anticholinergics and hypnotics (clozapine and lithium were also described separately given the need for increased blood monitoring with these medications). Significance values were based on two-tailed testing with *p*-values of less than 0.05 deemed to be significant.

Regression analyses were conducted for prediction of diagnostic category where there was more than one predictor of these outcomes using univariate analysis. Omnibus test of model coefficients and Hosmer–Lemeshow goodness-of-fit test was assessed for each of the final regression models. Pseudo R-square was reported for each model. For each model, the exponential of the regression coefficient was reported, which

corresponds to the odds ratio for the relationship of that independent variable with depression. We did not include medication as an independent variable for regression analyses of diagnosis, as individuals are prescribed medications based on their diagnosis and hence medication is not a useful predictor of diagnosis.

Results

A summary of the characteristics of the study population is outlined in Table 1. The study included 127 subjects. In the sample, 42.5% ($n=54$) were aged under 65 years, with a mean age of 67.1 years ($SD=5.9$). Age at first presentation was spread evenly throughout the adult lifespan. The mean age of 39.3 years ($SD=12.8$) and median age of 36 years indicated predominant onset of illness in adulthood rather than later life. Among the overall sample, 72% ($n=91$) had attended psychiatric services for more than 20 years with the mean number of years since first known presentation being 28.7 years ($SD=13.9$). This suggests that this population is predominantly comprised of long-term service attenders. This was particularly evident in the 65 years and over age category in which 78% ($n=57$) had attended psychiatric services for more than 20 years, while this figure was 63% ($n=34$) for the sample aged 60–64 years. Bipolar affective disorder and psychotic disorders accounted for almost 65% ($n=82$) of the sample, with non-affective, non-psychotic disorders including anxiety disorders and personality disorders accounting for just 15% ($n=19$) of the sample.

Almost 70% ($n=87$) of the population were prescribed an antipsychotic. Prescription of two or more different antipsychotics occurred in 14 (11%) individuals. Over half of the sample were prescribed an antidepressant. A substantial number were prescribed benzodiazepines (25.2%, $n=32$), hypnotics (34.6%, $n=44$), and anticholinergics (21.3%, $n=27$).

Table 2 outlines characteristics of the sample across age categories comparing the younger population (60–64 years) with the older graduate population (65 years and over). Notably, 75.3% ($n=55$) of those aged 65 years and over were prescribed an antipsychotic compared to 59.3% ($n=32$) in the younger age category ($p=0.054$). The older graduate population were also significantly more likely to be prescribed an anticholinergic, in keeping with greater antipsychotic prescribing.

Two (1.6%) individuals in the entire sample were on clozapine and these two individuals were both in the 60–64 years age category (3.7% of the 60–64 years age category). Twenty individuals (15.7%) in the entire sample were prescribed lithium, seven (13.0%) of whom were aged 60–64 years while 13 (17.8%) were aged over 65 years.

Table 3 outlines the characteristics of the sample across primary diagnosis categories, with each diagnostic category being compared with all other diagnoses. Of note, younger age of first known presentation to a psychiatric service was associated with diagnosis of a psychotic disorder. A similar non-significant trend was evident in bipolar affective disorder. Depressive disorders and non-affective, non-psychotic disorders were more prevalent in those who first presented to psychiatric services after the age of 40 years.

We performed a binary logistic regression analysis to determine which variables were independent predictors of psychotic disorder in the population. The final regression model was significant (omnibus test of model coefficients chi-squared = 17.88, $p<0.001$), and the Hosmer–Lemeshow goodness-of-fit test was greater than 0.05. The pseudo R-square for the model was 10.56%. In the final regression model, both age 65 years or greater (OR 2.65, CI 1.19–5.90, $p=0.017$) and age under 40 years at first presentation (OR 4.22, CI = 1.86–5.97, $p=0.001$) were significant predictors of psychotic disorder.

Discussion

This study describes a population aged over 60 years attending a general adult mental health service and specifically compared individuals aged 60–64 years with those aged 65 years and over. The study found a high prevalence of severe and enduring mental illness in this population with over 60% having a diagnosis of psychosis or bipolar affective disorder. The study found there was a significantly greater prevalence of a primary diagnosis of psychotic disorder in the older graduate population when compared to the younger cohort aged 60–64 years. In addition, there is a greater prevalence of a diagnosis of psychotic disorder among those who initially presented to mental health services before the age of 40 years, a finding which remained in regression analysis. Those who initially presented after the age of 40 years were more likely to have depression and be prescribed an antidepressant. They were also more likely to have a primary diagnosis of a non-affective, non-psychotic disorder such as an anxiety disorder or personality disorder.

Service delivery for older adults with mental illness requires careful consideration. Traditionally, before the advent of specialised psychiatry of later life services, older adults with mental illness were often cared for in psychiatric institutions. The development of psychiatry of later life services has substantially improved mental healthcare for a later life population; however, defining appropriate patient populations for these services is challenging, particularly given the limited resources available. The Royal College of Psychiatrists set out

Table 1. Description of the overall sample (n=127)

	n	%
Gender		
Female	71	55.9
Age (years)		
60–64	54	42.5
65–69	34	26.8
70–74	22	17.3
≥75	17	13.4
Age at first known presentation to a psychiatric service (years)		
<30	33	26.0
30–39	39	30.7
40–49	24	18.9
≥50	31	24.4
No. of years since first known presentation to a psychiatric service		
<10	17	13.4
10–19	19	15.0
20–29	24	18.9
30–39	37	29.1
≥40	30	23.6
Primary diagnosis		
Depressive disorder	26	20.5
Bipolar affective disorder	34	26.8
Psychotic disorder	48	37.8
Non-affective, non-psychotic disorder	19	15.0
Medication		
Antipsychotic (includes oral and depot antipsychotic)	87	68.5
Depot antipsychotic	30	23.6
Antidepressant	67	52.8
Anticholinergic	27	21.3
Benzodiazepine	32	25.2
Hypnotic	44	34.6
Other psychotropic	40	31.5

Table 2. Description of sample across age categories (n=127)

Age (years)	60–64 (n=54)		≥65 (n=73)		Chi-squared value	p-Value
	n	%	n	%		
Gender						
Male	22	40.7	34	46.6	0.429	0.513
Female	32	59.3	39	53.4		
Age at first known presentation to a psychiatric service (years)						
<40	32	59.3	40	54.8	0.252	0.616
≥40	22	40.7	33	45.2		
Prescribed Medication						
Antipsychotic	32	59.3	55	75.3	3.721	0.054
Antidepressant	32	59.3	35	47.9	1.594	0.207
Anticholinergic	6	11.1	21	28.8	5.780	0.016
Benzodiazepine	12	22.2	20	27.4	0.441	0.507
Hypnotic	18	33.3	26	35.6	0.072	0.789

Table 3. Comparison across each primary diagnosis versus all other disorders

Primary diagnosis	Depressive disorder (n=26)		Other disorder (n=101)		Chi-squared	p-Value	Bipolar affective disorder (n=34)		Other disorder (n=93)		Chi-squared	p-Value
	n	%	n	%			n	%	n	%		
Age (years)												
<65	16	61.5	38	37.6	4.839	0.028	11	32.4	43	46.2	1.964	0.161
≥65	10	38.5	63	62.4			23	67.6	50	53.8		
Gender												
Male	12	46.2	44	43.6	0.056	0.813	15	44.1	41	44.1	0.000	0.997
Female	14	53.8	57	56.4			19	55.9	52	55.9		
Age at first presentation* (years)												
<40	6	23.1	66	65.3	15.047	<0.001	24	70.6	48	51.6	3.651	0.056
≥40	20	76.9	35	34.7			10	29.4	45	48.4		

Primary diagnosis	Psychotic disorder (n=48)		Other disorder (n=79)		Chi-squared	p-Value	Non-affective, non-psychotic disorders (n=19)		Other disorder (n= 108)		Chi-squared	p-Value
	n	%	n	%			n	%	n	%		
Age (years)												
<65	15	31.2	39	49.4	4.010	0.045	12	63.2	42	38.9	3.894	0.048
≥65	33	68.8	40	50.6			7	36.8	66	61.1		
Gender												
Male	20	41.7	36	45.6	0.185	0.668	9	47.4	47	43.5	0.097	0.755
Female	28	58.3	43	54.4			10	52.6	61	56.5		
Age at first presentation* (years)												
<40	36	75.0	36	45.6	10.533	0.001	6	31.6	66	61.1	5.740	0.017
≥40	12	25.0	43	54.4			13	68.4	42	38.9		

*Age at first known presentation to a psychiatric service.

needs-based criteria for attenders of psychiatry of later life services such as a diagnosis of dementia, comorbid physical illness or frailty, and psychosocial difficulties related to the ageing process (Warner 2015). This profile may apply to some but likely not all graduates, who in this study were found to often have long-standing severe and enduring mental illness. These presentations are typically cared for by a general adult mental health service who may have greater expertise in managing this population and furthermore have well-established relationships with the graduate population who may have been attending the service for many years. Later life psychiatry services might have greater expertise for presentations more typical of mental illness in later life, such as cognitive impairment or the agitation and physical symptoms associated with depression in an older population (The Royal College of Psychiatrists 2018).

There are also arguments for transferring care of a graduate population to psychiatry of later life mental health services. The presence of medical comorbidities, polypharmacy, cognitive impairment, mobility issues, increased care needs, accommodation needs, and legal issues such as capacity assessment requirements are areas of need common to both graduates as they age and those presenting with mental illness for the first time in later life. There may be more relevant expertise in specialised psychiatry of later life services to meet these complex needs. One previous study suggested that graduates in psychiatry of later life services had fewer unmet needs than graduates in general adult mental health services (Abdul-Hamid *et al.* 2015).

Although the arguments for service structure and delivery for this population are complex, regardless of which service delivers care it is crucial that sufficient resources are allocated to care for this vulnerable group. Resources in general adult services are often directed to younger cohorts of patients such as risk management associated with self-harm and treatment of severe psychotic episodes. The older population with more enduring and often more stable presentations may therefore be at risk of lower levels of input from services. It is also notable that psychiatry of later life services have expertise in areas specific to later life and it is appropriate that they provide a consultation service for graduate populations in general adult services. This tends to be the informal arrangement across services, but consideration should be given to whether this role is formalised in national policy and funded as such. It would also be helpful for psychiatry of later life services to take a lead in educating general adult psychiatry colleagues in relation to issues specific to later life mental illness.

This study identifies that the graduate cohort in this sample had a high prevalence of severe and enduring mental illness and high levels of antipsychotic

prescribing. In addition to the premature mortality associated with severe and enduring mental illness, the older population are at risk of medical comorbidities, frailty, cognitive impairment, and complications of polypharmacy, making them an especially vulnerable group (The Royal College of Psychiatrists, 2019). Further research relating to the broad health needs of these individuals would be helpful to further clarify the most appropriate care pathway for this population. There are several approaches which would be of interest in this regard. It would be helpful to compare individuals aged over 65 years in general adult psychiatry services with a similar age group in psychiatry of later life services, particularly comparing their broad biopsychosocial needs as well as comparing differences in management strategies between the two services. It would also be informative to compare those aged over 65 years in general adult psychiatry services with all individuals aged 18–64 years in general adult psychiatry services and in particular to study the cohort of younger attenders with severe enduring mental illness who will likely become the graduates of services in the future. Comparison of types of referral for adults aged 60–64 years with referrals to later life services (aged over 65 years) may also inform service needs in this population. Future research could also evaluate substance use disorders, personality disorders, and other diagnoses in a later life population in greater detail.

Strengths and limitations

There are several limitations to the study. Data were collected based on retrospective chart review which reduces precision of data collected. We did not have access to several characteristics of interest including socio-economic groupings, the needs of the studied population, employment status, education status, and a robust measure of cognition. Longitudinal evaluation would be superior to cross-sectional data for describing the study sample. The findings may not necessarily be generalisable to other services and it is acknowledged that the demographic and socio-economic characteristics of general adult psychiatry services vary substantially. Strengths of the study are that it was conducted across four catchment areas within a mixture of urban, suburban, and rural demographics.

Conclusions

This study has provided important information about a graduate population which will be of interest to both general adult psychiatry services and psychiatry of later life services. The findings do not provide strong evidence that current practices of general adult psychiatry services managing graduate populations should be

changed, particularly given that the majority of this population are long-standing service users with severe and enduring mental illness. Nonetheless further research among those with mental illness in later life is needed to guide service planning and ensure the provision of high-quality mental health services for this vulnerable group in an ageing population.

Acknowledgement

The authors would like to thank the Community Mental Health Teams who facilitated this research, particularly the administrative assistance which they received during this study. The authors would like to acknowledge the input of the reviewers who contributed substantially to improving this paper.

Financial support

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Conflict of interest

RO'S has no conflicts of interest to disclose. AB has no conflicts of interest to disclose. MC has no conflicts of interest to disclose. JL is editor of the Irish Journal of Psychological Medicine but did not act as handling editor for this paper.

Ethical standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The local research ethics committee confirmed that ethical approval was not required for this study.

References

Abdul-Hamid W, Holloway F, Silverman M (1998).

Psychiatric care needs of elderly graduates-unanswered questions. *Aging & Mental Health* **2**, 167–170.

Abdul-Hamid W, Johnson S, Thornicroft G, Holloway F, Stansfeld S (2009). The Camberwell elderly mentally ill

and their needs for services. *International Journal of Social Psychiatry* **55**, 82–90.

Abdul-Hamid W, Lewis-Cole K, Holloway F, Silverman AM (2015). Comparison of how old age psychiatry and general adult psychiatry services meet the needs of elderly people with functional mental illness: cross-sectional survey. *The British Journal of Psychiatry* **207**, 440–443.

Arie T, Jolley DJ (1982). Making services work: organisation and style of psychogeriatric services. In *The Psychiatry of Late Life* (ed. R. Levy and F. Post), pp. 222–251. Blackwell: London.

Central Statistics Office (2017). Census 2016 Summary Results. Central Statistics Office. (<https://www.cso.ie>). Accessed 17 September 2018.

Department of Health and Children (2006). A Vision for Change. Department of Health and Children. (<https://health.gov.ie>). Accessed 17 September 2018.

Jolley D, Kosky N, Holloway F (2004). Older people with long-standing mental illness: the graduates. *Advances in Psychiatric Treatment* **10**, 27–36.

Lawlor B, Clifford M, Motala F, Cassidy B (2006). An audit of service utilization by graduates attending an old age psychiatry service. *International Journal of Geriatric Psychiatry* **21**, 1215–1216.

McNulty S, Duncan L, Semple M, Jackson GA, Pelosi AJ (2003). Care needs of elderly people with schizophrenia, assessment of an epidemiologically defined cohort in Scotland. *British Journal of Psychiatry* **182**, 241–247.

The Royal College of Psychiatrists (2018). *Suffering in Silence: Age Inequality in Older People's Mental Health Care*. The Royal College of Psychiatrists: UK.

The Royal College of Psychiatrists (2019). *Caring for the Whole Person*. The Royal College of Psychiatrists: UK.

Warner JP (2015). Old age psychiatry in the modern age. *The British Journal of Psychiatry* **207**, 375–376.

World Health Organization (1992). *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. World Health Organization: Geneva.

World Health Organization (2019). Global Health Observatory Data. (https://www.who.int/gho/mortality_burden_disease/life_tables/situation_trends_text/en/). Accessed 31 March 2019.

Wrigley M, Murphy B, Farrell M, Cassidy B, Ryan J (2006a). Older people with enduring or recurrent severe mental illness in the Eastern Region of Ireland. *Irish Journal of Psychological Medicine* **23**, 145–150.

Wrigley M, Murphy B, Farrell M, Cassidy B, Ryan J (2006b). Older people with enduring or recurrent severe mental illness (graduates): a literature review. *Irish Journal of Psychological Medicine* **23**, 151–155.