Hospital admission characteristics for children and adolescents with OCD in Sydney, Australia (Letter)

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Letter to the editor

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Obsessive-compulsive disorder (OCD) affects 2–4% of children and adolescents and is often associated with substantial functional impairment [1]. Yet children and young people with OCD are often unable to access timely evidence-based care [2], with an average delay of 2.5 years between onset of symptoms and diagnosis [1]. In severe or complex cases, inpatient admission is sometimes necessary. Routinely collected hospital admission data can elucidate service enhancement opportunities for young people with OCD. We found no published data examining routine inpatient care for children and young people with OCD.

The Sydney Children's Hospitals Network (SCHN) is the largest provider of children's health services in Australia. We compared characteristics of OCD admissions relative to other diagnoses using de-identified routinely collected data for the two SCHN mental health inpatient units (January 2016 to April 2022; ethics approval 2022/ETH012013). We examined between-group differences using Kruskal Wallis, Mann-Whitney U and Chi-squared tests, as group sizes were uneven and not normally distributed, with a Bonferroni correction for multiple comparisons ($p < .00$).

Over six years, there were 63 admissions with a primary diagnosis of OCD ($M_{age} = 14.02$, $SD_{age} = 1.48$, 54% female at admission) and an additional 143 with a non-primary diagnosis of OCD ($M_{age} = 14.20$, $SD_{age} = 1.78$, 75% female at admission). Patients with any diagnosis of OCD comprised 8.95% of mental health admissions and 14.58% of hospital bed days. There were significantly more admissions for OCD in 2021 than expected based on previous years, but expected numbers during 2020 and 2022, $X^2(6, 2301) = 15.07$, $p = .02$, indicating a transient rise in OCD admissions associated with the COVID-19 pandemic.

Table 1 displays admissions characteristics per primary diagnostic group; between-group analyses considered primary diagnosis only. Age ($p < .001$), gender ($p < .001$), voluntary/involuntary admission status ($p < .001$), length of stay ($p < .001$) and hospital readmission ($p = .016$) rates differed between diagnostic groups. Post-hoc analyses revealed that OCD admissions for younger than average patients, and younger specifically than admissions for eating disorders ($U = 3033.00$, $p < .001$) and mood disorders ($U = 1207.00$, $p < .001$). Similar to other disorders, OCD admissions were more commonly for females than males.

The emergency department (34.9%) or public community mental health (11.1%) were the most frequent referral sources for OCD admissions. Admissions were predominantly voluntary (95.2%)—the highest proportion among all diagnoses. Admissions typically lasted for 23 days, the longest length of stay aside from psychotic disorders, and longer than admissions for depression, anxiety disorders, injuries and accidents, trauma and other disorders ($U = 2438.00$–$21,890.50$, all p's < 0.001). Accordingly, the mean admission cost ($64,297AUD) for primary OCD was the second highest. The total conservatively estimated cost to the hospital was $4,050,750 for primary OCD and $10,939,500 for all OCD diagnoses. Despite long admissions, 17.5% of young people admitted with OCD were readmitted within 28 days—the highest readmission rate aside from trauma disorders.

Patients with OCD therefore represented a substantial diagnostic group, with 9% of admissions having an OCD diagnosis. Moreover, rates of OCD are often under-diagnosed in primary care settings [3], so true rates of OCD may be even higher. Patients with OCD tended to be young, compliant with hospitalisation recommendations, and often engaged with community treatment teams. However, their hospital stays were long and expensive, yet seemingly only partially effective as they were frequently re-admitted within a few weeks of discharge (noting that current data cannot delineate effectiveness of hospital admission compared to community-based follow-up). The characteristics of OCD admissions approximated those of psychotic disorders, rather than depression or anxiety, highlighting the severity and functional impact of OCD in this cohort. The available data were limited as they did not contain treatment history nor OCD symptom/outcome variables. Owing to unequal diagnostic subgroup sizes and multiple comparisons, some results became insignificant after Bonferroni correction. A larger dataset would enable more in-depth analyses.

These results provide insight to 'real world' treatment of severe paediatric OCD Although young people living with severe OCD are often connected with community services, their care needs are high, and they are frequently readmitted to hospital after lengthy stays with admissions patterns akin to psychosis. This converges with evidence that OCD in adults is associated with similar functional impairment as schizophrenia

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Table 1
Descriptive and Comparison Statistics between each Primary Diagnostic Group, by Size of Group.

	a) OCD (n = 63)	b) Depression (n = 1052)	c) Anxiety Disorders (n = 253)	d) Others (n = 239)	e) Injuries and accidents (n = 164)	f) Eating Disorders (n = 161)	g) Trauma Disorders (n = 159)	h) Psychotic Disorders (n = 125)	i) Other Mood Disorders (n = 58)	j) Developmental Disorders (n = 27)	Statistical Analysis
Age											
M	14.02	14.33	14.15	13.38	14.09	15.04	14.42	14.58	14.95	13.26	**H(9) = 104.18, p < .001**
(SD)	(1.48)	(1.28)	(1.30)	(2.97)	(1.55)	(1.52)	(1.46)	(1.51)	(1.43)	(1.85)	**Difference (*U* test): a-f, a-i**
Gender											
Female *N* (%)	34 (54.0)	852 (81.0)	204 (80.6)	148 (61.9)	129 (78.7)	159 (98.8)	133 (83.6)	55 (44.0)	31 (53.4)	8 (29.6)	**χ2 = 230.85, p < .001**
Male *N* (%)	29 (46.0)	200 (19.0)	49 (19.4)	91 (38.1)	35 (21.3)	2 (1.2)	26 (16.4)	70 (56.0)	27 (46.6)	19 (70.4)	
Adjusted residual (female)	−4.2	5	1.8	−5.5	0.8	7	2.3	−8.7	−4.1	−5.7	
Adjusted *p*	0.04	0.00	0.95	0.00	1.00	0.00	0.81	0.00	0.05	0.00	
Legal status of admission											
Voluntary *N* (%)	60 (95.2)	956 (90.9)	236 (93.3)	212 (88.7)	148 (90.2)	137 (85.1)	139 (87.4)	91 (72.8)	40 (69.0)	24 (88.9)	
Involuntary *N* (%)	3 (4.8)	96 (9.1)	17 (6.7)	27 (11.3)	16 (9.8)	24 (14.9)	20 (12.6)	34 (27.2)	18 (31.0)	3 (11.1)	
Adjusted residual (involuntary)	−1.6	−2.9	−2.4	4.8	−0.6	1.5	0.6	5.8	4.8	0	**χ2 70.21, p < .001**
Adjusted *p*	0.98	0.49	0.76	0.01	1	0.99	1	0	0.01	1	
Length of stay (days)											
M	23.38	10.56	8.04	9.03	7.12	17.43	8.95	29.22	18.33	14.3	**H(9) = 140.32, p < .001**
(SD)	−30.87	−18.17	−8.6	−14.11	−16.44	−30.8	−13.43	−36.51	−22.93	−24.74	**Difference (U test): a-b, a-c, a-d, a-e, a-g**
Cost per Admission (AUD)											
M	$64,297	$29,052	$22,119	$24,842	$19,568	$47,945	$24,611	$80,344	$50,400	$39,416	**H(9) = 140.32, p < .001**
(SD)	($84,890)	($49,974)	($23,660)	($38,787)	($45,213)	($84,700)	($36,924)	($100,412)	($63,050)	($68,048)	**Difference (U test): a-b, a-c, a-d, a-e, a-g**
Hospital readmission											
No readmission *N* (%)	52 (82.5)	899 (85.5)	214 (84.6)	211 (88.3)	150 (91.5)	136 (84.5)	127 (79.9)	117 (93.6)	51 (87.9)	26 (96.3)	
Readmission *N* (%)	11 (17.5)	153 (14.5)	39 (15.4)	28 (11.7)	14 (8.5)	25 (15.5)	32 (20.1)	8 (6.4)	7 (12.1)	1 (3.7)	**χ2 20.39, p = .016**
Adjusted residual (readmission)	0.8	0.9	0.8	−1	−2	0.7	2.4	−2.5	−0.4	−1.5	
Adjusted *p*	1.00	1.00	1.00	1.00	0.91	1.00	0.76	0.71	1	0.99	
Referral source											
N (%)											
Type Change Admission	18 (28.6)	288 (27.4)	110 (43.5)	73 (30.5)	7 (4.3)	52 (32.3)	70 (44.0)	33 (26.4)	17 (29.3)	5 (18.5)	
Medical Practitioner	4 (6.3)	37 (3.5)	20 (7.9)	11 (4.6)	2 (1.2)	7 (4.3)	4 (2.5)	5 (4.0)	1 (1.7)	1 (3.7)	
Emergency Department	22 (34.9)	450 (42.8)	73 (28.9)	92 (38.5)	131 (79.9)	34 (21.1)	48 (30.2)	47 (37.6)	21 (36.2)	10 (37.0)	
Hospital in same Health Service	2 (3.2)	48 (4.6)	11 (4.3)	9 (3.8)	3 (1.8)	11 (6.8)	11 (6.9)	7 (5.6)	2 (3.4)	2 (7.4)	**χ2 = 368.73, p < .001**
Relative	1 (1.6)	25 (2.4)	6 (2.4)	10 (4.2)	5 (3.0)	1 (0.6)	6 (3.8)	1 (0.8)	1 (1.7)	1 (3.7)	
Other	4 (6.3)	54 (5.1)	11 (4.3)	19 (7.9)	2 (1.2)	40 (24.8)	8 (5.0)	5 (4.0)	4 (6.9)	2 (7.4)	
Hospital/Day Centre	5 (7.9)	129 (12.3)	17 (6.7)	23 (9.6)	14 (8.5)	15 (9.3)	8 (5.0)	20 (16.0)	7 (12.1)	2 (7.4)	
Community Health	7 (11.1)	21 (2.0)	5 (2.0)	2 (0.8)	0 (0)	1 (0.6)	4 (2.5)	7 (5.6)	5 (8.6)	4 (14.8)	

Notes: Cost per admission calculated per each patient as Length of Stay multiplied by cost of admission per day ($2750 AUD), hence statistical results are the same for length of stay and cost per admission. Adjusted residuals and adjusted *p* values reported for chi squared analyses.
Abbreviations: Obsessive-compulsive disorder (OCD).

[4]. A targeted model of care is warranted for OCD as a severe mental illness with complex treatment characteristics requiring specialised treatment [2].

Any model of care must appraise the purpose of a hospital admission in a patient's journey [5]—the clearest indication being containment of acute risk that is unsafe or infeasible in the community (e.g., refeeding in the case of OCD-associated food restriction) [6]. A staged model of care must predominantly focus on community-based treatment to reduce the occurrence of, and optimise the effectiveness of, hospitalisations, e.g. by more effectively managing symptoms immediately post-discharge. For instance, a tiered capacity-building model of care for paediatric OCD [7], implemented and under evaluation, in public mental health services in Sydney, Australia overlaps with an approach recommended by the UK National Health Service [8]. This model offers group-based ERP for mild-moderate symptoms whilst young people with severe-extreme symptoms are offered 'wrap-around' treatment by a multidisciplinary team including intensive ERP. Another recent proposed staged care model includes digital ERP, accompanying parent support, plus in-person intensive ERP sessions with dose titrated to severity [9]. Implementing a model of care across community and hospital could address needs across the spectrum of severity to achieve value-based care by balancing feasibility and cost-effectiveness while enhancing inpatient care for those that need it.

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Data availability

The authors do not have permission to share data.

References

[1] Geller DA. Obsessive-compulsive and spectrum disorders in children and adolescents. Psychiatr. Clin. N. Am. 2006;29:353–70. https://doi.org/10.1016/j.psc.2006.02.012.

[2] Reid AM, Guzick AG, Fernandez AG, Deacon B, McNamara JPH, Geffken GR, et al. Exposure therapy for youth with anxiety: utilization rates and predictors of implementation in a sample of practicing clinicians from across the United States. J Anxiety Disord 2018;58:8–17. https://doi.org/10.1016/j.janxdis.2018.06.002.

[3] National Collaborating Centre for Mental Health. Obsessive-compulsive disorder: Core interventions in the treatment of obsessive-compulsive disorder and body dysmorphic disorder. In: National Clinical Practice Guideline Number 31; 2006. https://www.nice.org.uk/guidance/cg31/evidence/full-guideline-194883373.

[4] Bystitsky A, Liberman RP, Hwang S, Wallace CJ, Vapnik T, Maindment K, et al. Social functioning and quality of life comparisons between obsessive-compulsive and schizophrenic disorders. Depress. Anxiety 2001;14:214–8.

[5] Perkes IE, Birmaher B, Hazell PL. Indications for psychiatric hospitalization of children and adolescents. Aust N Z J Psychiatry 2019;53(8):729–31. https://doi.org/10.1177/00048674198359.

[6] Lewis A, Stokes C, Heyman I, Turner C, Krebs G. (2020). Conceptualizing and managing risk in pediatric OCD: case examples. Bull. Menn. Clin. 2020;84(1):3–20. https://doi.org/10.1521/bumc_2019_83_06.

[7] Perkes IE, Grisham JR, Farrell LJ, Dyason KM, Racz J. OCD BOUNCE: A model of care for paediatric OCD. 2022. osf.io/bhxyz.

[8] Kochar N, Ip S, VardanegaV Sireau NT, Fineberg NA. A cost-of-illness analysis of the economic burden of obsessive-compulsive disorder in the United Kingdom Comprehensive Psychiatry127; 2023. https://doi.org/10.1016/j.comppsych.2023.152422. 152422.

[9] Farrell LJ, Waters AM, Storch EA, Simcock G, Perkes IE, Grisham JR, et al. Closing the gap: a staged-care model of cognitive-behavioural therapy with exposure and response prevention. Clin. Child. Fam. Psychol. Rev. 2023. https://doi.org/10.1007/s10567-023-00439-2.

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