

Psychopathology of adolescents with an intellectual disability who present to general hospital services

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Abstract

Objective: Adolescents with intellectual disability have increased rates of psychopathology compared with their typically developing peers and present to hospital more frequently for ambulant conditions. The aim of this study is to describe the psychopathology and related characteristics of a sample of adolescents with intellectual disability who presented to general hospital services.

Method: We investigated a cohort of adolescents with intellectual disability in South East Queensland, Australia between January 2006 and June 2010. Demographic and clinical data were obtained via mailed questionnaires and from general practice notes. Psychopathology was measured with the Short Form of the Developmental Behaviour Checklist.

Results: Of 98 individuals presenting to hospital, 71 (72.5%) had significant levels of psychopathology. Unknown aetiology for the intellectual disability was associated with presence of problem behaviours. Adolescents with more severe intellectual disability were more likely to have major problem behaviours. Co-morbid physical health issues were not associated with psychopathology. Only 12 (12.1%) adolescents had undergone specialized mental health intervention.

Conclusions: The general hospital environment may offer opportunities for liaison psychiatry services to screen and provide management expertise for adolescent individuals with intellectual disability presenting for physical health issues.

Keywords: intellectual disability, adolescents, mental health, hospitalization

Approximately 2-3% of the Australian population has an intellectual disability.¹ People with intellectual disability have significant cognitive limitations with reduced adaptive functioning and personal independence and usually need ongoing support.²

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Adolescents with intellectual disability have higher prevalence estimates than their peers for a range of medical conditions³ and can experience the full range of psychiatric conditions.⁴ Their rate of clinically significant psychopathology is up to four times higher than peers without an intellectual disability.⁵ The co-occurrence of intellectual disability and psychiatric illness negatively impacts both the affected individual and their carers.⁶ Psychopathology can contribute to the development of challenging behaviours and lead to reduced socialization opportunities and increased carer stress.⁷ These negative outcomes reduce opportunities for a full life and underscore a need for early detection and management; however, numerous barriers to timely care exist.⁸

Adults with intellectual disability have increased rates of hospital admissions compared with their non-disabled peers.⁹ Opportunities for intervention by specialized services may arise in the general hospital; however, there is a paucity of literature regarding assessment of people with an intellectual disability by liaison psychiatry services.¹⁰ Knowing more about the psychopathology and individual characteristics of individuals presenting to hospital is an important step to informing service delivery. The aim of this study is to measure psychopathology and describe related characteristics of adolescents with intellectual disability presenting to general hospital services.

Method

Participants

We investigated a cohort of adolescent individuals with intellectual disability in South East Queensland, Australia between January 2006 and June 2010. Participants were originally recruited for the Ask Study, a large randomized controlled trial of a health intervention.¹¹ Adolescents were eligible to participate in the Ask Study if they were aged between 10 and 20 years, attended a Special Education School (SES) or Special Education Unit (SEU) in a mainstream school and had been assessed by Education Queensland as having an intellectual disability. Students attending a SES usually have a more severe intellectual disability than those attending a SEU. The trial had ethics approval from the University of Queensland and Queensland Government Department of Education and the Arts.

Data collection

Demographic, social and clinical data were obtained from carers by mailed questionnaire in May 2007 and further clinical data were extracted from the adolescent's general practice record. Research staff visited each participant's usual general practice and obtained a copy of their medical records, including all test results and correspondence, from 1 January 2006 to the date of the collection (September 2009–June 2010).

Demographic characteristics, adolescent general health

The carer questionnaire recorded age and gender, and assessment of general health (categorized as poor/fair/good/very good/excellent).

Co-morbidities

Aetiology of intellectual disability (Down syndrome/other known cause/unknown) was identified by carer report, as were the presence of epilepsy, a previous psychiatric diagnosis, constipation and hearing and vision problems.

Psychopathology

Psychopathology was measured with the well validated Short Form of the Developmental Behaviour Checklist (DBC-P24),¹² which was completed by carers. The outcome measure is the Mean Behaviour Problem Score (MBPS), which is the mean score of the 24 items on the checklist (each item is scored as 0/1/2). Significant psychopathology, or psychiatric caseness, is considered as present when the measured MPBS is 0.48 or greater.¹² This group was further divided into minor and major behaviour problem groups at 0.83, the median value of those with behaviour problems.

Hospitalizations

All presentations to hospital services were identified from general practice records. A presentation was defined as any record of inpatient or ambulatory care received at a non-primary care facility. Hospital visits were categorized as either day cases (less than 24 h) or as inpatient admission (greater than 24 h).

Medications

Medication data was extracted manually from the general practice notes. This data was grouped according to class of psychotropic, although it was not possible to determine the indication for all medications.

Analysis

Summary statistics are presented as frequency (percentage). The association between participant characteristics and behaviour problem category was investigated using multinomial logistic regression. Analysis was undertaken using Stata statistical software v.12 (StataCorp, College Station, TX, USA).

Results

Questionnaire data were received for 592 and general practice data were collected for 435 adolescents. Ninety-eight (22.5%) adolescents were identified as having

accessed hospital services. The total number of known inpatient admissions was 137, involving 66 adolescents (range=1–10 per adolescent). Of these, there were only five mental health admissions, involving three individuals. There were 59 adolescents who were identified as presenting as day cases (range=1–9 admissions, total admissions=109). For eight admissions there was insufficient information to identify admission length.

Psychiatric caseness (MBPS ≥ 0.48) was similar in adolescents hospitalized ($n=71$, 72.5%) and not hospitalized ($n=328$, 67.2%). There were 37 (37.8%) with minor and 34 (34.7%) with major behaviour problems, compared with equivalent figures of 163 (33.4%) and 165 (33.8%) among those not hospitalized. A new psychiatric diagnosis was recorded for 13 (13.2%) of the hospitalized sample during the course of the study. Specialist mental health review had occurred for 12 (12.1%) of the 98 adolescents with half of these reviews conducted by a psychiatrist and the remainder by a psychologist. The most commonly prescribed medication class was anticonvulsants ($n=33$, 33.7%) followed by benzodiazepines ($n=13$, 13.3%), antipsychotic medications ($n=11$, 11.2%) and antidepressants ($n=8$, 8.0%). No class of medication was significantly associated with behaviour problems.

The association between individual characteristics and level of behaviour problem for hospitalized adolescents are presented in Table 1. Adolescents attending a SEU were less likely to have major behavioural problems than adolescents attending a SES (odds ratio (OR)=0.1; 95% confidence interval (CI)=0.0–0.6). Adolescents with an unknown aetiology of intellectual disability were more likely to have minor behaviour problems (OR=13.3; 95% CI=1.6–113.0). Epilepsy, constipation and sensory impairments were not associated with level of behaviour problems.

Discussion

Adolescents with intellectual disability participating in this study had a higher prevalence of psychopathology than identified in previous studies irrespective of their hospitalization status. Australian research using a clinical sample has reported a population prevalence amongst 4–18 year olds with intellectual disability of 40.7%.⁵ A Swedish study involving a community sample, as used in our current study, and utilizing the original 96-item version of the Developmental Behaviour Checklist, reported higher prevalences of 64% for individuals with severe intellectual disability and 57% for mild intellectual

Table 1. The association between demographic and clinical characteristics of hospitalized cohort participants and major and minor behaviour problems

Characteristic	N	No behaviour problems (N=27)		Minor behaviour problems (N=37)		Major behaviour problems (N=34)		Minor behaviour problems		Major behaviour problems	
		n (%)	n (%)	n (%)	n (%)	OR (95% CI)	p	OR (95% CI)	p		
School type											
Special Education School	74	16 (21.6)	27 (38.5)	31 (41.9)	1.0		1.0				
Special Education Unit	24	11 (45.8)	10 (41.7)	3 (12.5)	0.5 (0.2, 1.6)	0.25	0.1 (0.0, 0.6)	0.006			
Age, years											
11–13	17	2 (11.8)	6 (35.3)	9 (52.9)	2.4 (0.4, 13.1)	0.32	4.5 (0.9, 23.6)	0.08			
14–16	62	19 (30.6)	24 (38.7)	19 (30.7)	1.0		1.0				
17	19	6 (31.6)	7 (36.8)	6 (31.6)	0.9 (0.7, 2.3)	0.90	1.0 (0.3, 3.7)	1.00			
Gender											
Male	54	14 (25.9)	19 (35.2)	21 (38.9)	1.0		1.0				
Female	44	13 (29.5)	18 (40.9)	13 (29.6)	1.0 (0.4, 2.8)	0.97	0.7 (0.2, 2.0)	0.44			
Aetiology of disability											
Down syndrome	17	6 (35.3)	7 (41.2)	4 (23.5)	1.3 (0.4, 4.6)	0.69	0.6 (0.1, 2.3)	0.41			
Other known aetiology	62	20 (32.3)	18 (29.0)	24 (38.7)	1.0		1.0				
Unknown aetiology	18	1 (5.6)	12 (66.7)	5 (27.8)	13.3 (1.6, 113.0)	0.02	4.2 (0.5, 38.7)	0.21			
Health conditions											
No epilepsy	64	21 (32.8)	23 (35.9)	20 (31.3)	1.0		1.0				
Epilepsy	34	6 (17.7)	14 (41.2)	14 (41.2)	2.1 (0.7, 6.6)	0.19	2.5 (0.8, 7.6)	0.12			
No psychiatric diagnosis	86	27 (31.4)	35 (40.7)	24 (27.9)	1.0		1.0				
Psychiatric diagnosis	10	0 (0.0)	2 (20.0)	8 (80.0)	N/A		N/A				

(Continued)

Table 1. (Continued)

Characteristic	N	No behaviour problems (N=27)		Minor behaviour problems (N=37)		Major behaviour problems (N=34)		
		n (%)	n (%)	n (%)	n (%)	OR (95% CI)	p	
No vision impairment	43	12 (27.8)	15 (34.9)	16 (37.2)	1.0		1.0	
Vision impairment	55	15 (27.3)	22 (40.0)	18 (32.7)	1.2 (0.4, 3.2)	0.76	0.9 (0.3, 2.5)	0.84
No hearing impairment	78	23 (29.5)	30 (38.5)	25 (32.1)	1.0		1.0	
Hearing impairment	20	4 (20.0)	7 (35.0)	9 (45.0)	1.3 (0.4, 5.1)	0.67	2.1 (0.6, 7.7)	0.28
No constipation	71	22 (31.0)	25 (35.2)	24 (33.8)	1.0		1.0	
Constipation	27	5 (18.5)	12 (44.4)	10 (37.0)	1.3 (0.4, 5.1)	0.67	2.1 (0.6, 7.7)	0.28
Current general health								
Excellent	16	6 (37.5)	8 (50.0)	2 (12.5)	1.0		1.0	
Very good	26	8 (30.8)	12 (46.2)	6 (23.1)	1.1 (0.3, 4.5)	0.87	2.3 (0.3, 15.3)	0.41
Good	33	10 (30.3)	11 (33.3)	12 (36.4)	0.8 (0.2, 3.2)	0.78	3.6 (0.6, 21.9)	0.17
Fair	17	2 (11.8)	4 (23.5)	11 (64.7)	1.5 (0.2, 11.1)	0.69	16.5 (1.8, 148.6)	0.01
Poor	6	1 (16.7)	2 (33.3)	3 (50.0)	1.5 (0.1, 20.7)	0.76	9.0 (0.6, 143.9)	0.12
Medications								
No antipsychotics	87	27 (31.0)	35 (40.2)	25 (28.7)	1.0		1.0	
Antipsychotics	11	0 (0.00)	2 (18.2)	9 (81.8)	N/A		N/A	
No antidepressants	89	25 (28.1)	34 (28.2)	30 (33.7)	1.0		1.0	
Antidepressants	9	2 (22.2)	3 (33.3)	4 (44.4)	1.1 (0.2, 7.1)	0.92	1.7 (0.3, 9.9)	0.56
No anticonvulsants	65	21 (32.3)	23 (35.4)	21 (32.3)	1.0		1.0	
Anticonvulsants	33	6 (18.2)	14 (42.4)	13 (39.4)	2.1 (0.7, 6.6)	0.19	2.2 (0.7, 6.8)	0.18
No benzodiazepines	85	25 (29.4)	31 (36.5)	29 (34.1)	1.0		1.0	
Benzodiazepines	13	2 (15.4)	6 (46.2)	5 (38.5)	2.4 (0.5, 13.0)	0.10	2.2 (0.4, 12.1)	0.38

OR: odds ratio; CI: confidence interval.

disability.¹³ Direct assessment was utilized rather than carer reports as in our study; however, the age range was similar. The difference in prevalence of psychopathology between those hospitalized and those not hospitalized in our study was small, which may relate to the fact that the majority of patients were being admitted for physical rather than mental health issues. Co-morbid physical health issues were not associated with increased behaviour problems although hospitalized individuals who were attending a SEU (more likely to have a mild intellectual disability and less likely to have co-morbid physical illness) were less likely to have major behaviour problems. Adolescents with no known cause of their intellectual disability were more likely to have minor behaviour problems compared with adolescents with a known cause. If a genetic cause can be determined which has a known behavioural phenotype, such as Prader-Willi syndrome or Fragile X syndrome, this is likely to have clinical management implications.

Despite high rates of psychopathology, mental health admission or review occurred infrequently in our study

(12.1%), which replicates previous findings.¹⁴ Hospital psychiatry liaison services have an opportunity to develop service capacity by playing a greater role in the assessment and management of adolescents with intellectual disability.

The present study is derived from a large cohort similar in age and social position to the population of Queensland school children from which they are drawn. Hospitalization information was extracted from medical records by trained health professionals, reducing the likelihood of recall and misclassification bias. A limitation of using general practice medical records is that the presence of information relies on doctors recording any verbal advice of the hospitalization, or the inclusion of letters/discharge summaries from hospitals in the notes. The total number of admissions is likely to be even greater for the sample, but there is no reason to suspect that any particular type of admission would be more likely to be omitted, meaning that our estimates of association are not likely to be effected by recording bias.

Conclusions

The presentation of an adolescent with an intellectual disability to hospital should be considered an opportunity to identify co-morbid psychopathology, which could inform their on-going care. This, together with enhanced medical workforce training in the assessment and management of mental health problems in adolescents with intellectual disability, could lead to improved outcomes for this population.

Disclosure

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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