

# Prevalence of Mental Disorders and Associated Service Variables Among Ontario Children Who Are Permanent Wards

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**Objective:** To identify the prevalence rate of mental disorders among Ontario children who are permanent wards and also the key practice and descriptive variables associated with their diagnostic status.

**Method:** I reviewed case files from a stratified random sample of 429 Ontario children who were permanent wards with no access to biological parents on December 31, 2003. Data abstracted from files included information on descriptive variables (such as age, sex, and type of permanent ward), all disorders (that is, mental and other current medical diagnoses and disabilities), family history, maltreatment experiences, service history (such as age at admission to care and current residential placement type), and permanency plans.

**Results:** The prevalence of mental disorders was 31.7%. A significantly higher proportion of children with mental disorders experienced maltreatment. Children with mental disorders were almost 3 times more likely than those without mental disorders to be placed by Children's Aid Societies in privately operated resources, such as group homes, and almost 10 times less likely to be living in a probationary adoption home. Although children with mental disorders were less likely to have a permanency plan of adoption than were children without mental disorders, regression analysis found that only 2 variables—age on becoming a permanent ward and age at the time of the study—were predictive of children's adoption plans.

**Conclusions:** The findings support the need for improved monitoring of the aggregate mental health needs of children who are permanent wards. Numerous implications for service delivery and future research are discussed.

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## Clinical Implications

- The high rate of mental disorders among the children in the sample suggests an ongoing need for thorough evaluations and treatment to be available to all children who are or become permanent wards of the state.
- Enhanced psychiatric assessment and treatment attention should focus on older children who are admitted to, and remain in, care.

## Limitation

- This study reports children's diagnosed disorders and did not use informants and standardized measures of symptoms or psychopathology to confirm the appropriateness of diagnoses.

**Key Words:** *child psychiatry, epidemiology, children's mental health services, child health, foster children, foster care, child welfare, maltreatment, permanency planning, adoption*

Staff members in the child welfare sector are required to promote the safety and health of the foster children they supervise. According to the executive director of the Child Welfare League of Canada, provincial ministries commonly direct these staff to identify and address the particular emotional and behavioural needs of children in care but cannot necessarily provide the professional involvement needed (Peter Dudding, personal communication, May 12, 2006). For decades, researchers and practitioners in children's mental health and child welfare have argued that the mental health needs of children in care must be identified and addressed,<sup>1-5</sup> yet these needs are still not uniformly assessed. Uniformity could be achieved if psychiatric evaluations or psychological assessments were mandatory, as has been proposed elsewhere.<sup>5</sup> Further, documenting the actual rates of psychiatric diagnoses among samples of foster children is an important building block toward understanding determinants of mental health in this population and may assist future efforts to estimate ongoing contacts with psychiatrists and other mental health service providers.

Numerous US studies have profiled wards in care and their mental health status and service use,<sup>3,6-9</sup> but many of these have been fraught with methodological challenges. Study findings have been criticized for a perceived lack of generalizability in that samples have been drawn from small or homogenous catchment areas<sup>10,11</sup>; for reporting on only a very limited number of mental disorders<sup>10,12-14</sup>; or, as noted by Waddell and colleagues,<sup>12</sup> for difficulties in reconciling conflicting reports of symptomatology among multiple informants. Notwithstanding these limitations, international research has yielded valuable information that can inform child welfare practices. Perhaps the key finding reported is that prevalence rates of psychopathology and developmental delay are higher among children in foster care than among children in the general population,<sup>15-17</sup> even when compared with rates for children from similar sociodemographic

backgrounds.<sup>18-20</sup> Some studies, using rating scales of psychopathology to estimate prevalence of mental disorders among foster children, have reported that over 40%<sup>6</sup> of these children have these disorders; other studies have reported a higher estimate of 80%.<sup>4</sup> These rates contrast sharply with lower estimates among samples from the general population of children, which are closer to 14% on average.<sup>12</sup>

Multiple reasons have been suggested for these elevated rates. Many foster children, including those who are permanent wards (that is, those who cannot legally return to their former parents' care), originally entered care when very young and when their neurological development was acute.<sup>21</sup> Perhaps related to this basic vulnerability, various factors are noted in the professional literature as being associated with foster children's mental health. In particular, 3 significant influences appear: the biological parents' own mental health from genetic or environmental perspectives,<sup>22</sup> the mental health sequelae of maltreatment that precedes the original involvement of many children with child protective services,<sup>13,23</sup> and the negative effects on children of being separated from their families of origin at young ages.<sup>10,24</sup> Research has also recognized the potential compounding mental health impacts of various factors to which foster children might have been exposed after entering care, such as further abuse<sup>15,25</sup> and unstable placement settings that result in multiple moves.<sup>26-28</sup> Therefore, it is not surprising that international research has reported that children with mental disorders are less likely to be reunited with parents than are other foster children<sup>28</sup> and that they have been significantly and disproportionately represented in clinical populations receiving psychiatric services.<sup>18,19,29</sup> No comparable Canadian research on a large sample could be found.

While the number of children in foster care has been increasing significantly in many Canadian provinces, the permanent ward population in Ontario doubled during the decade ending in 2005, according to the OACAS (Gail Vandermeulen, personal communication, December 12, 2006). This growth in the permanent ward population has resulted in increasing pressure on child welfare service capacity and long-term planning at a time when the rate at which these children have been leaving care via adoption has been decreasing, according to the government minister at the time (Marie Bountrogianni, personal communication, February 23, 2004). Therefore, the rate of mental disorders among permanent wards without access to their biological parents is especially important to understand because these children can only leave care via adoption or must otherwise spend the remainder of their childhood in fostering arrangements before embarking on independent living or being transferred to adult service sectors (such as mental health or developmental services).

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#### Abbreviations used in this article

ADHD	attention-deficit hyperactivity disorder
CAS	Children's Aid Society
CI	confidence interval
FASD	fetal alcohol spectrum disorder
IEP	individual education plan
LTFC	long-term foster care
OACAS	Ontario Association of Children's Aid Societies
OCWS	Ontario Crown Wards Survey
OR	odds ratio

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The OCWS<sup>30</sup> was designed to fill many significant information gaps about permanent wards who have no access to their biological parents by creating an aggregate profile of a representative province-wide sample on a broad range of variables. Information about diagnosed mental disorders and relevant data from other variables were analyzed separately for presentation here.

## Methodology

I used a cross-sectional survey design to describe a profile of permanent wards in Ontario.

### Sample

All the estimated 2000 children in Ontario who were both permanent wards without access (or whose court orders were silent on access) and aged under 18 years on December 31, 2003, were eligible for inclusion in the study. In practice, according to study advisors who recommended their inclusion, a minority of children with permanent ward orders that fail to specify access provisions are referred to as being "silent on access" and are overwhelmingly treated as if the access to parents were denied. A stratified cluster sampling approach<sup>31</sup> was used to ensure a representative provincial sample. The 52 CASs in Ontario were stratified by the 5 OACAS regions, and agencies within each region were stratified by their annual budget size. Within regions, I artificially divided large agencies and grouped small agencies with neighbouring agencies to create uniformly sized clusters (with a budget mean of approximately \$22 million). Next, I assigned a weighting to each region, based on the proportion it received of the previous year's total provincial annual budget; as a result, each region had 6, 7, or 14 clusters. Power estimates were then calculated to guide decisions regarding the number of clusters to be randomly selected per region to arrive at the appropriate sample size for generalizability of findings. Finally, I used oversampling (selection of double the number of clusters to obtain double the number of case files) to avoid threats of homogeneity among clusters.

### Survey Instrument

The data abstracted from children's case files included children's descriptive information (that is, age, sex, type of permanent ward, visible minority or majority status, primary language spoken, and admission-to-care route), all disorders (mental and other current medical diagnoses), 6 family-history items (for example, significant mental illness among family members), time (including age at admission to care), current residential placement type, other characteristics (such as existence of a formal IEP), service and historical information, and permanency plan details. Diagnosed mental disorders were recorded as written on case files if the diagnosis was made by a psychiatrist, another physician, or a

psychologist and if it was deemed current (that is, if there was no mention on the file of a cure or change in diagnosis). Files were also reviewed to determine whether children experienced maltreatment before entering care or during their time in care. The period of time in care related only to the continuous period leading up to December 31, 2003. Abuse experiences were coded as "verified" when there had been a CAS and (or) police investigation and evidence of substantiation. A coding of "suspected" indicated a lesser degree of certainty according to file material—for example, where allegations were made, and the CAS believed them, but where they were nevertheless documented as officially unsubstantiated.

### Procedure

Five current or former child welfare staff members acted as advisors for the study. In early 2004, executive directors at 22 randomly selected agencies were invited to participate. All were offered either onsite assistance for abstracting data or compensation if their staff performed the data collection. Participating agencies identified a lead worker to liaise with the investigator, to arrange for the compilation of the list of eligible children, to coordinate the site visits, to ensure the selected files were made available, and at a few agencies, to oversee the compilation of file data. Just over one-half of the data were collected directly by the author and another 35% by 2 key research assistants. Data abstraction from children's case files occurred over an 11-week period ending in April 2004. Procedures were approved by the Queen's University Health Sciences Research Ethics Board.

### Data Analysis

Descriptive analyses (such as frequency distributions and percentages) were performed for each variable. Proportions, chi-square statistics, ORs, and 95% CIs were computed to determine whether results on certain variables were significantly associated with children's mental disorder status. The DSM-IV<sup>32</sup> nomenclature was used to categorize mental disorders. A multivariate logistic regression analysis was computed to determine which variables were predictive of the 2 key permanency plans. A significance level of 0.05 was set a priori for all analyses conducted. All statistical analyses were carried out with SPSS Base 12.0 for Windows (SPSS Inc, Chicago, IL, 2003).

## Results

A total of 16 agencies participated, with representation from every selected cluster and region. Information on 429 children was reviewed and analyzed; this represented about 21% of all eligible permanent wards as of December 31, 2003. A majority of the children were male (56.9%), 86.7% were designated as permanent wards without access (rather than silent on access), 74.9% were white (compared with 14.3% visible

**Table 1 Frequency of specific mental disorders (*n* = 429)**

Mental disorder	Total sample		Among those with mental disorders %
	<i>n</i>	%	
No mental disorder	293	68.3	—
ADHD	89	20.7	65.4
Mental retardation and pervasive developmental disorders <sup>a</sup>	32	7.5	23.5
Anxiety disorders <sup>b</sup>	19	4.4	14.0
Oppositional defiant disorders	15	3.5	11.0
Attachment disorders	14	3.3	10.3
Disruptive behaviour disorders	10	2.3	7.3
Mood disorders	9	2.1	6.6
Conduct disorders	7	1.6	5.1
Adjustment disorders	2	0.4	1.5
Self-injurious behaviour	1	0.2	0.7
Tic disorders	1	0.2	0.7

Note: Children could have multiple disorders from within or across categories.  
<sup>a</sup>Only 1 of the 5 children with a pervasive developmental disorder did not also have significant intellectual deficits.  
<sup>b</sup>11 of these children had posttraumatic stress disorder.

minority or 10.8% Aboriginal), and 84.8% had entered care via apprehension (as opposed to voluntary relinquishment). Of the children aged over 18 months, 95.2% spoke English, 3% were unable to speak, and 1.8% spoke other languages; 44% of the school-aged children had an IEP.

Among the 429 permanent wards, the prevalence rate of mental disorders was 31.7% (136 children). The number of separate mental disorder labels given to children ranged from 1 to 5, with most children (65.7%) having 1 diagnostic label, 26.3% having 2, and the remainder having 3 or more. Table 1 shows the frequencies and percentages of various mental disorders.

Of the 89 (about 1 in 5) children with ADHD, 76 (85%) had at least 1 other mental disorder. Further analysis was conducted to determine whether the children's sex or the region of the province in which the CAS operated related to rates of mental disorders. Chi-square analysis revealed that the rate for boys (40.6%), compared with girls (20.0%), showed that boys were twice as likely to have a mental disorder (95%CI, 1.46 to 2.81;  $P < 0.01$ , *df* 1). As well, children supervised by participating agencies from one Ontario region were twice as likely as children from the other 4 regions to have a mental disorder (95%CI, 1.10 to 3.76;  $P < 0.05$ , *df* 4).

Psychotropic medications had been prescribed for almost 28% of the children ( $n = 118$ ); 83% of these children ( $n = 98$ ) had mental disorders, and chi-square analysis revealed that

children with mental disorders were significantly more likely to have been prescribed psychotropic medications ( $P < 0.001$ , *df* 1) than were children without these disorders.

Of children with mental disorders, 49% ( $n = 67$ ) also had comorbid conditions from another category of disability, the most common of which were learning disabilities ( $n = 24$ ), physical disabilities ( $n = 20$ ), and FASD ( $n = 10$ ). Four children without mental disorders also had FASD.

Chi-square analyses were computed to compare whether children with and without mental disorders would be more or less likely to have the 6 following family characteristics or histories: a biological parent or sibling with a significant mental illness, exposure while in utero to substance use by their mother, a parent with a substance use problem, a parent with a developmental disability, a parent with HIV or AIDS, and a parent with a serious criminal history. For the first family characteristic above (significant mental illness), Axis I disorders were always coded as significant, whereas other disorders were considered significant if they affected the child's wardship deliberations. General file references to "mental" or "behavioural" problems or "stress" were not coded if unsupported by further evidence. Findings indicated that the proportions were similar for children with and without mental disorders for all but the first family-history item. Although 25.6% of the 429 children had a biological parent or sibling with a significant

**Table 2 Mental disorder status and maltreatment of children (n = 429)**

Time period and abuse type	No abuse (%)		Suspected abuse (%)		Verified abuse (%)		P
	Yes MD	No MD	Yes MD	No MD	Yes MD	No MD	
<b>Before care (n = 360)<sup>a</sup></b>							
Sexually abused (n = 359)	75.8	86.8	14.4	7.9	9.8	5.3	0.029
Physically abused	58.3	77.6	11.4	6.1	30.3	16.2	0.001
Neglected	22.0	22.4	2.3	5.7	75.8	71.9	0.304
Abandoned	81.8	83.8	0.0	1.3	18.2	14.9	0.312
Witnessed abuse <sup>b</sup>	60.6	63.2	9.8	10.5	29.5	26.3	0.802
<b>During care (n = 429)</b>							
Sexually abused	93.4	98.6	2.9	1.0	3.7	0.3	0.008
Physically abused	90.4	96.6	0.7	2.0	8.8	1.4	< 0.001
Neglected	97.1	99.7	0.0	0.0	2.9	0.3	0.037
Witnessed abuse	97.8	99.0	0.0	0.3	2.2	0.7	0.312

Note: Categories of abuse experiences were not mutually exclusive. Fisher's exact tests were used for analyses when data cell counts were too small for Pearson chi square. MD = mental disorder

<sup>a</sup>Many children (n = 69) entered care directly from hospital, almost immediately following birth, and therefore were excluded from the analyses of before-care abuse experiences.

<sup>b</sup>"Witnessed abuse" indicates that the child had witnessed emotional, sexual, or physical abuse, including wife assault, of a family member.

mental illness, the children with mental disorders were less likely to have such a family member ( $P = 0.037$ ).

### Maltreatment

Chi-square analysis showed that, in total, 338 children (78.8%) were suspected of experiencing, or had verified experience of, at least one type of maltreatment: 336 children (78.3%) before entering care and 38 children (8.9%) during their time in care. Of these 38 children, 36 had also experienced abuse (or been suspected of experiencing abuse) prior to being placed in resource settings; the remaining 2 experienced abuse only after entering care.

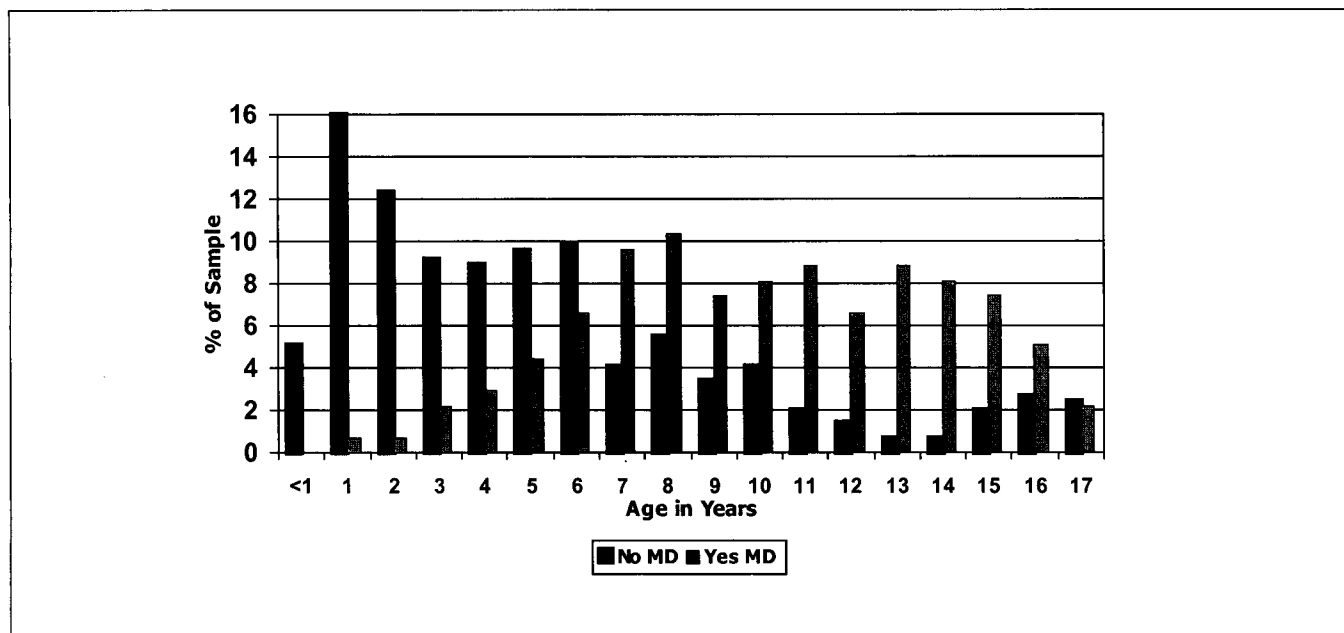
Overall, a significantly higher proportion ( $P < 0.001$ ) of children with a mental disorder (91.2%) than children without mental disorders (72.4%) experienced maltreatment before entering care. A significantly higher proportion ( $P < 0.001$ ) of children with a mental disorder also experienced maltreatment during their time in care (16.2%), compared with children without these disorders (5.5%). Table 2 highlights significant differences between the proportions of children with mental disorders and those without such disorders in terms of maltreatment before care (suspected sexual abuse and suspected and verified physical abuse) and abuse during care (verified sexual abuse, verified physical abuse, and verified neglect).

### Age Variables

**Age at Admission to Care.** Since many children entered care and left care more than once before becoming permanent wards, age at admission to care was based on their age in days on the date they entered care and permanently remained in care. The mean age at which all children were admitted to care was 3 years and 5 months (all mean ages reported are rounded to the nearest month). Children with mental disorders were, on average, significantly older when admitted to care than those without these disorders (mean 4 years, 7 months, compared with mean 2 years, 10 months;  $t_{421} = -4.87, P < 0.001$ ). Further analyses indicated that significant differences existed in the proportions of children with and without mental disorders admitted to care at each age in years for the 2 youngest categories (< 1 year and 1 year): children without mental disorders were much more frequently admitted ( $P < 0.001$ ).

**Age at Study.** Children's study age was their actual age in days on December 31, 2003—the date used to select the sample. Ages ranged from about 3 months to just under 18 years, with an average age of 7 years and 4 months. On average, children with mental disorders were significantly older than those without these disorders (mean 10 years, 7 months, compared with mean 5 years, 9 months;  $t_{427} = -11.28, P < 0.001$ ). Figure 1 shows the proportion of children with and without mental disorders at each age in years by their percentage in each subsample.

**Age at Permanent Wardship.** Children's age when they became permanent wards was their actual age in days when

**Figure 1** Age on December 31, 2003, by mental disorder status and percentage of each sample ( $n = 429$ )

the judge made the court order. The average age at permanent wardship was 4 years and 8 months. Children with mental disorders were, on average, significantly older than those without these disorders (mean 6 years, 1 month, compared with mean 4 years;  $t_{427} = -5.94$ ,  $P < 0.001$ ).

#### **Residential Placement and Permanency Plans**

Just over 55% of all the children resided in CAS direct care placements, such as regular or treatment foster homes; 33% were living in adoption probationary homes; and 11% resided in private foster homes or privately operated resources, such as group homes. Three children lived independently or in a youth custody facility. Chi-square analysis revealed that children with mental disorders were almost 3 times more likely to be residing in privately operated resource settings (OR 2.89; 95%CI, 1.50 to 5.58;  $P < 0.01$ ) and about 10 times less likely to be in probationary adoption settings (OR 9.88; 95%CI, 4.79 to 20.37;  $P < 0.001$ ), as opposed to CAS direct foster care, than were children without these disorders.

Official permanency plans were known for 423 children, and the most common were adoption ( $n = 272$ , 64%) and LTFC ( $n = 124$ , 29%). The plans for the remaining 27 children (6%) were to live independently ( $n = 13$ ), live with relatives ( $n = 10$ ), or directly transfer to developmental services and adult mental health residential services.

Chi-square analyses were computed to determine whether the 2 key permanency plans (adoption and LTFC) varied by children's mental disorder status and other variables of interest,

including demographics (such as sex and visible majority or minority status), physical disability (when no mental disorder existed), permanent ward type (that is, without access or silent on access), admission route (either voluntary or apprehension), age (age at admission to care, age at permanent wardship, and age on December 31, 2003), the 6 family history items, and all categories of experiences of maltreatment (both before and during time in care). Table 3 shows only the significant results.

The following variables were significantly associated with greater odds of children having an adoption plan: having no mental disorders; being female; having a permanent ward order with no access to biological parents; having been admitted into care via an apprehension; having no history of being abused sexually or physically before care; and being younger at admission, at the date of permanent wardship, and on December 31, 2003. To determine the predictive strength of the variables associated with the key permanency plans, a multivariate logistic regression analysis was computed with variables first entered in a conditional forward stepwise fashion and then a backwards one ( $n = 395$ ). The 3 age variables were entered as continuous variables. Only 2 variables were significant predictors of children's permanency plans: children's age on becoming a permanent ward ( $P < 0.001$ ) and their age on December 31, 2003 ( $P < 0.001$ ). Younger age at permanent ward status and younger age on December 31, 2003, were associated with higher likelihood of a child having

**Table 3 Variables associated with key permanency plans (n = 396)**

Variable	Adoption <i>n</i>	LTFC <i>n</i>	Total <i>n</i>	OR	95%CI
<b>Mental disorder</b>					
No	225	50	275	1.00	—
Yes	47	74	121	7.09	1.67 to 2.65 <sup>a</sup>
<b>Sex</b>					
Male	146	80	226	1.00	—
Female	126	44	170	1.57	1.01 to 2.43 <sup>b</sup>
<b>Ward access type</b>					
Silent	21	23	44	1.00	—
Without access	251	101	352	2.72	1.44 to 5.14 <sup>a</sup>
<b>Admission route</b>					
Voluntary	33	27	60	1.00	—
Apprehension	239	97	336	2.02	1.15 to 3.53 <sup>b</sup>
<b>Before care sexual abuse (n = 395)</b>					
None	249	93	342	1.00	—
Verified and (or) suspected	22	31	53	2.38	1.23 to 4.54 <sup>a</sup>
<b>Before care physical abuse</b>					
None	227	76	303	1.00	—
Verified and (or) suspected	45	48	93	2.14	1.26 to 3.57 <sup>a</sup>
<b>Age at admission</b>					
> 8 years	12	24	36	1.00	—
4–7 years	58	38	96	3.05	1.36 to 6.82 <sup>a</sup>
1–3 years	89	37	126	4.81	2.17 to 10.62 <sup>a</sup>
< 1 year	113	25	138	9.04	3.99 to 20.40 <sup>a</sup>
<b>Age at permanent wardship</b>					
> 8 years	21	28	49	1.00	—
4–7 years	89	60	149	1.97	1.03 to 3.80 <sup>a</sup>
1–3 years	108	31	139	4.64	2.32 to 9.28 <sup>a</sup>
< 1 year	54	5	59	14.40	4.90 to 42.23 <sup>a</sup>
<b>Age at study</b>					
> 8 years	54	92	146	1.00	—
4–7 years	95	26	121	6.22	3.59 to 10.78 <sup>a</sup>
1–3 years	109	5	114	37.10	14.25 to 96.74 <sup>a</sup>
< 1 year	14	1	15	23.80	3.05 to 186.46 <sup>a</sup>

<sup>a</sup>*P* < 0.01, <sup>b</sup>*P* < 0.05

an adoption plan. These 2 variables alone were responsible for predicting 41% of the variance in the key permanency plans.

## Discussion

The OCWS is the first independent study found in the literature in over a decade to clearly focus attention on mental disorders among Ontario's permanent wards, to shed light on their comorbid conditions and permanency plans, and to use an advanced sampling methodology to attempt to ensure proportional provincial representation. The use of diagnosed mental disorders allowed for the inclusion of all selected eligible permanent wards and for reporting on all mental disorders, unlike most studies that use standardized rating scales of psychopathology and behaviour, which are usually not "normed" on children who have significant developmental delay or intellectual disability—a sizeable subgroup among children who are wards. The high agency participation rate, the oversampling built into the methodology, and the conservative participation rule (which required each cluster to have at least one agency participate) should minimize any concerns about regional variability in participation.

### *Mental Disorders*

Given that the literature repeatedly reports that foster children have higher rates of mental health concerns than community samples, it was not unexpected that the OCWS rate of 31.7% among permanent wards was 1½ times higher than the 18.1% previously found among the general population of children in Ontario<sup>34</sup> or the average of 14.3% found across 6 international studies.<sup>12</sup> The OCWS rate appears particularly high comparatively because, in another study, Offord and colleagues<sup>33</sup> relied only on participants' scores on the Achenbach scales to determine whether a child qualified for a diagnosis, which likely produced a lower threshold than did the OCWS methodology. It is also not surprising that the OCWS rate of mental disorders is much lower than the range of between 41% and 63% reported by Stein and associates<sup>34</sup> in a sample of foster children from one Ontario CAS. These researchers not only used a measurement tool of psychopathology that likely produced a lower threshold, they also included children who were temporary wards. Temporary wards are more likely to exhibit challenging behaviours caused in part by their having entered care more recently, by their having yet to be treated for pre-existing emotional disturbances related to maltreatment or separation from biological family, and by their experiencing emotional impacts from uncertainty related to wardship legal deliberations and their futures.<sup>3</sup>

The rate for certain diagnostic categories, such as ADHD and mental retardation or pervasive developmental disorder, seemed especially high. The most prevalent diagnostic category was ADHD, with a 20.7% prevalence rate, which was much higher than the 4%<sup>32</sup> or 6.1%<sup>34</sup> rate estimated to apply to

children in the general population. This finding may merely reflect the difference between a child welfare sample and a community sample. The high rate of ADHD and comorbid mental disorders (85%) in the OCWS study mirrors findings from other studies.<sup>35</sup> The rate of children with mental retardation (7.5%, hereafter referred to as "intellectual disability") or pervasive developmental disorder was much higher than the 1% to 3% range usually reported among the general population of children. Researchers have concluded that the high proportion of children with intellectual disability in foster care is partly a result of a general increased vulnerability to abuse and neglect among children with preexisting disabilities and partly a developmental consequence of maltreatment of children who initially had no disabling conditions.<sup>15,25,36,37</sup> It is especially important for clinicians and policy-makers to know the childhood rates of intellectual disability because, at any given time, about 37% of adults with an intellectual disability can be expected to have another mental disorder<sup>38</sup> and since this group is represented at high rates in acute care psychiatric settings and in the province's psychiatric hospitals.<sup>39-41</sup> There is an ongoing need to plan for adequate mental health and social supports for this population as individuals leave the child welfare sector.

It remains unclear why the rate of conduct disorders was lower than expected. Not surprisingly, no children were diagnosed with a psychosis, which is likely owing to the usual age of onset for such illnesses (late adolescence at the earliest) coupled with the sample's very small proportion of older children.

### *Permanency Plans*

Although the OCWS found that many variables were associated with higher instances of mental disorders and with permanency plans, controlling for these factors, using logistic regression, revealed that age variables were the only significant predictors of permanency plans. Similarly, US research has consistently found that age is a strong predictor for children remaining in long-term care, with those who are older remaining longer.<sup>27,42</sup> According to CAS adoption staff, there is a preference among Ontario's adoption applicants for babies or very young children, compared with older children and those with mental disorders or developmental delays (author's unpublished raw data); therefore, it is not unexpected that a high proportion of older permanent wards have mental disorders and permanency plans of LTFC.

### *Further Research*

A recent focus in US research on mental health and child welfare has been on patterns of mental health service use for foster children.<sup>43</sup> There should be a similar focus on Canadian populations to determine predictors of psychiatric and other mental health service use among children who are permanent



wards as a first step toward identifying and addressing any inequities that may be exposed for various subpopulations.

In the 1990s, considerable policy attention and significant legislative changes in Ontario were aimed at streamlining legal time frames to enhance the protection of children from abuse, to give assistance to families at risk of having a child made a permanent ward, and to arrive at earlier final wardship decisions. Many factors impeded the realization of those goals and resulted in the doubling of the permanent ward population in a single decade. If we are to improve the mental health of children, then renewed and enhanced efforts are needed in numerous areas.

To bolster a sense of permanency and stability for vulnerable children, efforts are needed to effectively identify families at risk early, to enhance the range of social services and mental health resources available to these families in a timely fashion, and to further tighten legal timelines for wardship decisions. Further research is also needed to help us better understand the relation between foster children's mental health and permanency planning. Open adoption, where biological parents retain some forms of contact with their offspring who are adopted by others (as opposed to a legal right to access), has been promoted as one solution to conflictual and drawn-out wardship deliberations that often thwart CAS desires to place children for adoption while they are still young and viewed as adoptable.<sup>44</sup> This option has only recently become legally available in Ontario, and research attention to the mental health effects for children involved in these arrangements is strongly encouraged.

In conclusion, the study's prevalence information on mental disorders alone should be important to CAS administrators, who may not recognize how the aggregate rate of their permanent wards without access who also have a mental disorder compares with the province-wide rate. This information may also be relevant to administrators and clinicians at the transfer payment agencies in various other sectors, including children's mental health, adult mental health, and developmental services. If the 31.7% of permanent wards without access do not have their mental health needs addressed adequately, then many potentially negative long-term impacts may be experienced by these individuals well into adulthood and also by the society in which they live.<sup>45,46</sup> Recently, it has been argued that a comprehensive public health strategy is grossly overdue to improve the mental health of all Canadian children.<sup>47</sup> Clearly, government planners and public policy analysts, who may benefit from forecasting the needs of the permanent ward population or the demands on the mental health system, should take note of the need for better tracking of the mental health status of children who are permanent wards.

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### References

1. Coyne A. Disabled children and adoption. In: Avery R, editor. *Adoption policy and special needs children*. Westport (CT): Auburn House; 1997. p 61–76.
2. Franklin D, Massarik F. The adoption of children with medical conditions: part I—process and outcome. *Child Welfare*. 1969;48(8):459–467.
3. Shin S. Need for and actual use of mental health service by adolescents in the child welfare system. *Child Youth Serv Rev*. 2005;27(10):1071–1083.
4. American Academy of Child and Adolescent Psychiatry. *Psychiatric care of children in the foster care system*. [Internet]. American Academy of Child and Adolescent Psychiatry; 2001 [cited 2006 Mar 13]. Available from: <http://www.aacap.org/publications/policy/pS45.htm>.
5. American Academy of Child and Adolescent Psychiatry. *AACAP/CWLA policy statement on mental health and use of alcohol and other drugs, screening and assessment of children in foster care*. [Internet]. American Academy of Child and Adolescent Psychiatry; 2002 [cited 2006 Apr 20]. Available from: <http://www.aacap.org/publications/policy/collab02.htm>.
6. Leslie L, Landsverk J, Ezzet-Lofstrom R, et al. Children in foster care: factors influencing outpatient mental health service use. *Child Abuse Negl*. 2000;24(4):465–476.
7. Halfon N, Berkowitz G, Klee L. Medical health service utilization by children in foster care in California. *Pediatrics*. 1992;89(6):1238–1244.
8. Klee L, Halfon N. Mental health care for foster children in California. *Child Abuse Negl*. 1987;50(2):256–263.
9. Takayama J, Wolfe E, Coulter K. Relationship between reason for placement and medical findings among children in foster care. *Pediatrics*. 1998;101(2):201–207.
10. Clausen J, Landsverk J, Ganger W, et al. Mental health problems of children in foster care. *J Child Fam Stud*. 1998;7(3):283–296.
11. Horan S, Kang G, Levine M, et al. Empirical studies on foster care: review and assessment. *J Sociol Soc Welf*. 1993;20(1):131–154.
12. Waddell C, Offord D, Shepherd C, et al. Child psychiatric epidemiology and Canadian public policy-making: the state of the science and the art of the possible. *Can J Psychiatry*. 2002;47(9):825–832.
13. Zoutis P. *Ontario mental health statistical sourcebook. Volume 1: an investigation into the Mental Health Supplement of the 1990 Ontario Health Survey*. Toronto (ON): Canadian Mental Health Association, Ontario Division; 1999.
14. Spady D, Schopflocher D, Svenson L, et al. Medical and psychiatric comorbidity and health care use among children 6 to 17 years old. *Arch Pediatr Adolesc Med*. 2005;159(2):231–237.
15. Sullivan P, Knutson J. The association between child maltreatment and disabilities in a hospital-based epidemiological study. *Child Abuse Negl*. 1998;22(4):271–288.
16. Cowan A. New strategies to promote the adoption of older children out of foster care. *Child Youth Serv Rev*. 2004;26(11):1007–1020.
17. National Adoption Information Clearinghouse. *Adopting a child with special needs*. Fact sheet. Rockville (MD): National Adoption Information Clearinghouse; 1997. Cited in: Hanley B. Intersection of the fields of child welfare and developmental disabilities. *Ment Retard*. 2002;40(5):413–415.
18. dosReis S, Magno Zito J, Safer D, et al. Mental health services for youths in foster care and disabled youth. *Am J Public Health*. 2001;91(7):1094–1099.
19. Garland A, Landsverk J, Hough R, et al. Type of maltreatment as a predictor of mental health service use in foster care. *Child Abuse Negl*. 1996;20(8):675–688.
20. Pilowsky D. Psychopathology among children placed in foster care. *Psychiatr Serv*. 1995; 46(9):906–910.
21. Leslie L, Gordon J, Lambros K, et al. Addressing the developmental and mental health needs of young children in foster care. *Dev Behav Pediatr*. 2005;26(2):140–151.
22. Kadushin A. *Child welfare services*. New York (NY): Macmillan Company; 1967.

23. Milan SE, Pinderhughes EE. Factors influencing maltreated children's early adjustment in foster care. *Dev Psychopathol.* 2000;12(1):63-81.
24. Lipman E, Offord D, Boyle M, et al. Follow-up of psychiatric and educational morbidity among adopted children. *J Am Acad Child Adolesc Psychiatry.* 1993;32(5):1007-1012.
25. Jaudes P, Shapiro L. Child abuse and developmental disabilities. In: Silver J, Amster B, Haecker T, editors. *Young children and foster care: a guide for professionals.* Baltimore (MD): Paul H Brookes Publishing Co; 1999. p 213-234.
26. Barber J, Delfabbro P. Children's adjustment to long-term foster care. *Child Youth Serv Rev.* 2005;27(3):329-340.
27. Barth R. Effects of age and race on the odds of adoption versus remaining in long-term out-of-home care. *Child Welfare.* 1997;76(2):285-309.
28. Rosenberg S, Robinson C. Out-of-home placement for young children with developmental and medical conditions. *Child Youth Serv Rev.* 2004;26(8):711-723.
29. Takayama J, Bergman A, Connell F. Children in foster care in the state of Washington: health care utilization and expenditures. *JAMA.* 1994;271(23):1850-1855.
30. Burge P. The Ontario Crown Wards Survey: children's disability status, profiles and permanency plans. 2005. Technical report. 66 p. Located at: Queen's University, Department of Psychiatry, Kingston, ON.
31. Satin A, Shastry W. Survey sampling: a non-mathematical guide. 2nd ed. Ottawa (ON): Statistics Canada; 1993.
32. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Text revision. Washington (DC): American Psychiatric Association; 2000.
33. Offord D, Boyle M, Szatmari P, et al. Ontario child health study. II: six month prevalence of disorder and rates of service utilization. *Arch Gen Psychiatry.* 1987;44(9):832-836.
34. Stein E, Rae-Grant N, Ackland S, et al. Psychiatric disorders of children "in care": methodology and demographic correlates. *Can J Psychiatry.* 1994;39(6):341-347.
35. MTA Cooperative Group. A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. *Arch Gen Psychiatry.* 1999;56(12):1073-1086.
36. Brown I, Fudge Schormans A. Maltreatment and life stressors in single mothers who have children with developmental delay. *Journal on Developmental Disabilities.* 2003;10(1):61-66.
37. Fudge Schormans A, Brown I. An investigation into the characteristics of the maltreatment of children with developmental delays and the alleged perpetrators of this maltreatment. *Journal on Developmental Disabilities.* 2002;9(1):1-19.
38. Yu D, Atkinson L. Developmental disability with and without psychiatric involvement: prevalence estimates for Ontario. *Journal on Developmental Disabilities.* 1993;2(1):92-99.
39. Burge P, Ouellette-Kuntz H, Saeed H, et al. Acute psychiatric inpatient care for people with a dual diagnosis: patient profiles and lengths of stay. *Can J Psychiatry.* 2002;47(3):243-249.
40. Lunsy Y, Bradley E, Durbin J, et al. Dual diagnosis in provincial psychiatric hospitals: a population-based study. Toronto (ON): Centre for Addiction and Mental Health; 2003.
41. Saeed H, Ouellette-Kuntz H, Stuart H, et al. Length of stay for psychiatric inpatient services: a comparison of admissions of people with and without developmental disabilities. *J Behav Health Serv Res.* 2003;30(4):406-417.
42. Finch S, Fanshel D, Grundy J. Factors associated with the discharge of children from foster care. *Soc Work Res Abstr.* 1986;22(1):10-18.
43. Hurlburt M, Leslie L, Landsverk J, et al. Contextual predictors of mental health services use among children open to child welfare. *Arch Gen Psychiatry.* 2004;61(12):1217-1224.
44. Aitken G. Changing adoption policy and practice to deal with children in limbo. *Child Welfare.* 1995;74(3):679-693.
45. Bueller C, Orme J, Post J, et al. Long-term correlates of family foster care. *Child Youth Serv Rev.* 2000;22(8):595-625.
46. Quinton D, Rutter M, Liddle C. Institutional rearing, parenting difficulties, and marital support. *Psychol Med.* 1984;14(1):107-124.
47. Waddell C, McEwan K, Shepherd C, et al. A public health strategy to improve the mental health of Canadian children. *Can J Psychiatry.* 2005;50(4):226-233.

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## Résumé : La prévalence des troubles mentaux et des variables de service associées chez les enfants ontariens qui sont en tutelle permanente

**Objectif :** Déterminer le taux de prévalence des troubles mentaux chez les enfants en tutelle permanente en Ontario ainsi que les principales variables de pratique et descriptives associées à leur statut diagnostique.

**Méthode :** J'ai examiné les dossiers d'un échantillon aléatoire stratifié de 429 enfants qui étaient en tutelle permanente sans accès aux parents biologiques le 31 décembre 2003, en Ontario. Les données tirées des dossiers comprenaient de l'information sur les variables descriptives (comme l'âge, le sexe et le type de tutelle permanente), tous les troubles (mentaux et autres diagnostics médicaux et incapacités actuels), les antécédents familiaux, les expériences de mauvais traitements, les antécédents de service (comme l'âge à l'admission aux soins et le type de placement résidentiel actuel), et les plans de permanence.

**Résultats :** La prévalence des troubles mentaux était de 31,7 %. Une proportion significativement plus élevée d'enfants souffrant de troubles mentaux avaient subi des mauvais traitements. Les enfants souffrant de troubles mentaux étaient presque 3 fois plus susceptibles que ceux sans troubles mentaux d'être placés par les sociétés d'aide à l'enfance dans des ressources exploitées par le secteur privé, comme des foyers de groupe, et presque 10 fois moins susceptibles de vivre dans un foyer d'adoption à l'essai. Même si les enfants souffrant de troubles mentaux étaient moins susceptibles d'avoir un plan d'adoption permanente, l'analyse de régression a indiqué que seulement 2 variables, l'âge d'entrée en tutelle permanente et l'âge à l'époque de l'étude, étaient prédictives de plans de permanence.

**Conclusions :** Les résultats appuient le besoin d'une meilleure surveillance de l'ensemble des besoins en santé mentale des enfants en tutelle permanente. Les nombreuses implications pour la prestation de services et la future recherche sont présentées.

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