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Similarities and differences between children with and without disabilities on identified clinical findings

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This study was conducted to examine the types and proportions of identified clinical findings among children with and without disabilities. Using data from the Canadian Incidence Study of Reported Child Abuse and Neglect (CIS), this study compared 7672 children aged 0 to 15 years (n=1067 with disabilities and n=6605 without disabilities) who were reported for child abuse and neglect and investigated by child welfare agencies in Canada. In all age levels, children with disabilities were found to exhibit the same types of clinical findings as children without disabilities. The most common clinical finding for both children with and without disabilities was behaviour problem. Children with disabilities were significantly more likely to be identified for various clinical findings than children without disabilities except for running away and substance abuse. Overall, children with disabilities were more likely to have been identified for at least one clinical finding than children without disabilities. The proportions of children with and without disabilities identified for various clinical findings generally increased with age. Assessment, prevention, and treatment efforts for children and adolescents with disabilities need to incorporate a variety of strategies that address their specific difficulties.

Introduction

Many reviews document the detrimental effects of maltreatment on nondisabled children's and adolescents' mental, emotional, social, and physical development and health (e.g., Browne & Finkelhor, 1986; Cahill, Kaminer, & Johnson, 1999; Green, 1993; Hildyard & Wolfe, 2002; Kaplan, Pelcovitz, & LaBruna, 1999; Kendall-Tackett, Williams, & Finkelhor, 1993; Trickett & McBride-Chang, 1995). Effects summarized include anxiety, fear, phobias, post-traumatic stress disorder, depression,

suicidal tendencies, anger, hostility, conduct disorders, psychiatric symptoms and disorders, increased aggression, physical symptoms, somatic complaints, inappropriate sexual behaviour, substance abuse, academic and disciplinary problems, truancy, and running away from home. Other researchers have examined maltreatment effects among people with disabilities (e.g., Westcott, 1993); however, methodological shortcomings including clinical, unrepresentative, and small samples, inappropriate control groups for comparison, and lack of consistent or standard measures of effects limit the generalizability of these findings to children with disabilities. Thus, the general purpose of this study is to address the role of disability status in the presence of various behavioural, cognitive, mental, and emotional effects of maltreatment in a large, representative sample.

Compared to literature on the effects of maltreatment among people without disabilities, the effects of maltreatment among adults, children, and adolescents with disabilities have been examined to a much lesser extent. Most published research in the area has examined effects of sexual abuse on adults or children with developmental disabilities. Cole's review (1986) summarized similar sexual abuse effects for persons with and without disabilities, including shame, guilt, loss of self-esteem, fear of abandonment, learning problems, and delinquent behaviour. Cruz, Price-Williams, and Andron (1988) found, in their qualitative study, that feelings expressed by adult counselling clients with developmental disabilities, such as isolation, anger, alienation, depression, low self-esteem, and fear of abandonment, and behaviours such as sexually age inappropriate, self-abusive or suicidal behaviour, were similar to effects noted in sexual abuse effects literature. A survey of sexual abuse victims with mild/moderate and severe/profound developmental disabilities found reports of withdrawal (9.8% and 17.7% respectively), aggressive behaviour and/or other behaviour problems, such as inappropriate sexual behaviour (19.6% and 31.1%), and unspecified emotional distress (56.8% and 35.5%). Only a small percentage (slightly less than 4% of those with mild or moderate disabilities and none of those with severe or profound disabilities) reported no emotional or social problems. Differences between mild to moderate and severe to profound disabilities were not significant

(Mansell, Sobsey, & Calder, 1992).

Recently, Balogh and others (2001) found verbal and physical aggression, self-harm, sexualized behaviors, and anxiety in a child and adolescent psychiatric group of intellectually disabled who were sexually abused. Finally, in their clinic sample of sexually abused children and adolescents, Mansell, Sobsey, and Moskal (1998) found no differences in the presentation of clinical findings between children with and without disabilities, except on poor sense of personal safety, little or no age appropriate sexual knowledge, and personal hygiene among children with disabilities. Generally, these researchers have found no evidence to support the hypothesis that individuals with developmental disabilities experience different sexual abuse sequelae than those without disabilities.

In other research, some responses of people with developmental disabilities appear to be qualitatively different or intensified from those without disabilities. For instance, Varley (1984) and Martorana (1985) discussed case studies of adolescents with developmental disabilities who developed schizophrenic psychotic symptoms after experiencing sexual assault. Varley suggested the possibility that sexual assault can contribute to psychotic symptoms and those with developmental disabilities exhibit greater vulnerability to psychiatric disturbances, which may produce a qualitatively different response. Furthermore, the effects may be more devastating for persons with developmental disabilities because of coping with difficulties and additional vulnerability to abuse such as dependency and limited communication and social skills (Tharinger, Horton, & Millea, 1990).

Greater behavioural difficulties have been noted by some researchers examining sexual abuse effects among individuals with developmental disabilities. Dunne and Power (1990) found clinicians reported behaviour problems such as "acting out" behaviour, verbal abuse, and inappropriate sexual behaviour in working with persons with mental disabilities, as possible indicators of sexual abuse. They also identified increased anxiety, distress and fearfulness, greater vulnerability to revictimization, increased restrictiveness on personal freedom, and long-

term depression in their sample. Burke and Bedard (1995) found that 54% of adults with developmental disabilities referred for treatment of self-injury behaviour were victims of sexual abuse. Given the lack of communication skills of disabled persons, these behaviour problems have been explained as ways to communicate abuse experiences (Dunne & Power, 1990).

Trauma may exacerbate physical and cognitive disabilities. For instance, sexual assault can magnify speech problems which impede a victim's ability to communicate. A person with spinal cord injury may be physically powerless and such helplessness is magnified by the assault. In addition, those with developmental or learning disabilities may be more confused, have more problems with concentration and organizing their thoughts, and have greater difficulty understanding their sexual abuse than those without such disabilities (Bowers Andrews, & Veronen, 1993; Stuart & Stuart, 1981).

Similar results to previously reviewed studies were found by other researchers who have examined multiple or different forms of maltreatment or other disabilities. Cook, Kieffer, Charak, and Leventhal (1993) described a case study of an adolescent autistic boy who was diagnosed with post traumatic stress disorder after being physically abused by a staff member at a residential school. Howlin and Clements (1995) found that, when maltreatment was occurring at a residential school, autistic children showed increased aggressive, self-injurious behaviours, mood swings, temper tantrums, fears or resistance to being separated from parents and going to school, increased activity levels, sleeping disturbances, and eating problems. These behaviours decreased after they were removed from the school. No changes in autism-specific symptoms such as obsessive or stereotypical behaviours were noted. It was concluded that the consistency in the types of behavioural difficulties and the timing of the rise in behavioural disturbance suggests children's marked emotional distress following their experiences at school (Howlin & Clements, 1995). Maltreated children with intellectual disabilities showed stereotyped behaviour or eating problems (67%), difficult temperament (64%), and self-injury (63%), compared to non-maltreated children with disabilities who showed eating problems (19%),

difficult behaviour (13%), and self-injury (4%) (Verdugo, Bermejo, & Fuertes, 1995). Walters, Barrett, Knapp, and Borden (1995) found, in a psychiatric sample of suicidal youth with mental retardation, 10.5% had been physically abused, 10.5% were sexually abused, and 26% were both physically and sexually abused. Westcott's (1993) qualitative study found that effects of all types of abuse described by adults with and without physical and cognitive disabilities were congruent with effects of sexual abuse discussed in the literature. Thus, effects of different types of maltreatment among those with different types of disabilities appear similar to effects experienced by those without disabilities.

Using representative samples, Sullivan and Knutson (2000a) found that maltreated children with disabilities had the lowest school attendance and academic achievement scores. In another study, maltreated disabled runaways scored significantly lower on academic achievement tests and had significantly lower school attendance compared to maltreated nondisabled runaways (Sullivan & Knutson, 2000b). Furthermore, Sullivan and Knutson (2000b) also found that the risk of running away, for children with disabilities, was approximately five times that of children without disabilities in a general school population. Similarly, children with disabilities were six times more likely to run away from home than children without disabilities in a hospital sample. In addition, the prevalence rate of a diagnosed disability among maltreated runaways was about 83% compared to 47% among non-maltreated runaways. Although these studies used larger and representative samples, a small number of maltreatment effects were studied.

In a recent Canadian study using a nationally representative sample of children reported for child maltreatment, Brown (2003) found that developmentally delayed children were more likely to be identified with behaviour problems, irregular school attendance, negative peer involvement, violence toward others, and age inappropriate sexual behaviour, than non-delayed children. Also, compared to non-delayed children, developmentally delayed children were more likely to be identified with health conditions, depression or anxiety, substance abuse-related birth defects, psychiatric disorders, and self-harming behaviour. Non-delayed children were more frequently identified with

substance abuse than delayed children. Although this study included more types of effects than previous research, it did not examine these effects among children with a variety of disabilities and it did not differentiate the effects across ages in children with and without disabilities.

Study Rationale and Hypotheses

To date, research suggests support for the hypothesis that maltreatment effects for children and adults with and without disabilities are similar. Other researchers have implied that a variety of interactions between disability and abuse produce greater difficulties or qualitatively different responses. However, most of this research was based on American clinical samples or case studies. Furthermore, the limited number of types of disabilities, maltreatment effects, and little differentiation between ages on these effects are also limitations of previous research. Therefore, more systematic data collection and analyses should improve the generalizability of findings.

The present study improves on previous procedural limitations in several ways: (a) it uses a Canadian, nonclinical, representative sample of children and adolescents reported for child maltreatment; (b) it includes a variety of disabilities as one group; (c) it examines several effects that are consistent with those studied in the literature; and, (d) it uses specific age levels to differentiate any possible age effects of maltreatment among individuals with and without disabilities. Hence, such methodological improvements may further challenge the myth that persons with disabilities are not susceptible to effects of maltreatment and provide information about the risk of exhibiting clinical findings. The results would be useful for assessment, prevention and treatment of children with and without disabilities who are reported for maltreatment.

The following hypotheses are addressed in this study (a) There will be no differences in the types of clinical findings identified for children without and with disabilities, (b) In comparing children with and without disabilities, there will be no differences in the proportions of

children identified with various clinical findings and, (c) In comparing children with and without disabilities, there will be no differences in the proportions of children identified with various clinical findings across age levels.

Method

Data Collection

Data from the *Canadian Incidence Study of Reported Child Abuse and Neglect* (CIS) were used for this study. A four-stage stratified sampling design was used to select this nationally representative sample of children investigated for suspected maltreatment. (See Age Effects of Reported Child Maltreatment in a Canadian Sample of Children and Adolescents, in this issue, for a description of sampling design and data collection procedures.) A full description of the data collection procedures is available in Trocme et al. (2001).

Substantiated, suspected, and unsubstantiated child welfare investigations were included in the CIS. It did not include reports that were screened out before a full investigation, cases that were investigated only by police, new incidents of maltreatment on open cases at time of data collection, and incidents that were not reported to child welfare services (Trocme et al., 2001).

The CIS survey instruments were designed to capture standardized information about children and their families from child welfare workers conducting investigations of reported maltreatment. The present study utilized information from the Intake Face Sheet and a component of the Child Information Sheet, the Child Functioning Checklist. This checklist was developed in consultation with child welfare workers as an index of the physical, emotional, cognitive, and behavioural issues that are often identified in child maltreatment investigations. Because the checklist items included only issues that child welfare workers became aware of during investigation, the original researchers believed that a more systematic assessment of issues would likely lead to identification of more issues than noted by workers during the study. Thus, the

occurrence of child functioning problems is likely underestimated. However, it provides a first and important estimate of the types of issues that are identified during child maltreatment investigations (Trocme et al., 2001).

In using this checklist, investigating workers were asked to indicate problems that had been confirmed by a formal diagnosis or direct observation as well as issues that they suspected were problems, but could not fully verify at the time of investigation. For this study, the category "identified" was used because the distinction between confirmed and suspected was not documented in all jurisdictions (Trocme et al., 2001). Also, clinical findings in this study are listed as behavioural, physical, emotional, and cognitive health issues in the CIS. The types of disabilities described in this study are categorized as physical, emotional, and cognitive health issues in the CIS.

Participants

The participants in this study include 7672 children from age 0 to 15 years with a mean age of 7.5 years (*SD*=4.48). The data included a 15 year age limit due to varying definitions of "child" across jurisdictions. These children were noted for all types of maltreatment, including physical (34.7%), sexual (11.5%), neglect (50.7%), and emotional (29.5%). These percentages do not add up to 100% because children were identified for more than one category of maltreatment.

Children were further categorized into disabled and nondisabled groups. Children with disabilities (n=1067) included at least one of the following disabilities: (a) developmental delay, (b) physical or developmental disability (autism, paralysis, cerebral palsy, or learning disability), (c) other health conditions (ongoing health concerns such as chronic illness or frequent hospitalizations), and (d) substance abuse related birth defects (Fetal Alcohol Syndrome, Fetal Alcohol Effects, cocaine addiction or solvent use by biological mother). These disabilities are generally considered to be developmental disabilities. According to the United States Developmental Disabilities Act, developmental disability is defined as: a severe and chronic condition that is attributed

to mental or physical impairment or their combination; occurs before age 21; is likely to be permanent; results is substantial functional limitations in at least three major life activities including self-care, receptive and expressive language, learning, mobility, self-direction, capacity for independent living, and economic self-sufficiency; and requires professional services that are of lifelong duration, planned and coordinated on an individual basis, and multi-disciplinary in nature (Graziano, 2002). This disabled group had a mean age of 7.03 years (*SD*=4.41).

Children without disabilities (*n*=6605) had a mean age of 7.57 years (*SD*=4.48) and included children who had showed no evidence of the disabilities previously described.

Results

Due to the categorical nature of the data, the following results involve a series of chi-square analyses. Table 1 describes the proportions of children without and with disabilities for each of the various types of clinical findings. These results tested the hypotheses: (a) there will be no differences in the types of clinical findings identified for children and adolescents without and with disabilities and; (b) in comparing children with and without disabilities, there will be no differences in the proportions of children identified for clinical findings. Chi-square analyses were also conducted to compare and contrast the proportions of children without and with disabilities in each age level for each clinical finding (see Tables 2, 3, 4, and 5). These results test the last hypothesis that, in comparing children with and without disabilities, there will be no differences in the proportions of children identified with various clinical findings across age levels. The average number of clinical findings any child is likely to have also has been calculated.

Children of All Ages

Table 1 reports the percentages of children without and with disabilities and total children in the sample who were identified as having clinical findings.

Table 1
Percentages of Children without and with Disabilities and Total Children in Sample with Identified Clinical Findings

Clinical Finding	Disability		Total
	No	Yes	
Behaviour Problem	19.7	33.3***	21.6
Depression or Anxiety	8.2	11.2***	8.6
Irregular School Attendance	6.0	10.0***	6.6
Negative Peer Involvement	5.8	10.2***	6.4
Violence to Others	4.3	9.2***	5.0
Running Away	3.7	3.7	3.7
Once	(1.7)	(1.5)	(1.7)
Multiple	(2.1)	(2.5)	(2.2)
Substance Abuse	3.3	3.0	3.3
Age Inappropriate Sexual Behaviour	2.3	5.0***	2.7
Self-Harming Behaviour	2.1	5.3***	2.5
Psychiatric Disorder	1.4	4.8***	1.9
One or More	29.5	44.8***	31.6

Note. Column percentages do not add up to percentages in the One or More column because children were identified in more than one category.
***p<=.001 (See text for X^2 values.)

Based on the total sample (n=7672), the most frequently identified clinical findings include behaviour problem (21.6%), depression or anxiety (8.6%), irregular school attendance (6.6%), negative peer involvement (6.4%), and violence to others (5%). Running away, substance abuse, age inappropriate sexual behaviour, self-harming behaviour, and psychiatric disorder were identified less frequently, with each clinical finding being less than five percent. Although child welfare workers were required to document other specific concerns not listed on the Child Functioning Checklist, these types of concerns were only categorized as "other" in the CIS data. This "other" category did not specify those concerns and it was not included in the data analysis.

Children without disabilities show similar frequencies of clinical findings in Table 1. Specifically, they were most frequently identified for behaviour problem (19.7%), depression or anxiety (8.2%), irregular school attendance (6%), negative peer involvement (5.8%), and violence to others (4.3%). Running away, substance abuse, age inappropriate sexual behaviour, self-harming behaviour, and psychiatric disorder were also the least frequent clinical findings among children without

disabilities.

Table 1 shows that children with disabilities also were most frequently identified for behaviour problem (33.3%), depression or anxiety (11.2%), irregular school attendance (10%), negative peer involvement (10.2%), and violence to others (9.2%). Significant differences between the proportions of children with and children without disabilities were found for behaviour problem, $X^2(1, N=7672) = 100.528$, $p<.001$, depression or anxiety, $X^2(1, N=7672) = 10.132$, $p=.001$, irregular school attendance, $X^2(1, N=7672) = 23.931$, $p<.001$, negative peer involvement, $X^2(1, N=7672) = 30.122$, $p<.001$, and violence to others, $X^2(1, N=7672) = 47.140$, $p<.001$. Also, compared to children without disabilities, children with disabilities also were significantly more likely to be identified for age inappropriate sexual behaviour, $X^2(1, N=7672) = 25.511$, $p<.001$, self-harming behaviour, $X^2(1, N=7672) = 39.236$, $p<.001$, and psychiatric disorder, $X^2(1, N=7672) = 58.524$, $p<.001$. There were no statistical differences between children without disabilities and children with disabilities regarding running away (3.7% for both groups) and substance abuse (about 3% for each group). Also shown in Table 1, a significant difference was found $X^2(1, N=7672) = 99.306$, $p<.001$, between children without disabilities and children with disabilities who were identified for at least one clinical finding.

Overall, the average number of clinical findings was found to be similar for the total sample (2.08), children without disabilities (2.05), and children with disabilities (2.22). Regardless of statistical probability, this difference would not be expected to have much clinical significance.

Children of Specific Age Levels

Chi-square analyses with clinical findings were conducted for specific age levels. The following is a discussion of these results.

Age level 0-3 years. Table 2 lists the percentages of children by disability status and total children in the sample aged 0 to 3 years who were identified as having clinical findings.

As shown for the total age group (*n*=1764), behaviour problem (4.4%) and depression or anxiety (1.5%) were the most frequently identified clinical findings. The remaining clinical findings listed in the table were each identified at less than one percent.

Table 2
Percentages of Children without and with Disabilities and Total Children at Age Level 0 to 3 with Identified Clinical Findings

Clinical Finding	Disability No	Yes	Total
Behaviour Problem	3.6	8.9***	4.4
Depression or Anxiety	1.5	1.8 [a]	1.5
Violence to Others	0.7	1.8[a]	0.9
Age Inappropriate Sexual Behaviour	0.7	0.0[a]	0.6
Running Away	0.4	0.4[a]	0.4
Once	(0.2)[a]	(0.0)[a]	(0.2)
Multiple	(0.3)[a]	(0.4) [a]	(0.3)
Self–Harming Behaviour	0.1	1.4[a***]	0.3
Psychiatric Disorder	0.2 [a]	0.4 [a]	0.2
Negative Peer Involvement	0.2 [a]	0.0 [a]	0.2
Substance Abuse	0.2 [a]	0.0 [a]	0.2
Irregular School Attendance	0.0 [a]	0.4 [a*]	0.1
One or More	6.1	11.3**	7.0

Note. Column percentages do not add up to percentages in the One or More column because children were identified in more than one category.
[a] Cells with less than five expected frequencies.
*p<.05 **p<.01 ***p<=.001 (See text for X^2 values.)

Children without disabilities show a similar pattern of frequent clinical findings at this age level. Again, behaviour problem and depression or anxiety were the most frequently identified clinical findings. Less than one percent of children without disabilities were identified for violence to others, age inappropriate sexual behaviour, running away, self-harming behaviour, psychiatric disorder, negative peer involvement, substance abuse, and irregular school attendance.

Compared to children without disabilities aged 0 to 3 years, children who had at least one disability were also more likely to be identified for behaviour problem. This was found to be a statistical difference, $X^2(1, N=1764) = 15.682$, $p<.001$. Also compared to children without disabilities, children with disabilities were identified more frequently for depression or anxiety (1.8% vs. 1.5%), violence to others (1.8% vs. 0.7%), and self-harming behaviour (1.4% vs. 0.1%). Only self-harming behaviour showed statistical significance, $X^2(1, N=1764) = 11.514$, $p=.001$. The least frequent clinical findings for both groups include age inappropriate

sexual behaviour, running away, psychiatric disorder, negative peer involvement, substance abuse, and irregular school attendance. A statistical difference, $X^2(1, N=1764) = 5.258$, $p<.05$, between children without and with disabilities was found for irregular school attendance. Differences for self-harming behavior and irregular school attendance need to be interpreted with caution due to low expected cell frequencies which results in low statistical power.

Over 11 percent of children aged 0 to 3 years with disabilities were identified for at least one clinical finding. This is almost double the percentage of children without disabilities identified for at least one clinical finding (6.1%). Chi-square analyses revealed this difference to be statistically significant, $X^2(1, N=1764) = 9.903$, $p<.01$.

Overall, the average number of clinical findings that children were likely to have did not vary for the total age group (1.33), children without disabilities (1.32), and children with disabilities (1.34). Again, this would not reveal any clinical significance.

Age level 4-7 years. Table 3 shows the percentages of children without and with disabilities and all children aged 4 to 7 years identified with clinical findings.

Table 3
Percentages of Children without and with Disabilities and Total Children at Age Level 4 to 7 with Identified Clinical Findings

Clinical Finding	Disability		Total
	No	Yes	
Behaviour Problem	13.7	30.7***	16.1
Depression or Anxiety	4.5	5.8	4.7
Age Inappropriate Sexual Behaviour	2.6	5.2*	3.0
Irregular School Attendance	1.6	10.0***	2.9
Violence to Others	2.3	5.5***	2.8
Negative Peer Involvement	1.7	5.5***	2.3
Psychiatric Disorder	0.5	3.9 a***	1.0
Self–Harming Behaviour	0.3	2.3a***	0.6
Running Away	0.3	0.3a	0.3
Once	(0.1)a	(0.0)a	(0.0)
Multiple	(0.2)a	(0.3)a	(0.2)
Substance Abuse	0.2a	0.3 a	0.2

One or More	20.4	43.7***	23.8

Note. Column percentages do not add up to percentages in the One or More column because children were identified in more than one category.

[a] Cells with less than five expected frequencies.

*p<.05 ***p<=.001 (See text for X^2 values.)

This table shows that behaviour problem (16.1%) and depression or anxiety (4.7%) were the most common clinical findings for children aged 4 to 7 years (*n*=2140). Age inappropriate sexual behaviour, irregular school attendance, violence to others, and negative peer involvement were found to be between two and three percent. Psychiatric disorder, self-harming behaviour, running away, and substance abuse were each at one percent or less.

Similarly, the most common clinical findings for children without disabilities were behaviour problem (almost 14%) and depression or anxiety (4.5%). Percentages for age inappropriate sexual behaviour, irregular school attendance, violence to others, and negative peer involvement range from 1.7% to 2.6%. The least common clinical findings, for children without disabilities aged 4 to 7 years, include psychiatric disorder, self-harming behaviour, running away, and substance abuse. Each of the least frequent clinical findings was identified at less than one percent.

Compared to children without disabilities, children with disabilities aged 4 to 7 years were significantly more likely to be identified for behaviour problem, $X^2(1, N=2140) = 57.107$, $p<.001$. Irregular school attendance was the next most frequent clinical finding (10%) for children with disabilities. This was also a statistical difference compared to children without disabilities, $X^2(1, N=2140) = 67.267$, $p<.001$. Children with disabilities were also identified more frequently for depression or anxiety than children without disabilities, but no significant differences were found. Significant differences were found for age inappropriate sexual behaviour, $X^2(1, N=2140) = 5.956$, $p<.05$, violence to others, $X^2(1, N=2140) = 10.147$, $p=.001$, negative peer involvement, $X^2(1, N=2140) = 16.653$, $p<.001$, psychiatric disorder, $X^2(1, N=2140) = 31.305$, $p<.001$, and self-harming behaviour, $X^2(1, N=2140) = 16.440$, $p<.001$. Differences found for psychiatric disorder and self-harming behaviour need to be

interpreted with caution because low statistical power resulted from low expected cell frequencies in the chi-square analysis. Lastly, percentages of children with and without disabilities in this age group did not differ on clinical findings of running away and substance abuse.

A statistical difference was found, $X^2(1, N=2140) = 78.928$, $p<.001$ between children without and with disabilities who were identified as having at least one clinical finding. The average number of clinical findings was found to be similar for the 4 to 7 age group (1.43), children without disabilities (1.37), and children with disabilities (1.60).

Age level 8-11 years. Percentages of children without and with disabilities and all children aged 8 to 11 years with identified clinical findings are shown in Table 4.

Table 4
Percentages of Children without and with Disabilities and Total Children at Age Level 8 to 11 with Identified Clinical Findings

Clinical Finding	Disability No	Yes	Total
Behaviour Problem	22.3	50.2***	25.9
Depression or Anxiety	9.6	13.2	10.0
Negative Peer Involvement	5.3	15.6***	6.6
Violence to Others	5.1	15.6***	6.4
Irregular School Attendance	4.0	8.6***	4.6
Psychiatric Disorder	1.8	6.2***	2.4
Self–Harming Behaviour	1.7	5.3 [a] ***	2.2
Age Inappropriate Sexual Behaviour	1.5	3.3[a]	1.8
Running Away	1.3	2.9[a]	1.5
Once	(0.6)	(1.6)[a]	(0.7)
Multiple	(0.8)	(1.2)[a]	(0.9)
Substance Abuse	0.9[a]	1.2 [a]	0.9
One or More	32.8	59.7***	36.2

Note. Column percentages do not add up to percentages in the One or More column because children were identified in more than one category.
[a] Cells with less than five expected frequencies.
***p<=.001 (See text for X^2 values.)

In this age level (n=1876), the most frequently identified clinical findings include behaviour problem (about 26%), depression or anxiety (10%), negative peer involvement, violence to others, and irregular school

attendance (over 6% each). Psychiatric disorder, self-harming behaviour (over 2% each), age inappropriate sexual behaviour (1.8%), running away (1.5%) and substance abuse (less than 1%) were the least frequently identified issues for children aged 8 to 11 years.

A similar pattern appears for children without disabilities in the 8 to 11 age level. They had slightly lower percentages for behaviour problem (22.3%), depression or anxiety (9.6%), negative peer involvement (5.3%), violence to others (about 5%), and irregular school attendance (4%). The least frequent clinical findings for children without disabilities include psychiatric disorder, self-harming behaviour, age inappropriate sexual behaviour, running away, and substance abuse.

Behaviour problem (50.2%) was the most common clinical finding identified for children with disabilities. This percentage was more than double the percentage of children without disabilities. Chi-square analyses revealed a statistical difference, $X^2(1, N=1876) = 85.875$, $p<.001$, for behaviour problem. The next most frequent clinical findings were negative peer involvement and violence to others (over 15% each). Compared to children without disabilities, a statistical difference was found for negative peer involvement, $X^2(1, N=1876) = 36.860$, $p<.001$, and violence to others, $X^2(1, N=1876) = 39.057$, $p<.001$. Although depression or anxiety was among the most common clinical findings identified for children with disabilities, a significant difference between children with and without disabilities was not found. There were significant differences found for irregular school attendance, $X^2(1, N=1876) = 10.122$, $p=.001$, psychiatric disorder, $X^2(1, N=1876) = 16.984$, $p<.001$, and self-harming behaviour, $X^2(1, N=1876) = 13.075$, $p<.001$. No statistical differences were revealed for the least common clinical findings of age inappropriate sexual behaviour, running away, and substance abuse.

About 33 percent of children without disabilities of the same age were identified for at least one clinical finding compared to almost 60 percent of children with disabilities. This difference was statistically significant $X^2(1, N=1876) = 66.280$, $p<.001$.

Generally, children with disabilities also were likely to have a n average

of 2.09 clinical findings. This average is slightly more than the average for children without disabilities (1.67) and the total 8 to 11 age level (1.76).

Age level 12-15 years. Table 5 displays the percentages of children by disability status and total children in the 12 to 15 year age level identified for different clinical findings.

Overall, children in this age level (n=1853) were most likely to be identified for behaviour problem (almost 40%), irregular school attendance (19.2%), depression or anxiety (18.5%), negative peer involvement (about 17%), running away (13%), and substance abuse (12.2%). They were least likely to be identified for violence to others, self-harming behaviour, age inappropriate sexual behaviour, and psychiatric disorder. These clinical findings were each identified at less than 10 percent for 12 to 15 year-olds.

Table 5
Percentages of Children without and with Disabilities and Total Children at Age Level 12 to 15 with Identified Clinical Findings

Clinical Finding	Disability No	Yes	Total
Behaviour Problem	38.4	49.1**	39.7
Irregular School Attendance	18.5	23.9	19.2
Depression or Anxiety	17.1	28.3***	18.5
Negative Peer Involvement	16.0	23.9**	16.9
Running Away	13.0	13.3	13.0
Once	(6.2)	(5.3)	(6.1)
Multiple	(7.3)	(9.7)	(7.6)
Substance Abuse	12.2	12.4	12.2
Violence to Others	9.0	16.8***	9.9
Self–Harming Behaviour	6.2	14.6 [a] ***	7.2
Age Inappropriate Sexual Behaviour	4.1	12.8***	5.2
Psychiatric Disorder	3.0	10.2***	3.9
One or More	57.8	72.6***	59.6

Note. Column percentages do not add up to percentages in the One or More column because children were identified in more than one category.
**p<.01 ***p<=.001 (See text for X^2 values.)

For children without disabilities, the most frequently identified clinical findings were behaviour problem (over 38%), irregular school attendance (18.5%), depression or anxiety (about 17%), and negative peer involvement (16%). Identical percentages to the total age level were found for running away and substance abuse. Violence to others, self-harming behaviour, age inappropriate sexual behaviour, and psychiatric disorder were the least frequent clinical findings for children without disabilities.

The most common clinical finding for children with disabilities aged 12 to 15 was behaviour problem (almost 50%). This was found to be a statistically significant difference, $X^2(1, N=1853) = 9.490$, $p<.01$, when compared to children without disabilities at this age level. Depression or anxiety was the second most frequent clinical finding for children with disabilities. A significant difference, $X^2(1, N=1853) = 16.415$, $p<.001$, between children without disabilities and children with disabilities on this clinical finding was revealed. Almost one quarter of children with disabilities were identified for irregular school attendance and negative

peer involvement compared to 18.5 percent and 16 percent of children without disabilities. Only negative peer involvement showed a statistical difference, $X^2(1, N=1853) = 8.830$, $p<.01$. Also, compared to children without disabilities, those with disabilities aged 12-15 years were significantly more likely to be identified for violence to others, $X^2(1, N=1853) = 13.639$, $p<.001$, self-harming behaviour, $X^2(1, N=1853) = 20.842$, $p<.001$, age inappropriate sexual behaviour, $X^2(1, N=1853) = 30.672$, $p<.001$, and psychiatric disorder, $X^2(1, N=1853) = 27.280$, $p<.001$. No differences were found for children with and without disabilities for running away and substance abuse.

For one or more clinical findings, the difference between children with disabilities (72.6%) and children without disabilities (57.8%) was found to be statistically significant, $X^2(1, N=1853) = 18.027$, $p<.001$.

Children with disabilities aged 12 to 15 years had the highest average number of clinical findings (3.03) compared to children without disabilities (2.61).

Effect of Disability and Age

Figure 1 illustrates the disability status by age interaction in a different manner. Figure 1 shows the percentages of children by disability status in each age level identified with at least one clinical finding.

Two patterns are illustrated. The first pattern shows disability effects. Compared to children without disabilities, there are greater percentages of children with disabilities who have at least one clinical finding, regardless of age. The second pattern shows age effects. The percentages of children with and without disabilities identified with at least one clinical finding increase as age increases.

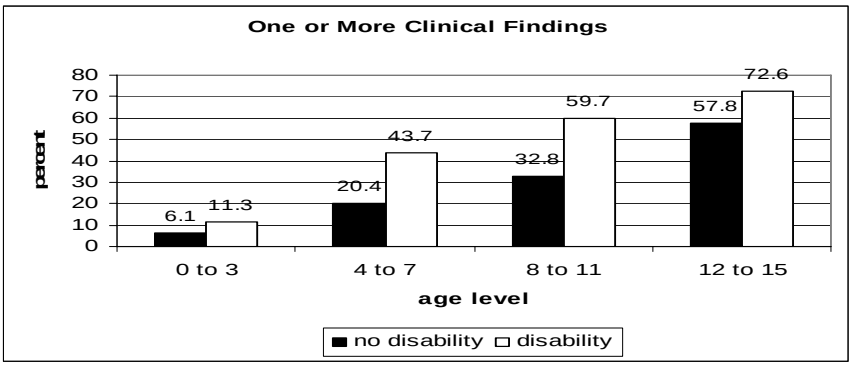

Figure 1
Percentages of Children without and with Disabilities at Each Age Level with Identified One or More Clinical Findings

The results from Tables 2, 3, 4, 5 and Figure 1 show that children, particularly those with disabilities, are likely to have various clinical findings as they age. Thus, disability status appears to interact with age in the display of clinical findings.

Discussion

The general purpose of this study was to examine the types and proportions of identified clinical findings among children with and without disabilities. The results showed that, regardless of age, children with disabilities in this nationally representative sample were identified for all the same clinical findings as children without disabilities. Clearly, the most common clinical finding for both groups was behaviour problem. Other common clinical findings were depression or anxiety, irregular school attendance, negative peer involvement, and violence to others. The least frequent clinical findings for children with and without disabilities included running away, substance abuse, age inappropriate sexual behaviour, self-harming behaviour, and psychiatric disorder. These results provide support for the first hypothesis, i.e., that there will be no differences in the types of clinical findings identified for children with and without disabilities.

Although there were similarities in the types of identified clinical

findings between children with and without disabilities, significant differences in proportions between children with and without disabilities on all identified clinical findings were also found, except for running away and substance abuse. The similar or identical proportions for running away and substance abuse may be a function of opportunity and access for the children in this sample. Also, children with disabilities were significantly more likely than children without disabilities to have at least one clinical finding. Generally, these results did not support the second hypothesis, i.e., in comparing children with and without disabilities, there will be no differences in the proportions of children identified for these clinical findings. Finally, the average number of clinical findings was about two for both groups, although it was slightly higher for children with disabilities.

Differences in proportions between children with and without disabilities became more clear when examining age levels. Children in the age level 0 to 3 years were basically asymptomatic, with the lowest proportions of identified clinical finding issues and an average of about one clinical finding for both children with and without disabilities. However, children with disabilities were more likely to be identified for behaviour problem, self-harming behaviour, and irregular school attendance. The last two issues were of low frequency and limited conclusions can be drawn for those results. For age levels 4 to 7 years and 8 to 11 years, significant differences were found on behaviour problem, irregular school attendance, violence to others, negative peer involvement, psychiatric disorder, and self-harming behaviour. Again, low frequencies limit any conclusions regarding significant differences found for psychiatric disorder and self-harming behaviour. Children with disabilities aged 4 to 7 years were also significantly more likely to be identified for age inappropriate sexual behaviour than children without disabilities. This difference was not found for the 8 to 11 age level. Significant differences between children with and without disabilities aged 12 to 15 years were also found on the same clinical findings as the 4 to 7 and 8 to 11 age levels. Two exceptions included irregular attendance, where no difference was found for the 12 to 15 age level, and depression or anxiety, where a significant difference was found only for the age level 12 to 15 years. Overall, age level 12 to 15

years was the most symptomatic, with the highest proportions of children with and without disabilities identified for all clinical findings. These findings did not support the last hypothesis, i.e., in comparing children with and without disabilities, there will be no differences in the proportions of children identified with various clinical findings across age levels.

Furthermore, the differences between proportions of children with and without disabilities appear to increase with age, with the largest differences appearing in the 12 to 15 age level. The difference was largest in the 4 to 7 age level for irregular school attendance. Also, differences in proportions in the 8 to 11 age level were the largest for behaviour problem, violence to others, running away, and negative peer involvement. Finally, compared to all age levels and children without disabilities, children with disabilities aged 12 to 15 years had the highest average number of clinical findings.

Research, particularly empirical research, that examines effects of maltreatment among children and adults with disabilities is limited, yet some results of this study appear consistent with the existing literature. Regarding types of clinical findings, research without the use of control groups found behaviour problems, aggressive behaviour, self-abuse, suicidal tendencies, depression and anxiety, inappropriate sexual behaviour, and psychiatric disorders among maltreated children with disabilities (Cook et al., 1993; Burke & Bedard, 1995; Dunne & Power 1990; Mansell et al., 1992). The finding of this study, greater frequency of behaviour problems or "acting out" among children with disabilities, is consistent with Dunne and Power's hypothesis. This study did not measure for greater intensity or qualitatively different responses of children with disabilities, as indicated by Varley (1984), nor did the study determine if maltreatment may exacerbate disabilities (Bowers Andrews, & Veronen, 1993). However, the results of this study, showed that children with disabilities were identified significantly more often for psychiatric disorders than children without disabilities.

Research with the use of control groups found differences for children with disabilities on self-abuse and inappropriate sexual

remarks/comments (Mansell et al., 1998), which are similar to Brown's (2003) results and the findings of this study. Mansell and others (1998) also found no differences for aggressive behaviour and differences for use/abuse of alcohol between children with and without disabilities. Such findings are inconsistent with the results of this study. These inconsistencies may be due to methodological differences, such as type and size of samples.

The results of this study are also consistent with Brown's (2003) study in which similar analyses were conducted using the same nationally representative data. There was one inconsistent finding. Although Brown found that non-delayed children were more likely to be identified for substance abuse than were delayed children, this study did not find differences between children with and without disabilities on this clinical finding. This inconsistency may be due to the difference in the definition of disability used in each study.

Sullivan and Knutson (2000a, 2000b) found poorer school attendance among maltreated disabled runaways and maltreated disabled children. The present study also found that children with disabilities were significantly more likely to be identified for irregular school attendance than children without disabilities. Sullivan and Knutson found that running away is primarily an adolescent problem which is similar to the results of this study, in which running away was frequently identified for both children with and without disabilities, aged 12 to 15 years. Finally, the researchers found that running away was associated with disability, which was not found in this study. The inconsistent findings may be attributed to definitional differences of disability and different samples. Sullivan and Knutson used school and hospital samples, which had less physical disabilities. The present study included more physical disabilities, which would limit opportunity to run away.

There is the myth that the effects of maltreatment on children with disabilities might be smaller because they are "damaged" or less sensitive to the effects (Sobsey & Mansell, 1990). Although this study did not determine cause and effect of maltreatment, this study found that (a) children with disabilities were identified for the same types of clinical

findings as children without disabilities, and (b) the proportions of children with disabilities identified for a variety of clinical findings were generally greater than the proportions of children without disabilities, particularly across age levels. Thus, there is no support for the myth that children with disabilities are insensitive to pain. Consequently, these results point to the importance of assessment, prevention, and intervention with children with disabilities, who are reported for maltreatment, particularly because of certain vulnerability factors including limited social and communication skills, and dependency (Tharinger et al., 1990).

As with children without disabilities, assessment of children with disabilities reported for maltreatment involves the identification of signs of maltreatment. Recognition of maltreatment at an early stage can prevent an escalation of maltreatment, it can lead to referral for necessary intervention and may prevent the known negative effects in children exposed to chronic maltreatment (Ammerman & Baladerian, 1993). As shown in the results, the 0 to 3 year is mainly asymptomatic, but symptoms can occur at later ages (Allington-Smith, Ball, & Haytor, 2002).

The diagnosis of maltreatment can begin with recognition of physical signs such as inexplicable or unusual bruises and injuries, unkempt appearance, poor hygiene, malnutrition, and sexually transmitted diseases (Ammerman & Baladerian, 1993). In the absence of physical signs, sudden behaviour changes, such as aggression, sexually inappropriate behaviour, irregular school attendance, and self-harm, need to be recognized as possible indicators of maltreatment (Ammerman & Baladerian, 1993; Focht-New, 1996). Researchers suggested that behaviour problems, including acting out, self-harm, and sexually inappropriate behaviour, and psychiatric disorders may be a way to communicate or cope with maltreatment (Burke & Bedard, 1994; Dunne & Power, 1990; McCreary & Thompson, 1999; Sobsey & Mansell, 1990). Such behaviours in children with disabilities may be subtle and often be confused with behavioural features of the disability (Allington-Smith et al., 2002; Ammerman & Baladerian, 1993). Thus, professionals need to be able to recognize and differentiate between maltreatment

effects and disability effects (Focht-New, 1996). For example, Howlin and Clements (1995) used different assessment measures from people to determine changes in stress related behaviours and changes in autistic-type behaviours. Because there is often no typical pattern of behavioural symptoms, professionals must compare current symptoms with previous functioning, gain a detailed history for the young person from other adults in child's life (Allington-Smith et al., 2002). Assessment for maltreatment also involves investigations of causes for behaviour changes by asking questions of a variety of people in the child's life (Ammerman & Baladerian, 1993; Focht-New, 1996; Howlin & Clements, 1995).

Finally, it is important to have an awareness of occurrence and knowledge that persons with disabilities present a predictable pattern of signs similar to persons without disabilities (Ammerman & Baladerian, 1993; Cook et al., 1993). In addition, a cluster of symptoms is important to assess, not just a single indicator (Tharinger et al., 1990).

Several prevention methods are used in the area of maltreatment of children with disabilities. Child-centred programs teach children communication and self-protection skills, how to recognize abusive behaviour, and identify feelings they may experience (Ammerman & Baladerian, 1993; Sullivan, Knutson, Scanlan, & Cork, 1997). Increased supervision for children with disabilities, who may not be able to protect themselves or run away, would also be important (Dunne & Power, 1990). It is critical that the unique needs of children with disabilities are considered a part of any prevention program, including special education needs, medical and nutritional needs, and use of assistive devices and technologies (Ammerman & Baladerian, 1993).

Family-oriented programs help to provide support services to reduce incidence of physical abuse and neglect and improve parental awareness of risk factors associated with maltreatment among children with disabilities (Sullivan et al., 1997). Parent training courses can include topics on communication, behaviour management, and household organization (Ammerman & Baladerian, 1993).

In terms of treatment, no single treatment strategy will be suitable for every child (Allington-Smith et al., 2002). Programs need to be developmentally appropriate and sensitive, particularly to the communication difficulties of children with a variety of disabilities (Levey & Lagos, 1994). Action methods, play or art therapy, music therapy, role playing, use of photographs or sketches, picture boards, picture books from magazines, drawings or photographs for a child who uses gestures to communicate, are important for children who have limited communication skills and require other means of communication (Focht-New, 1996; Hurley, Tomasulo, & Pfadt, 1998; Sullivan & Scanlan, 1990). Group psychotherapy has also been recommended when it is appropriate to the child's needs (Ammerman & Baladerian, 1993; Focht-New, 1996; Hurley et al., 1998). Given that older children with disabilities were most likely to be identified for depression or anxiety should alert clinicians to the need for comprehensive assessment and appropriate treatment for these children.

A multidisciplinary, competency based treatment approach attending to the needs of the child, parents, and family unit is recommended. Children are offered counselling and skills training through individual and/or group sessions. Parents are trained in relaxation, parenting and behaviour management skills, and social interactive skills. Such an approach needs to involve coordination of related services to further facilitate therapeutic needs (Levey & Lagos, 1994).

Some limitations of the findings need to be considered. First, no specific criterion level was used to judge statistical significance since current statistical authorities argue against using prespecified criteria (Shadish, Cook, & Campbell, 2002). Each of the five tables contains multiple comparisons for individual clinical findings and a summary variable indicating one or more of these clinical findings. In view of the fact that 10 clinical findings are evaluated in each table, the probability levels should be viewed conservatively. Individual clinical findings with probability levels greater than .01 should be considered with particular caution.

A second limitation has to do with the design of the study, which may

not clarify some possible confounding results. Because the study is not designed to determine cause and effect, there may be some confounding between having a disability and behaviour problems or other clinical findings. If children are identified as having a disability because they are exhibiting behaviour problems, then children with disabilities will appear to have more behaviour problems than children without disabilities. The greater proportions of children with disabilities identified for various clinical findings may be related to the disability itself. Hence, children with behaviour problems because of a disability may not be accurately detected for signs of maltreatment.

Finally, the proportions of children with and without disabilities aged 0 to 3 years identified for various clinical findings were not zero as one might expect. As examples, children with and without disabilities were identified for depression or anxiety (1.8% and 1.5%, respectively), violence to others (1.8% and 0.7%), and self-harming behaviour (1.4% and 0.1%). Because most of these clinical findings are not clearly defined in the CIS, it is unknown how the social workers interpreted these items on the Child Functioning Checklist when collecting data.

Conclusion

The present study was designed to compare and contrast types and proportions of children with and without disabilities on identified clinical findings. Children with disabilities were found to have the same types of clinical findings as children without disabilities, but at significantly greater frequencies. Assessment, prevention, and treatment efforts for these children need to involve their unique needs and adaptive methods are required to meet those needs.

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