Child abuse and mental disorders in Canada

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ABSTRACT

Background: Nationally representative Canadian data on the prevalence of child abuse and its relation with mental disorders are lacking. We used contemporary, nationally representative data to examine the prevalence of 3 types of child abuse (physical abuse, sexual abuse and exposure to intimate partner violence) and their association with 14 mental conditions, including suicidal ideation and suicide attempts.

Methods: We obtained data from the 2012 Canadian Community Health Survey: Mental Health, collected from the 10 provinces. Respondents aged 18 years and older were asked about child abuse and were selected for the study sample (*n* = 23 395). The survey had a multistage stratified cluster design (household response rate 79.8%).

Results: The prevalence of any child abuse was 32% (individual types ranged from 8% to 26%). All types of child abuse were associated

with all mental conditions, including suicidal ideation and suicide attempts, after adjustment for sociodemographic variables (adjusted odds ratios ranged from 1.4 to 7.9). We found a dose–response relation, with increasing number of abuse types experienced corresponding with greater odds of mental conditions. Associations between child abuse and attention deficit disorder, suicidal ideation and suicide attempts showed stronger effects for women than men.

Interpretation: We found robust associations between child abuse and mental conditions. Health care providers, especially those assessing patients with mental health problems, need to be aware of the relation between specific types of child abuse and certain mental conditions. Success in preventing child abuse could lead to reductions in the prevalence of mental disorders, suicidal ideation and suicide attempts.

C hild abuse is a major public health problem worldwide with serious adverse effects at later ages. The best estimates of the prevalence of child abuse in Canada come from 2 representative samples from Ontario, 1 from 1990 (Ontario Health Supplement, *n* = 9953, age ≥ 15 yr)[1] and 1 from 2000–2001 (Ontario Child Health Study, *n* = 1893, age 21–35 yr).[2] The 1990 study indicated that 31% of males and 21% of females had experienced physical child abuse, and 4% of males and 13% of females had experienced sexual child abuse.[1] Similar trends were noted in data collected in 2000–2001.[2] Prevalence of sexual abuse was found to be higher in the Ontario Child Health Study, but this was thought to be related to the inclusion of sexual abuse committed by anyone (e.g., adolescents), rather than only adults, as was the case with the Ontario Health Supplement.[1,2] Data from Quebec collected in 2006 indicated that 23% of men and 17% of women had experienced physical child abuse; 10% of men and 22% of

women had experienced sexual child abuse; and 22% of men and women had experienced psychological child abuse, including exposure to intimate partner violence.[3,4] Unfortunately, these estimates are dated, restricted to only 2 provinces, based on limited assessments of child abuse and, in the case of the Quebec data, involve a low response rate of 30%.

Although the association between child abuse and subsequent mental conditions (including disorders, suicidal ideation and suicide attempts) is well established,[5–9] we know little about differential effects associated with several abuse types and specific mental disorders, and we currently have no nationally representative Canadian data. Filling this gap in knowledge would produce evidence-based Canadian findings that could inform policy, prevention and intervention efforts specifically aimed at reducing both child abuse and poor mental health outcomes.

Our overall objective was to extend our understanding of the relation between child abuse and mental conditions (i.e., mental disorders, suicidal

ideation and suicide attempts)[6–8,10–19] with a more detailed examination of child abuse severity and mental health outcomes. We used a nationally representative Canadian sample to examine 3 types of child abuse (physical abuse, sexual abuse and exposure to intimate partner violence) and 14 mental conditions, including suicidal ideation and suicide attempts. The specific research objectives were to estimate the prevalence of 3 types of physical abuse, sexual abuse and exposure to intimate partner violence; to examine the association of mental conditions with types of child abuse and number of child abuse types experienced; and to determine whether sex differences exist in the associations between child abuse and mental conditions.

Methods

Data and sample
We obtained data from the master file of the 2012 Canadian Community Health Survey: Mental Health.[20] The 2012 Canadian Community Health Survey was a cross-sectional study that used a multistage stratified cluster sampling design: it included a representative sample of respondents aged 15 years and older living in the 10 provinces (*n* = 25 113) and excluded residents in the 3 territories, residents in indigenous communities, full-time members of the Canadian Forces and people living in institutions (collectively less than 3% of the Canadian population).[20] Most interviews (87%)

were conducted in person by trained lay interviewers using computer-assisted interviewing.[20] The overall household-level response rate was 79.8%, and the household and person response rate was 68.9%.[20] Because of the sensitive nature of the items, the questions about child abuse were only asked for respondents aged 18 years and older (*n* = 23 395). Respondents were informed about privacy, confidentially and the voluntary nature of the survey, and gave their consent to participate.[21]

Primary measurements

Child abuse
Physical abuse, sexual abuse and exposure to intimate partner violence were assessed in the 2012 Canadian Community Health Survey using items from the Childhood Experiences of Violence Questionnaire, a valid and reliable tool developed for assessing youth victimization.[22] All respondents aged 18 years and older were asked to answer questions about childhood abuse that occurred before the age of 16 years. Responses to questions about child abuse were scored on an ordinal scale representing frequency of occurrence (never, 1–2 times, 3–5 times, 6–10 times or > 10 times). In this study, binary classifications of child abuse (present/absent) followed the guidelines of the Childhood Experiences of Violence Questionnaire as follows. Physical abuse was classified as 1 or more of the following 3 criteria: 1) being slapped on the face, head or

Table 1: Prevalence of child abuse in Canada, by type

| Variable | No. (%)* | | | *p* value† |
	Whole sample	Men	Women	
Physical abuse				
Slapped on face head or ears, hit or spanked	5 080 (22.3)	2 700 (26.0)	2 380 (18.6)	< 0.001
Pushed, grabbed, shoved, something thrown at	2 550 (10.5)	1 300 (11.8)	1 250 (9.2)	< 0.001
Kicked, bit, punched, choked, burned, attacked	2 450 (9.9)	1 350 (11.9)	1 100 (7.9)	< 0.001
Any physical abuse	6 070 (26.1)	3 280 (31.0)	2 790 (21.3)	< 0.001
Sexual abuse	2 760 (10.1)	640 (5.8)	2 110 (14.4)	< 0.001
Exposure to intimate partner violence	1 900 (7.9)	730 (6.9)	1 170 (8.9)	< 0.001
Any child abuse	7 700 (32.1)	3 610 (34.0)	4 090 (30.3)	< 0.001
Number of child abuse types				
No abuse	15 690 (68.0)	6 890 (66.1)	8 800 (69.8)	< 0.001
1 type only	5 260 (22.3)	2 720 (25.8)	2 540 (19.0)	< 0.001
2 types	1 790 (7.3)	720 (6.6)	1 070 (8.0)	< 0.001
3 types	610 (2.4)	160 (1.5)	450 (3.2)	< 0.001

*Unweighted numbers are rounded to a base of 10 for confidentiality purposes according to Statistics Canada data release policies. Percentages are based on weighted numbers.
†χ² tests of significance for the male and female comparison.

ears, or hit or spanked with something hard 3 or more times; 2) being pushed, grabbed or shoved, or having something thrown at the respondent to hurt them 3 or more times; and 3) being kicked, bit, punched, choked, burned or physically attacked 1 or more times. Sexual abuse was clas-sified as experiencing attempts or being forced into unwanted sexual activity by being threat-ened, held down or hurt in some way, and/or sex-ually touched meaning unwanted touching or grabbing, kissing or fondling against the respon-dent's will 1 or more times. Exposure to intimate

Table 2: Sociodemographic variables by child abuse in Canada			
	No. (%)*		
Variable	No child abuse	Child abuse	OR (95% CI)
Age, yr			
18–34	4 480 (74.6)	1 690 (25.4)	1.0
35–49	3 060 (62.9)	1 955 (37.1)	1.7 (1.5–2.0)
50–64	3 830 (62.5)	2 475 (37.5)	1.8 (1.5–2.0)
≥ 65	4 330 (72.9)	1 580 (27.1)	1.1 (0.96–1.2)
Education			
No high school diploma	2 880 (70.9)	1 225 (29.1)	1.0
High school diploma	2 730 (70.4)	1 180 (29.6)	1.0 (0.9–1.2)
Some postsecondary education	960 (62.3)	540 (37.7)	1.5 (1.2–1.8)
Trade/college/university certificate/diploma	5 865 (67.2)	3 090 (32.8)	1.2 (1.0–1.4)
University degree (Bachelor's or higher)	3 205 (66.8)	1 635 (33.2)	1.2 (1.0–1.4)
Income, $			
≤ 29 999	3 760 (67.2)	1 995 (32.8)	1.0
30 000–49 999	3 445 (68.9)	1 515 (31.1)	0.9 (0.8–1.1)
50 000–79 999	3 710 (70.2)	1 765 (29.8)	0.9 (0.8–0.99)
≥ 80 000	4 780 (66.2)	2 425 (33.8)	1.0 (0.9–1.2)
Marital status			
Married/common-law	8 310 (66.6)	4 060 (33.4)	1.0
Never married	4 120 (72.7)	1 860 (27.3)	0.8 (0.7–0.8)
Separated/divorced/widowed	3 245 (65.5)	1 760 (34.5)	1.1 (0.9–1.2)
Visible minority			
No	13 225 (67.3)	6 360 (32.7)	1.0
Yes	2 435 (69.7)	1 315 (30.3)	0.9 (0.8–1.0)
Country of birth			
Canada	12 770 (66.4)	6 360 (33.6)	1.0
Other than Canada	2 865 (71.7)	1 300 (28.3)	0.8 (0.7–0.9)
Province of residence			
Manitoba	1 060 (60.0)	635 (40.0)	1.0
British Columbia	1 725 (64.2)	1 125 (35.8)	0.8 (0.7–1.0)
Alberta	1 605 (63.9)	990 (36.1)	0.8 (0.7–1.0)
Saskatchewan	1 070 (68.7)	480 (31.3)	0.7 (0.5–0.9)
Ontario	3 440 (68.0)	1 670 (32.0)	0.7 (0.6–0.9)
Quebec	2 890 (72.2)	1 190 (27.8)	0.6 (0.5–0.7)
New Brunswick	1 030 (66.2)	515 (33.8)	0.8 (0.6–0.9)
Nova Scotia	1 080 (66.9)	535 (33.1)	0.7 (0.6–0.9)
Prince Edward Island	755 (70.7)	270 (29.3)	0.6 (0.5–0.8)
Newfoundland and Labrador	1 040 (79.5)	290 (20.5)	0.4 (0.3–0.5)

Note: CI = confidence interval, OR = odds ratio.
*Unweighted numbers are rounded to a base of 5 for confidentiality purposes according to Statistics Canada data release policies. Percentages are based on weighted numbers.

partner violence was classified as having seen or heard parents, step-parents or guardians hitting each other or another adult in the home 3 or more times.[22] We also computed variables to classify any child abuse (1 or more individual types of child abuse) and a count of the number of child abuse types (ranging from 0 to 3).

Sociodemographic covariates

The sociodemographic variables included as covariates in the logistic regression models were as follows: age, sex, visible minority, Canadian born, highest level of education, past year household income, marital status and province of residence.

Mental health variables

Mental disorders

Lifetime diagnoses of several axis I disorders were made using the World Health Organization version of the Composite International Diagnostic Interview and based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition.[23,24] The specific mental disorders included depression, bipolar disorder, generalized anxiety disorder, alcohol abuse/dependence, and drug abuse/dependence (including nonmedical sedatives or tranquilizers, nonmedical analgesics, nonmedical stimulants, cannabis, cocaine, club drugs such as ecstasy or ketamine, hallucinogens, heroin or opium, inhalant or solvents, and other drugs). Respondents meeting criteria for 1 or more of these disorders were classified as having any mental disorder. Additional mental disorders were assessed using self-reports by asking the respondent if they had a long-term health condition diagnosed by a health professional that had lasted or was expected to last 6 months or longer (including obsessive–compulsive disorder, post-traumatic stress disorder, panic disorder, phobia, a learning disability, attention deficit disorder and an eating disorder). Respondents who reported any of these mental conditions were classified as having 1 or more of these conditions.

Suicidal ideation and suicide attempts

Suicidal ideation was assessed with a question that asked if the respondent ever seriously thought about committing suicide or taking his or her own life (yes or no). Suicide attempts were assessed with a question asking if the respondent had ever attempted suicide or tried to take his or her own life (yes or no).

Statistical analysis

We applied statistical weights to ensure that the estimates reflected the general Canadian popula-

tion. We used bootstrapping as a variance estimation technique to account for the complex survey design. First, we estimated the overall and then sex-specific prevalence of child abuse. Second, we determined the distribution of sociodemographic variables by any child abuse. Third, we computed logistic regression models to quantify the associations between child abuse and mental conditions. Models were first adjusted for sociodemographic variables (adjusted odds ratio [OR] 1) and then further adjusted for other types of child abuse and other interview-diagnosed mental disorders (adjusted OR 2). Fourth, logistic regression models were computed to examine the dose–response relation between the number of child abuse types and mental conditions adjusting for sociodemographic variables. Finally, we tested for interactions between sex and the different child abuse types, adjusting for sociodemographic variables, for each mental disorder and for suicidal ideation and suicide attempts. Significant models were determined with 95% confidence intervals (CIs) or $p < 0.05$.

Results

The prevalence of any of the 3 types of child abuse was 32.1%, with physical abuse being most common (26.1%), followed by sexual abuse (10.1%) and exposure to intimate partner violence (7.9%) (Table 1). Women were more likely than men to have experienced sexual abuse (14.4% v. 5.8%, $p < 0.001$) and exposure to intimate partner violence (8.9% v. 6.9%, $p < 0.001$) as children. Men were more likely than women to have experienced physical child abuse (31.0% v. 21.3%, $p < 0.001$) and any child abuse (34.0% v. 30.3%, $p < 0.001$). Table 2 reports the distribution of sociodemographic variables among respondents with and without a history of child abuse. Respondents aged 35 to 64 years were more likely than those aged 18 to 34 years to report having been abused as a child. Child abuse was less likely among respondents who were never married than among respondents who were married or in a common-law relationship. The provinces with the highest prevalence of child abuse were Manitoba (40.0%), British Columbia (35.8%) and Alberta (36.1%). The province with the lowest prevalence of child abuse was Newfoundland and Labrador (20.5%).

In the models adjusting for sociodemographic covariates, all child abuse types were associated with increased odds of all mental conditions (Tables 3 and 4). After further adjustment for other child abuse types and mental disorders, most interview-diagnosed mental disorders and several self-reported mental conditions

remained associated with physical and sexual abuse. However, obsessive–compulsive disorder remained associated only with sexual abuse.

Eating disorders remained associated with only physical abuse. Posttraumatic stress disorder and learning disability remained associated with

Table 3: Odds of interview-diagnosed mental condition from the Composite International Diagnostic Interview, by type of child abuse

| Mental condition | Physical abuse | | | | Sexual abuse | Exposure to intimate partner violence | Any child abuse |
	Slapped on face, head or ears, hit or spanked	Pushed, grabbed, shoved or something thrown at	Kicked, bit, punched, choked, burned or attacked	Any physical abuse			
Depression							
Adjusted OR1 (95% CI)	2.3 (2.0–2.7)	2.8 (2.3–3.3)	2.8 (2.4–3.3)	2.5 (2.2–2.9)	3.2 (2.7–3.7)	2.2 (1.8–2.8)	2.9 (2.5–3.3)
Adjusted OR2 (95% CI)	1.3 (1.1–1.7)	1.2 (0.9–1.6)	1.2 (1.0–1.6)	1.6 (1.4–2.0)	1.9 (1.5–2.4)	0.9 (0.6–1.2)	2.2 (1.9–2.5)
Bipolar disorder							
Adjusted OR1 (95% CI)	2.8 (2.1–3.7)	3.7 (2.8–5.0)	4.4 (3.3–5.9)	3.2 (2.5–4.2)	3.6 (2.6–4.8)	4.5 (3.2–6.3)	3.6 (2.7–4.9)
Adjusted OR2 (95% CI)	0.9 (0.5–1.4)	1.0 (0.6–1.8)	1.6 (1.0–2.4)	1.2 (0.9–1.7)	1.2 (0.8–1.8)	2.3 (1.3–4.3)	1.9 (1.3–2.7)
Generalized anxiety disorder							
Adjusted OR1 (95% CI)	2.5 (2.1–2.9)	2.9 (2.4–3.4)	3.1 (2.6–3.7)	2.5 (2.2–2.9)	2.8 (2.4–3.4)	2.4 (2.0–2.9)	2.7 (2.3–3.1)
Adjusted OR2 (95% CI)	1.4 (1.1–1.7)	1.1 (0.9–1.5)	1.4 (1.1–1.8)	1.5 (1.3–1.8)	1.5 (1.2–1.9)	1.1 (0.8–1.4)	1.8 (1.5–2.1)
Alcohol abuse/dependence							
Adjusted OR1 (95% CI)	2.4 (2.1–2.7)	2.3 (2.0–2.7)	2.2 (1.9–2.5)	2.5 (2.2–2.8)	2.5 (2.1–2.9)	2.0 (1.7–2.5)	2.5 (2.2–2.8)
Adjusted OR2 (95% CI)	1.8 (1.5–2.1)	1.0 (0.8–1.3)	1.1 (0.9–1.4)	1.9 (1.6–2.2)	1.5 (1.2–1.7)	0.9 (0.7–1.2)	2.0 (1.8–2.2)
Drug abuse/dependence							
Adjusted OR1 (95% CI)	3.3 (2.8–4.0)	3.4 (2.8–4.2)	3.2 (2.7–3.9)	3.3 (2.8–3.9)	3.8 (3.1–4.6)	3.3 (2.6–4.1)	3.4 (2.9–4.0)
Adjusted OR2 (95% CI)	1.7 (1.4–2.2)	1.1 (0.9–1.5)	1.3 (1.0–1.6)	1.8 (1.5–2.2)	1.9 (1.5–2.4)	1.4 (1.1–1.8)	2.3 (1.9–2.8)
Suicidal ideation							
Adjusted OR1 (95% CI)	3.3 (2.9–3.7)	3.7 (3.2–4.4)	4.3 (3.7–5.0)	3.5 (3.1–4.0)	4.6 (4.0–5.4)	3.8 (3.2–4.5)	4.1 (3.7–4.7)
Adjusted OR2 (95% CI)	1.6 (1.3–1.9)	1.0 (0.8–1.2)	1.6 (1.3–2.0)	1.8 (1.5–2.2)	2.3 (1.9–2.8)	1.5 (1.2–2.1)	2.9 (2.5–3.3)
Suicide attempts							
Adjusted OR1 (95% CI)	4.6 (3.5–6.0)	5.8 (4.5–7.5)	6.6 (5.2–8.5)	4.7 (3.6–6.2)	7.9 (6.1–10.1)	6.3 (4.8–8.2)	6.1 (4.6–8.0)
Adjusted OR2 (95% CI)	1.4 (1.0–2.0)	1.0 (0.7–1.4)	1.8 (1.3–2.6)	1.6 (1.1–2.3)	3.0 (2.1–4.2)	2.1 (1.4–3.2)	3.7 (2.7–5.1)
Any diagnosis from the Composite International Diagnostic Interview							
Adjusted OR1 (95% CI)	2.8 (2.5–3.1)	3.2 (2.8–3.8)	3.1 (2.7–3.6)	2.9 (2.6–3.2)	3.5 (3.1–4.1)	2.9 (2.4–3.4)	3.1 (2.8–3.4)
Adjusted OR2 (95% CI)	1.9 (1.7–2.2)	1.3 (1.0–1.6)	1.5 (1.2–1.7)	2.3 (2.1–2.6)	2.5 (2.1–3.0)	1.3 (1.0–1.6)	NA

Note: adjusted OR1 = odds ratios adjusted for age, sex, visible minority status, Canadian born status, education, income, marital status and province; adjusted OR2 (all models except for any physical abuse and child abuse) = odds ratios adjusted for sociodemographic variables listed above, other types of child maltreatment, and other diagnosed mental disorder from the Composite International Diagnostic Interview; adjusted OR2 (for any physical abuse models) = odds ratios adjusted for sociodemographic variables listed above, sexual abuse and exposure intimate partner violence, and other diagnosed mental disorder from the Composite International Diagnostic Interview; adjusted OR2 (for any child abuse models) = odds ratios adjusted for sociodemographic variables listed above and other diagnosed mental disorder from the Composite International Diagnostic Interview; CI = confidence interval; NA = not applicable.

sexual abuse and certain individual types of physical abuse. Bipolar disorder remained associated with exposure to intimate partner vio- lence and one individual type of physical abuse. All 3 types of abuse remained associated with drug abuse/dependence, suicidal ideation and

Table 4: Odds of self-reported mental conditions, by type of child abuse

| Mental condition | Physical abuse | | | | Sexual abuse | Exposure to intimate partner violence | Any child abuse |
	Slapped on face, head or ears, hit or spanked	Pushed, grabbed, shoved or something thrown at	Kicked, bit, punched, choked, burned or attacked	Any physical abuse			
Obsessive–compulsive disorder							
Adjusted OR1 (95% CI)	2.6 (1.6–4.0)	3.5 (2.2–5.4)	3.8 (2.4–5.9)	3.1 (2.0–4.9)	4.1 (2.5–6.6)	3.7 (2.3–6.0)	3.0 (1.8–4.8)
Adjusted OR2 (95% CI)	1.0 (0.6–1.6)	1.4 (0.8–2.5)	1.3 (0.7–2.6)	1.4 (0.9–2.2)	1.9 (1.2–3.0)	1.4 (0.8–2.4)	1.7 (1.0–2.9)
Panic disorder							
Adjusted OR1 (95% CI)	1.9 (1.5–2.4)	2.3 (1.8–3.0)	2.8 (2.2–3.6)	2.2 (1.7–2.7)	2.9 (2.3–3.7)	1.8 (1.3–2.3)	2.2 (1.7–2.8)
Adjusted OR2 (95% CI)	1.0 (0.7–1.4)	1.1 (0.7–1.6)	1.8 (1.2–2.5)	1.4 (1.1–1.8)	1.7 (1.2–2.2)	0.8 (0.5–1.1)	1.5 (1.2–1.9)
Posttraumatic stress disorder							
Adjusted OR1 (95% CI)	3.1 (2.1–4.5)	5.2 (3.6–7.6)	4.9 (3.3–7.1)	3.3 (2.2–4.8)	7.0 (5.1–9.7)	4.5 (3.1–6.7)	4.4 (3.0–6.3)
Adjusted OR2 (95% CI)	0.8 (0.5–1.2)	2.2 (1.4–3.3)	1.2 (0.8–1.9)	1.2 (0.8–1.8)	2.9 (2.0–4.3)	1.4 (0.9–2.2)	2.5 (1.7–3.7)
Phobias							
Adjusted OR1 (95% CI)	3.2 (2.0–5.3)	3.1 (1.7–5.8)	3.4 (1.9–6.0)	2.9 (1.8–4.6)	3.9 (2.2–6.9)	3.7 (1.9–7.2)	3.2 (2.1–5.1)
Adjusted OR2 (95% CI)	1.5 (1.0–2.4)	1.0 (0.6–1.9)	1.0 (0.6–1.7)	1.3 (0.8–2.0)	2.0 (1.1–3.5)	1.8 (1.1–3.2)	2.3 (1.5–3.6)
Attention deficit disorder							
Adjusted OR1 (95% CI)	1.7 (1.3–2.3)	2.6 (1.9–3.6)	2.7 (1.9–3.7)	2.1 (1.6–2.7)	2.9 (2.1–4.0)	1.8 (1.2–2.5)	2.2 (1.7–2.8)
Adjusted OR2 (95% CI)	0.9 (0.7–1.2)	1.7 (1.1–2.5)	1.5 (1.0–2.4)	1.5 (1.1–2.0)	1.7 (1.2–2.4)	0.8 (0.5–1.2)	1.7 (1.3–2.2)
Eating disorders							
Adjusted OR1 (95% CI)	3.7 (2.1–6.7)	3.0 (1.5–6.0)	5.2 (2.7–10.0)	4.3 (2.5–7.6)	4.1 (2.2–7.6)	3.4 (1.7–6.7)	4.7 (2.6–8.5)
Adjusted OR2 (95% CI)	1.9 (1.0–3.6)	0.5 (0.2–1.3)	2.8 (1.0–8.0)	2.3 (1.2–4.5)	1.6 (0.8–3.2)	1.1 (0.5–2.5)	3.0 (1.7–5.2)
Learning disability							
Adjusted OR1 (95% CI)	1.4 (1.1–1.8)	2.1 (1.6–2.8)	2.6 (2.0–3.4)	1.6 (1.3–2.0)	2.3 (1.7–3.1)	2.3 (1.6–3.3)	1.7 (1.3–2.1)
Adjusted OR2 (95% CI)	0.7 (0.5–0.9)	1.3 (0.9–1.9)	1.8 (1.2–2.7)	1.1 (0.8–1.4)	1.5 (1.1–2.1)	1.3 (0.9–2.1)	1.4 (1.1–1.7)
Any self-reported mental condition							
Adjusted OR1 (95% CI)	2.1 (1.7–2.4)	2.9 (2.4–3.5)	3.2 (2.6–3.9)	2.2 (1.9–2.6)	3.4 (2.8–4.1)	2.5 (2.0–3.1)	2.3 (2.0–2.7)
Adjusted OR2 (95% CI)	1.0 (0.8–1.1)	1.4 (1.1–1.8)	1.6 (1.2–2.0)	1.3 (1.1–1.5)	1.9 (1.6–2.4)	1.1 (0.9–1.4)	1.7 (1.5–2.0)

Note: adjusted OR1 = odds ratios adjusted for age, sex, visible minority status, Canadian born status, education, income, marital status and province; adjusted OR2 (all models except for any physical abuse and child abuse) = odds ratios adjusted for sociodemographic variables listed above, other types of child abuse and any diagnosed mental disorders from the Composite International Diagnostic Interview; adjusted OR2 (for any physical abuse models) = odds ratios adjusted for sociodemographic variables listed above, sexual abuse and exposure intimate partner violence, and any diagnosed mental disorders from the Composite International Diagnostic Interview; adjusted OR2 (for any child abuse models) = odds ratios adjusted for sociodemographic variables listed above and any diagnosed mental disorders from the Composite International Diagnostic Interview; CI = confidence interval.

suicide attempts. There was a general trend of increasing number of child abuse types experienced corresponding with greater odds of mental conditions, indicating a dose–response relation (Table 5).

Significant sex-related effects were only noted between attention deficit disorder and exposure to intimate partner violence (adjusted OR for the interaction term: 2.0, 95% CI 1.0–4.1) and any child abuse (adjusted OR for the interaction term: 1.8, 95% CI 1.0–3.1), with effects being greater for women. Sex-related effects were found for several child abuse types and suicidal ideation and suicide attempts, with higher prevalence noted among women in all cases (Table 6).

Table 5: Odds of mental conditions, by number of child abuse types

Mental condition	Adjusted OR (95% CI);* number of child abuse types			
	No abuse	1 type	2 types	3 types
Interview-diagnosed mental disorders				
Depression	1.0	2.6[a] (2.2–3.0)	3.2[a] (2.6–4.0)	5.3[b] (3.9–7.0)
Bipolar	1.0	2.3[a] (1.6–3.2)	6.2[b] (4.1–9.3)	8.0[b] (5.1–12.6)
Generalized anxiety disorder	1.0	2.2[a] (1.8–2.6)	3.0[b] (2.5–3.7)	5.9[c] (4.4–7.9)
Alcohol abuse/dependence	1.0	2.2[a] (1.9–2.5)	3.1[b] (2.6–3.7)	4.5[c] (3.3–6.2)
Drug abuse/dependence	1.0	2.6[a] (2.2–3.1)	4.7[b] (3.6–6.0)	10.8[c] (7.8–15.0)
Any mental disorder	1.0	2.6[a] (2.3–2.9)	4.0[b] (3.3–4.7)	8.3[c] (6.2–11.0)
Suicide				
Suicidal ideation	1.0	3.2[a] (2.7–3.7)	5.0[b] (4.1–6.0)	13.8[c] (10.4–18.2)
Suicide attempts	1.0	3.4[a] (2.4–4.8)	7.5[b] (5.5–10.3)	27.2[c] (18.2–40.6)
Self-reported mental conditions				
Obsessive–compulsive disorder	1.0	1.6[a] (0.9–2.8)	4.5[b] (2.5–8.2)	8.9[b] (4.3–18.2)
Panic disorder	1.0	1.8[a] (1.3–2.3)	2.5[b] (1.8–3.4)	4.4[c] (3.1–6.3)
Posttraumatic stress disorder	1.0	2.5[a] (1.5–4.1)	5.2[b] (3.3–8.1)	16.6[c] (9.8–28.2)
Phobias	1.0	2.2[a] (1.3–3.6)	3.0[a] (1.7–5.2)	9.9[b] (4.0–24.6)
Attention-deficit disorder	1.0	1.9[a] (1.4–2.5)	2.5[a,b] (1.8–3.5)	4.0[b] (2.3–6.9)
Eating disorders	1.0	3.6[a] (1.7–7.5)	4.7[a,b] (2.1–10.6)	10.8[b] (4.3–27.1)
Learning disability	1.0	1.2[a] (0.9–1.5)	2.5[b] (1.7–3.6)	3.2[b] (2.0–5.1)
Any self-reported mental disorder	1.0	1.7[a] (1.4–2.0)	2.8[b] (2.3–3.5)	6.8[c] (4.8–9.7)

Note: adjusted OR = odds ratios adjusted for age, sex, visible minority status, Canadian-born status, education, income, marital status and province; CI = confidence interval.
*Adjusted ORs with different superscripts differ significantly at $p < 0.05$.

Table 6: Interaction terms between sex and type of abuse for associations with suicidal ideation and suicide attempts

Type of abuse	Adjusted OR (95% CI), interaction terms*	
	Suicidal ideation	Suicide attempts
Physical abuse		
Slapped on face, head or ears, hit or spanked	1.5 (1.1–1.9)	1.7 (1.0–2.7)
Pushed, grabbed, shoved or something thrown at	1.3 (0.98–1.8)	2.0 (1.3–4.0)
Kicked, bit, punched, choked, burned or attacked	1.7 (1.2–3.3)	2.0 (1.2–3.2)
Any physical abuse	1.5 (1.1–1.9)	1.7 (1.0–2.9)
Sexual abuse	1.3 (0.9–1.8)	1.5 (0.9–2.6)
Exposure to intimate partner violence	1.0 (0.7–1.5)	1.2 (0.6–2.1)
Any child abuse	1.6 (1.2–2.0)	1.8 (1.0–3.1)

Note: adjusted OR = odds ratios adjusted for age, visible minority status, Canadian-born status, education, income, marital status and province; CI = confidence interval.
*For significant interaction terms, effects were stronger for women than men.

Interpretation

We found strong associations between child abuse and mental conditions. In Canada, 32% of the adult population has experienced physical abuse, sexual abuse and/or exposure to intimate partner violence in childhood. All 3 types of child abuse were associated with all types of interview-diagnosed mental disorders, self-reported mental conditions, suicidal ideation and suicide attempts in models adjusting for sociodemographic variables. These models indicate that the relation between all 3 types of child abuse and mental conditions are robust. The strongest findings were for drug abuse/dependence, suicidal ideation and suicide attempts, with all 3 types of child abuse remaining significantly associated with these outcomes in the most adjusted models. For other mental conditions in the most adjusted models adjusting for co-occurring types of child abuse and comorbid mental disorders, specific associations were noted between certain types of child abuse and certain mental health disorders. We found a dose–response relation, with a trend of more types of child abuse corresponding with greater odds of mental conditions. Associations of some child abuse types with suicidal ideation and suicide attempts were stronger among women than men.

Although measurement and assessment of child abuse across studies are not directly comparable, the prevalence of child abuse in Canada reported in this study is similar to findings from national surveys from the United States and provincial findings from Ontario and Quebec.[2–5,7,11] The current findings are also consistent with previous studies that found robust relations with specific types of child abuse and mental conditions, including suicidal ideation and suicide attempts.[5–7,10,13,16,18,19] What the current study adds is the assessment of a greater number of child abuse types along with more mental conditions in one study. Importantly, the least severe type of physical abuse (being slapped on the face, head or ears, or hit or spanked with something hard) showed a strong association with all mental conditions in models adjusting for sociodemographic covariates.

Strengths and limitations

Strengths of the study include: the data are current and nationally representative at the provincial level in Canada, the large sample allowed for several sophisticated and high-powered models to be conducted, and several types of child abuse and mental conditions were assessed.

However, the data from this study are cross-sectional and retrospective in nature. Inferences regarding causation cannot be made, and underlying mechanisms in the relation are not clear from these data. It may be that for some people a direct relation does exist between child abuse and mental disorders. It may also be the case that behavioural issues for some children could be associated with mental disorders and that behavioural problems could increase the likelihood of child abuse. Longitudinal data are necessary to clarify the possible underlying mechanisms in the association between child abuse and mental disorders. With regard to the retrospective nature of the data, there is debate about accurate recall of traumatic memories. Recall of sexual abuse in particular is controversial. However, evidence suggests that retrospective recall of adverse childhood events provides valid and reliable survey data.[25–27]

Three of the major types of child maltreatment were assessed, but measures of neglect and emotional abuse were not included in the survey. Canadian data on these additional types of child maltreatment are needed.

Although several mental conditions were assessed in the survey, many important disorders (e.g., personality disorders) were not included, and several disorders were assessed using self-reported diagnoses. Self-reported data to determine prevalence of mental conditions has been used in other studies;[28] it is considered a reliable approach for assessment in community samples,[29] albeit with limitations. The self-reported mental conditions included here are considered to be less biased because they were based on self-reported diagnosis by a health professional.

Conclusion

Our findings indicate that 32% of the adult population in Canada has experienced child abuse (i.e., physical abuse, sexual abuse and/or exposure to intimate partner violence) and that child abuse has robust associations with mental conditions. Child abuse is an important public health problem globally, including in Canada. All health care providers should be aware of the relation between specific types of child abuse and certain mental conditions. Clinicians working in the mental health field should be skilled in assessing patients for exposure to abuse and should understand the implications for treatment. In addition, all clinicians need to be familiar with the mandatory reporting requirements for their province or territory. From a public health standpoint, these findings highlight the urgent need to make prevention of child abuse a priority in Canada. Success in preventing child abuse could lead to reductions in the prevalence of mental disorders.

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