Child 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, \(n = 9953, \text{age } \geq 15 \text{ yr}\)) and 1 from 2000–2001 (Ontario Child Health Study, \(n = 1893, \text{age } 21–35 \text{ yr}\)). 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).
ideaion and suicide attempts\(^6\text{-}8,10\text{-}19\) 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
ideaion and suicide attempts. The specific
research objectives were to estimate the preva-
lence 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 Com-
munity Health Survey was a cross-sectional study
that used a multistage stratified cluster sam-
ping design: it included a representative sam-
ple 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 inter-
viewers 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 Vio-
ence 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 occur-
rence (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 Vio-
ence Questionnaire as follows. Physical abuse
was classified as 1 or more of the following
3 criteria: 1) being slapped on the face, head or

| Variable | Whole sample | Men | Women | p value\(^†\) |
|----------|--------------|-----|-------|-------------|
| 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 | Whole sample | Men | Women | p value\(^†\) |
|-----------------------------|--------------|-----|-------|-------------|
| 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.

\(†\)\(\chi^2\) 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 classified as experiencing attempts or being forced into unwanted sexual activity by being threatened, held down or hurt in some way, and/or sexually touched meaning unwanted touching or grabbing, kissing or fondling against the respondent’s will 1 or more times. Exposure to intimate

### Table 2: Sociodemographic variables by child abuse in Canada

| Variable                              | No. (%)* | Child abuse  | OR (95% CI) |
|---------------------------------------|----------|--------------|-------------|
|                                       | No chld abuje | Chld abuse  |             |
| **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                |          |              |             |
| high school diploma                  | 2 880 (70.9) | 1 225 (29.1) | 1.0         |
| Some postsecondary education          |          |              |             |
| 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                              |          |              |             |
| 30 000–49 999                         |          |              |             |
| ≥ 80 000                              |          |              |             |
| **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                                    |          |              |             |
| Yes                                   | 13 225 (67.3) | 6 360 (32.7) | 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. 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. The specific mental disorders included depression, bipolar disorder, generalized anxiety disorder, alcohol abuse/dependence, and drug abuse/dependence (including nonmedical sedatives or tranquillizers, nonmedical analesics, 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 population. 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** | **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 | Sexual 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 violence 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** | **Exposure to intimate partner violence** | **Any child abuse** |
| Slapped on face, head or ears, hit or spanked | Adjusted OR1 (95% CI) = 2.6 (1.6–4.0) | Adjusted OR2 (95% CI) = 1.0 (0.6–1.6) | 4.1 (2.5–6.6) | 3.7 (2.3–6.0) | 3.0 (1.8–4.8) |
| Pushed, grabbed, shoved or something thrown at | Adjusted OR1 (95% CI) = 3.5 (2.2–5.4) | Adjusted OR2 (95% CI) = 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) |
| Kicked, bit, punched, choked, burned or attacked | Adjusted OR1 (95% CI) = 3.8 (2.4–5.9) | Adjusted OR2 (95% CI) = 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) |
| Any physical abuse | Adjusted OR1 (95% CI) = 3.1 (2.0–4.9) | Adjusted OR2 (95% CI) = 1.4 (0.9–2.2) | 1.9 (1.2–3.0) | 1.4 (0.8–2.4) | 1.7 (1.0–2.9) |
| Sexual abuse | Adjusted OR1 (95% CI) = 4.1 (2.5–6.6) | Adjusted OR2 (95% CI) = 1.4 (0.8–2.4) | 1.9 (1.2–3.0) | 1.4 (0.8–2.4) | 1.7 (1.0–2.9) |
| Exposure to intimate partner violence | Adjusted OR1 (95% CI) = 3.7 (2.3–6.0) | Adjusted OR2 (95% CI) = 1.7 (1.0–2.9) | 1.4 (0.8–2.4) | 1.7 (1.0–2.9) |
| Any child abuse | Adjusted OR1 (95% CI) = 3.0 (1.8–4.8) | Adjusted OR2 (95% CI) = 1.7 (1.0–2.9) | 1.4 (0.8–2.4) | 1.7 (1.0–2.9) |

**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 child 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; 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      | 2.6a   | 3.2a    | 5.3b    |
| Bipolar                                       | 1.0      | 2.3a   | 6.2b    | 8.0b    |
| Generalized anxiety disorder                  | 1.0      | 2.2a   | 3.0b    | 5.9f    |
| Alcohol abuse/dependence                      | 1.0      | 2.2a   | 3.1a    | 4.5f    |
| Drug abuse/dependence                         | 1.0      | 2.6b   | 4.7b    | 10.8b   |
| Any mental disorder                           | 1.0      | 2.6b   | 4.0b    | 8.3f    |
| **Suicide**                                   |          |        |         |         |
| Suicidal ideation                             | 1.0      | 3.2a   | 5.0b    | 13.8f   |
| Suicide attempts                              | 1.0      | 3.4a   | 7.5b    | 27.2f   |
| **Self-reported mental conditions**           |          |        |         |         |
| Obsessive–compulsive disorder                 | 1.0      | 1.6a   | 4.5b    | 8.9f    |
| Panic disorder                                | 1.0      | 1.8a   | 2.5b    | 4.4f    |
| Posttraumatic stress disorder                 | 1.0      | 2.5a   | 5.2b    | 16.6f   |
| Phobias                                       | 1.0      | 2.2a   | 3.0a    | 9.9f    |
| Attention-deficit disorder                    | 1.0      | 1.9a   | 2.5a,b  | 4.0f    |
| Eating disorders                              | 1.0      | 3.6a   | 4.7a,b  | 10.8f   |
| Learning disability                           | 1.0      | 1.2a   | 2.5b    | 3.2a    |
| Any self-reported mental disorder             | 1.0      | 1.7a   | 2.8a    | 6.8f    |

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.20–27

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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Affiliations: Departments of Community Health Sciences (Afifi, Sareen), Psychiatry (Afifi, Sareen), Family Social Sciences (Afifi), Applied Health Sciences (Taillieu), Psychology (Cheung, Sareen), University of Manitoba, Winnipeg, Man.; Department of Psychiatry and Behavioural Neurosciences (MacMillan, Boyle), Department of Pediatrics (MacMillan), McMaster University, Hamilton, Ont.

Contributors: Tracie Afifi developed the research questions, designed and supervised the statistical analysis, interpreted the findings and wrote sections of the manuscript. Harriet MacMillan and Michael Boyle assisted with the development of the research questions, interpreted the findings and wrote sections of the manuscript. Tamara Taillieu and Kristene Cheung developed the research questions, designed and conducted the statistical analysis, and revised the manuscript. Jitender Sareen developed the research questions, designed the statistical analysis, interpreted the findings and revised the manuscript. All of the authors approved the final version submitted for publication.

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