Inequities in adverse childhood experiences in Ontario: A descriptive analysis of the Canadian Longitudinal Study on Aging and the General Social Survey

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About the General Social Survey

Data from the 2019 General Social Survey were provided by Statistics Canada and accessed through the University of Toronto Research Data Centre as part of the Canadian Research Data Centre Network (CRDCN). This service is provided through the support of Canada Foundation for Innovation, Canadian Institutes of Health Research (CIHR), Social Sciences and Humanities Research Council and Statistics Canada, through the support of the University of Toronto. Due to the confidential nature of the data, they are only available to researchers who meet the criteria for microdata access as outlined by the CRDCN. The views expressed here are those of the authors.

About the Canadian Longitudinal Study on Aging

This study used data collected by the Canadian Longitudinal Study on Aging (CLSA). Funding for the CLSA is provided by the Government of Canada through the CIHR under grant reference: LSA 94473 and the Canada Foundation for Innovation, as well as the following provinces: Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Alberta and British Columbia. This research has been conducted using the following CLSA datasets: Baseline Tracking Dataset version 4.0, Baseline Comprehensive Dataset version 7.1, Baseline Sample Weights version 1.2, Follow-up 1 Tracking Dataset version 3.1, Follow-up 1 Comprehensive Dataset version 5.0, Follow-up 1 Sample Weights version 1.0, under Application Number 2407017. The CLSA is led by Drs. Parminder Raina, Christina Wolfson and Susan Kirkland. Data are available from the CLSA (www.clsa-elcv.ca) for researchers who meet the criteria for access to de-identified CLSA data. The opinions expressed in this manuscript are the author's own and do not reflect the views of the Canadian Longitudinal Study on Aging.

Acknowledgement of Traditional Land

We wish to acknowledge this land on which Wellesley Institute operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

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Introduction

Adverse childhood experiences (ACEs) are traumatic and stressful events that occur from birth up to adolescence[1]. People who experience ACEs are more likely to develop certain chronic health conditions[2]. ACEs have also been associated with negative social outcomes in adulthood[2,3]. The risk of poorer health or social outcomes increases with the number of ACEs[4].

ACEs are typically categorized into five subtypes: physical abuse, sexual abuse, emotional abuse, neglect, and household dysfunction (including exposure to household violence, parental separation or divorce, parental death, and mental illness in the household)[4]. However, definitions of ACEs and the way their subtypes are classified varies across the literature[2]. Exposure to abuse and household violence are frequently studied but other ACEs, like death of a parent, are less commonly included.

Ontario has some of the highest rates of adverse child experiences in Canada, yet there is a gap in understanding their distribution across sociodemographic, health and social factors.

In Canada, research on the relationship between ACEs and health and social outcomes remains limited, particularly in examining the full spectrum of ACE subtypes[5]. Literature that is available has reported that the percentage of the population who have ACEs in Canada ranges from one third to over 60 per cent, depending on the sample[6-9]. However, ACEs were not evenly distributed across the population. For instance, females were three times more likely than males to have experienced sexual abuse. Also, ACEs were more common among equity-deserving groups, such as sexual minorities, those with lower income levels and those with less education[6-9]. These studies also found that ACEs were linked to a range of negative physical and mental health outcomes.

Ontario has some of the highest rates of ACEs in the country[6], yet there is a key gap in understanding the distribution of ACEs across sociodemographic, health and social factors.

While prior national and international research frames ACEs from a deficit-based perspective (i.e., examining ACEs as an individual-level risk factor for poor outcomes), the current study aims to understand how these outcomes are shaped by the intersection of ACEs and the wider social and structural determinants of health. Using two national surveys, this research builds on existing literature to provide a comprehensive overview of the ACEs profile in Ontario and how exposure to ACEs varies across diverse populations, including equity-deserving groups and those experiencing negative health and social outcomes. The unique contribution of this study is its investigation into which populations have experienced a greater burden of ACEs and how their specific experiences

of ACEs differ. This can provide insights into how groups with disproportionate experiences of ACEs can be better supported and can inform where policy responses should be focused in relation to prevention, mitigation and long-term support.

The study questions are:

1. What is the prevalence of ACEs overall and by subtype in Ontario?

2. How do experiences of ACEs differ by sociodemographic characteristics and by health and social factors?

Methods

Data sources

This study was a secondary analysis of Ontario respondents in two Canadian datasets.

The first was Statistics Canada's 2019 General Social Survey (GSS)[10]. This is a nationally representative, cross-sectional survey of the Canadian population aged 15 and older that is designed to monitor changes in the well-being of Canadians and provide insights into specific social policy issues that are of current or emerging interest. The 2019 survey focused on Canadian's safety and included a series of questions on exposure to ACEs. The sample of Ontario respondents used in the current analysis was n=4,550.

The second was the Canadian Longitudinal Study on Aging (CLSA). This is a population-based longitudinal study on health and aging that is following a stratified sample of 51,338 Canadians aged 45-85 at baseline[11]. To date, the CLSA has had three follow-ups. The current study uses cross-sectional data from both the Tracking and Comprehensive samples at baseline (collected from 2011-2015) to gather sociodemographic information (that was not included in follow-up one), as well as follow-up one (collected from 2015-2018), to examine exposure to ACEs. The sample of Ontario respondents used in the current analysis was n=9,831.

Further details about the data sources can be found in Supplement 1.

Defining ACEs

For both datasets, exposure to ACEs was assessed through adapted versions of the Childhood Experience of Violence Questionnaire (CEVQ) that examined the frequency and severity of exposure to physical abuse, sexual abuse, emotional abuse, neglect and parental violence during childhood[12]. The exposure threshold for each abuse type based on CEVQ criteria is presented in Table 1. A composite variable was created, whereby individuals were classified as having been exposed to ACEs if they met the criteria for at least one of the above types[12].

In addition to the five abuse types described above, the CLSA included three other items on household dysfunction that were not present in the GSS. These included dichotomous measures of parental divorce or separation, parental death, and household mental illness. As these variables were missing from the GSS and are not consistently examined in the literature[2], they were not included in the present study. This facilitated easier comparison between the GSS and CLSA findings and the wider evidence base.

Further information about the way that ACEs were defined in this study, including the questions used to assess ACEs in each survey, can be found in Supplement 2.

Table 1. Criteria for categorizing ACEs exposure

ACE type	Criteria
Physical abuse	• Slapped in the face, head or ears three or more times • Pushed, grabbed, shoved three or more times • Kicked, punched, choked, burned or physically attacked one or more times
Sexual abuse	• Threatened, touched or forced into unwanted sexual activity one or more times
Emotional abuse	• Swearing, saying hurtful things, or feeling unwanted three or more times
Neglect	• Basic needs (food, shelter) not met one or more times
Parental violence	• Parents say hurtful things to each other six or more times • Parents hit each other or another adult three or more times

Variables

Sociodemographic characteristics included age group, sex, sexual orientation, marital status, living arrangements, education, racial or ethnic group, birthplace and family/household income. The CLSA also included a variable on household wealth and the GSS included variables to identify whether someone lived with a disability. Where possible, variables were coded in the same format across datasets to facilitate comparisons. Details of how each variable was defined and coded for each dataset can be found in Supplement 3.

Health and social variables in this study were selected based on criteria commonly used in health surveillance research[13]. Variables were chosen for their relevance to examining equity impacts of ACEs, their inclusion in existing guidance documents (e.g., Ontario Health's Core list for equity analytics[14]), and their potential to show sociodemographic, health and social disparities that are actionable and can inform policy and future research. In addition to this core list, variables related to relationships and living arrangements were included because social support is important in relation to ACEs both in terms of being a risk and protective factor[15,16].

Indicators were also well-established in the evidence-base and, where possible, collected used standardized tools and scoring methods. Some indicators were not included due to data quality issues, including low counts (e.g., transgender identity, and disaggregated language, racial and ethnic groups), which limited meaningful analysis. Finally, where possible, variables were selected that could be harmonized across the GSS and the CLSA to facilitate comparison between different populations (adults vs. older adults) and survey methodologies. A brief description for the variables used in each dataset is provided below, while details on how each variable was defined and coded is provided in Supplements 4-5.

For the GSS, variables included self-rated general and mental health, as well as a variety of indicators related to revictimization. These included experiences of crime, cyberbullying, discrimination, abuse by an intimate partner and abuse by a friend or family member.

For the CLSA, variables included self-rated general and mental health, depression, chronic physical and mental health conditions, chronic pain, functional impairments, unmet healthcare needs, loneliness, social support and experiences of elder abuse.

Analysis

For each dataset, weighted descriptive statistics were generated to obtain the sociodemographic and health characteristics of each sample and compute estimates for ACE exposure (overall and by subtype). Cross-tabulations were then created to examine the experiences of ACEs by the sociodemographic, health and social variables.

For the GSS, analysis was carried out at the University of Toronto Research Data Centre (RDC) using the microdata file. Sampling weights and bootstrap weights provided by Statistics Canada were used to account for the survey's complex sampling design and facilitate representative population estimates. The generalized bootstrap method was used to robustly estimate sampling variability.

For the CLSA, the provided inflation weights were used, which are weighted to the population and account for its stratified, multi-stage survey design. Taylor series linearization was used to estimate variance, and geographical strata were incorporated to improve variance estimates.

The "survey" package[17] in R Studio[18] was used for the analysis of both datasets to compute weighted percentages, 95 per cent confidence intervals and coefficients of variance (CVs). CVs were calculated to assess sampling variability and the quality of the estimates[19]. Any estimates categorized as marginal ($0.15 \leq CV < 0.35$) have been highlighted, and any unacceptable CVs (>0.35) were removed due to low precision. Further information on data quality, including the handling of missing data can be found in Supplement 6.

Non-overlapping 95 per cent confidence intervals were considered an indication of statistically significant differences between groups. The results section reports any significant differences between groups – defined by sociodemographic, health or social characteristics – in terms of their exposure to any ACE and ACE subtypes.

Analysis of the GSS was exempt from research ethics board review, as it relies exclusively on publicly available information through a mechanism set out by existing legislation and regulation. Analysis of the CLSA data was approved by the Toronto Metropolitan University Research Ethics Board (REB #2024-291).

Results

Sample characteristics

Sociodemographic characteristics for the GSS and CLSA samples are provided in Supplement 7 (Table 3). In addition, the descriptive statistics for each health and social variable for the GSS and the CLSA used in this analysis are presented in Supplement 7 (Tables 4-5).

The GSS sample included 4,550 respondents from Ontario. The sample had a balanced age distribution. The largest age group was 25 to 34 (17.3%) while the smallest was older adults aged 75 or older (8.4%). There was also a near equal representation of males (49%) and females (51%). One-third of respondents reported a disability.

Most GSS respondents identified as heterosexual (96%), with 4 per cent reporting as gay, lesbian, bisexual or other sexual orientation. The majority (59.2%) were also married or in common-law relationships or were single and never married (28.6%). A subset (11.7%) lived alone.

Education levels varied, with 53 per cent having earned a trade certificate, college diploma or bachelor's degree. Only 12 per cent had more than a bachelor's degree. There was a large distribution of household income, with 46.8 per cent earning more than $100,000 per year. The remaining earned less, including 5.3 per cent with household incomes under $20,000 per year.

Nearly two-thirds of respondents were born in Canada, while 36.3 per cent were born in other countries. One-third self-identified as racialized, with respondents identifying as East Asian (9.5%), South Asian (8.8%), Southeast Asian (4.5%), Black (3.6%), Middle Eastern (2.3%) or another racial/ethnic group (3.3%).

The CLSA sample included 9,831 respondents from Ontario, with one-quarter in the youngest age bracket (45-54) and 15.6 per cent in the oldest (aged 75 or older). There were slightly more females (52.3%) than males (47.7%).

The sample was predominately heterosexual (97.6%) and married or in a common-law relationship (75.7%). Only 15.9 per cent lived alone. CLSA respondents were also highly educated, with 69.6 per cent having earned a trade certificate, college diploma or bachelor's degree, and 13.2 per cent earning more than a bachelor's degree. There was also a large distribution of household income, with 38.4 per cent earning more than $100,000 per year. Only 4.4 per cent had household incomes under $20,000. Household wealth also varied, with 51.7 per cent having total savings and investments worth $100,000 to $999,999, 9.6 per cent had $1 million or more, while one-quarter had less than $50,000.

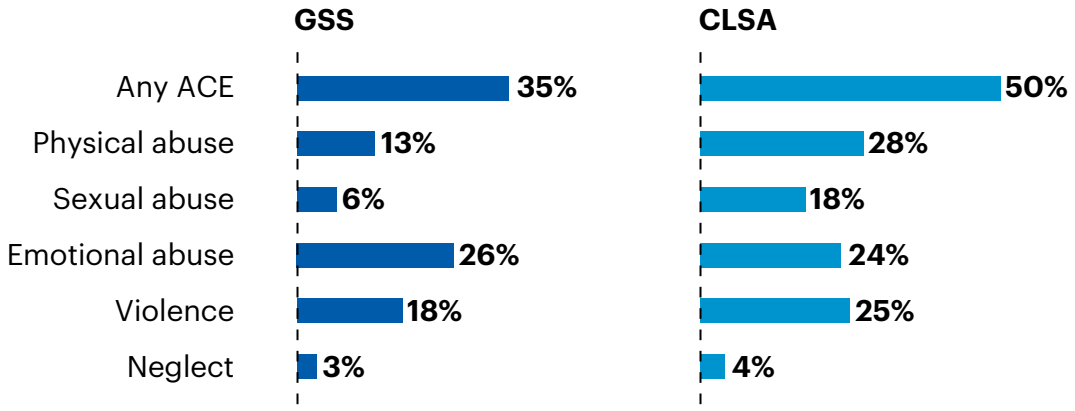
Most CLSA respondents were born in Canada (80.2%) and did not identify as racialized (93.7%). Due to the small sample size of racialized respondents, it was not possible to conduct analyses disaggregated by racial or ethnic group.

Prevalence of ACES in Ontario

The percentage of individuals reporting any ACE was 35 per cent in the GSS and 50 per cent in the CLSA (see Figure 1). For percentages and 95 per cent confidence intervals for Any ACE and ACE subtypes, see Supplement 7 (Table 6). Across both datasets, neglect was the least common, and emotional abuse was reported for one-quarter of respondents. The other abuse subtypes showed large variations between the two datasets, with the CLSA sample reporting higher prevalences than those reported in the GSS.

In the GSS, additional questions were asked about the location of the most severe incident of physical abuse and sexual abuse. For physical abuse, most reported that it occurred in or around the family home, vehicle or vacation property (85%). For sexual abuse, abuse more commonly occurred at other locations (57%), such as the offender's home or other property, at another private residence, at school, or in a public/commercial space such as a park, shopping centre or restaurant.

Figure 1. Prevalence of ACE in Ontario



ACEs and sociodemographic characteristics

Table 2 presents the prevalence of ACEs within different sociodemographic groups by dataset. Results broken down by ACE subtypes are presented in Supplement 7 (Tables 8-9). Across all sociodemographic groups, exposure to ACEs was higher in the CLSA sample as compared to the GSS sample.

Sex: In both datasets, there was higher reported exposure to ACEs in females compared to males. In terms of differences by ACE subtypes, the GSS showed that females reported higher exposure to both sexual abuse (9.0% vs. 2.9%) and emotional abuse (29.2% vs. 21.6%). In the CLSA, physical abuse was higher in males (31.0%) compared to females (24.8%), but the opposite was true for sexual abuse (27.1% in women vs. 7.8% in men), emotional abuse (27.0% vs. 20.5%) and parental violence (27.3% vs. 21.9%).

Age: Overall ACEs were lower in people aged 75 and older compared to younger age groups, and this was consistent across both datasets. In the GSS, people aged 65 or older reported lower rates of emotional abuse (20.3%) compared to those aged 15-34 (27.4%) and 35 to 64 (26.4%). However, there was higher sexual abuse in those 65 and over compared to those aged 15-34 (8.0% vs. 2.8%). Though, the latter should be interpreted with caution due to high sampling variability. In the CLSA, the oldest age band (aged 75+) reported lower physical abuse (19.8%) compared to all other age bands (ranging from 27.2% to 33.9%). Likewise for emotional abuse, which was 11.2 per cent amongst those age 75 and over, compared to younger age groups (ranging from 23.7-30.5%), and violence was 15.4 per cent for the oldest age group, compared to younger adults (22.7-31.0%).

Sexual orientation: The percentage of individuals identifying as lesbian, gay, bisexual or another sexual orientation who reported any ACE (66.7%) was almost double that of heterosexual individuals (34.2%) in the GSS. Emotional abuse was higher in the sexual minority group (51.8%), compared to their heterosexual counterparts (24.5%). Exposure to household violence was also higher among lesbian, gay or bisexual respondents (34.7% vs. 17.0%). In the CLSA, prevalence of ACEs did not differ by sexual orientation, and small sample sizes prevented any further analysis of differences by ACE subtypes.

Relationships: In the GSS, there were higher reported ACEs in separated or divorced individuals (45.1%) compared to those who were married or in common-law partnerships (33.0%). This trend was found for all abuse subtypes except for neglect, where no differences were found. Similar findings were reported in the CLSA, whereby those who were separated or divorced (57.6%) had higher reported ACEs than those who had a spouse (48.2%). There was also a trend for those who were single (never married) to have higher reported ACEs (57.9%). In the subtype analysis, those who were single had higher exposure to emotional abuse (34.6%) and parental violence (33.4%) compared to those with a spouse (23.0% for each abuse type).

Living arrangements: Exposure to ACEs also differed by living arrangements in the GSS, whereby those who lived alone had higher prevalence of ACEs (42.3%) than those who live with others (34.3%). This was true for all five abuse subtypes in the GSS. In the CLSA, on the other hand, no such differences were found.

Racialization and place of birth: In the GSS, reported ACEs were higher in Canadian-born individuals (40.1%) compared to people born outside Canada (27.4%). This trend was observed for physical, sexual and emotional abuse, as well as exposure to parental violence, but not neglect. The proportion of people reporting ACEs was also higher among non-racialized individuals (39.5%) compared to racialized people (26.5%). In disaggregated racialized groups, reported ACEs were higher for non-racialized individuals (39.5%) compared to East Asian (29.0%), Middle Eastern (15.9%), South Asian (25.9%) and Southeast Asian groups (25.1%), but not Black (29.5%) or other racialized groups (27.1%).[1] No differences by either birthplace or racial group were observed in the CLSA, and sample sizes were not sufficient to look at differences by disaggregated racial and ethnic groups.

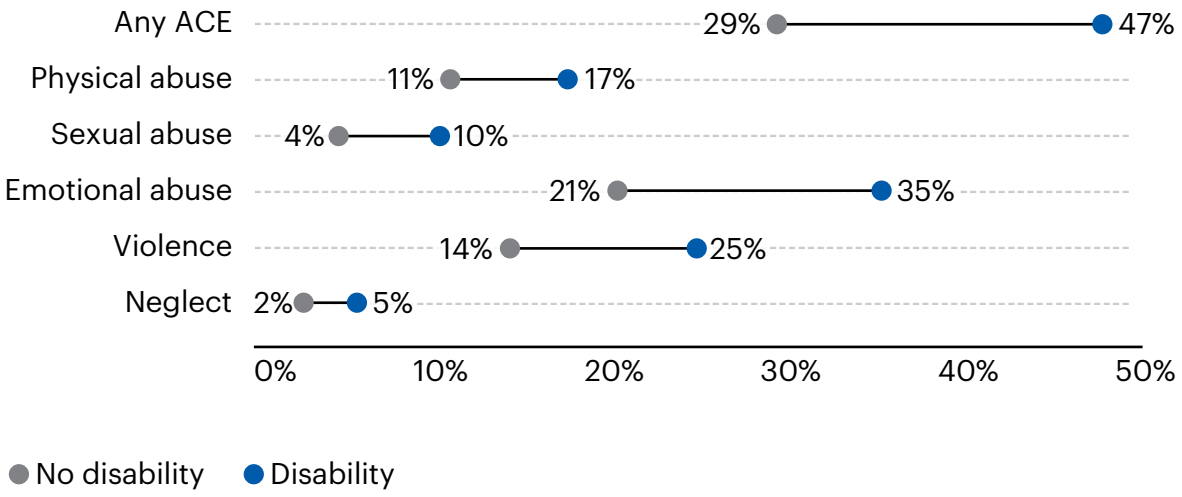
Education and income: In the GSS, there was no evidence of differences in reported ACEs by education or income levels. There were also no differences by education in the CLSA dataset, but prevalence of ACEs did differ by income levels and wealth. Those with household incomes less than $20,000 had higher reported ACEs (68.5%) compared to all other income groups (ranging from 44.0-51.1%), which did not differ from each other. Similarly, those with the lowest household wealth (i.e., less than $50,000; 59.3%) had higher reported ACEs than those with wealth greater than $100,000 (47.4%) and greater than $1 million (41.1%). These patterns generally held true for physical, emotional and sexual abuse and violence.

Disability: In the GSS, strong relationships were found between disability status and experiences of ACEs, whereby a markedly higher percentage of individuals with a disability reported having experienced an ACE compared to people without a disability (47.3% versus 29.0%) (see Figure 2). There were also differences by disability type, with the largest disparity in exposure to ACEs being observed in individuals with a mental health-related disability (55.4%) compared to those without (31.8%). There were also differences in ACES in people with a physical disability (47.7% vs. 32.0%), sensory disability (45.6% vs. 34.5%) and cognitive disability (49.1% vs. 34.4%).

Within people with a disability, there were no differences in reported ACEs between people who reported one disability type, two or three disability types, or more than three disability types. There were also no differences in reported ACEs based on disability severity – individuals with mild or moderate disabilities did not differ from those with severe disabilities.

[1] Differences in reported ACEs by specific racialized groups should be interpreted with caution due to high sampling variability.

Figure 2. Prevalence of ACEs is **higher** among individuals with **at least one disability**



All comparisons were statistically significant, with non-overlapping 95% confidence intervals.

Table 2. Prevalence of ACEs (95% CI) by sociodemographic characteristics

Characteristics	Level	GSS	CLSA
Sex	Male	31.7 (29.1-34.3)	45.1 (42.1-48.2)
	Female	38.7 (35.8-41.5)	54.0 (51.1-56.9)
Age	15-24	35.1 (27.8-42.4)	---
	25-34	35.1 (29.6-40.5)	---
	35-44	36.5 (32.0-41.1)	---
	45-54	37.5 (33.1-41.9)	56.2 (51.2-61.3)
	55-64	33.7 (30.1-37.3)	49.9 (46.4-53.4)
	65-74	39.0 (34.7-43.2)	49.3 (45.4-53.1)
	75 years and older	26.9 (22.2-31.6)	40.5 (36.1-44.9)
Sexual orientation	Heterosexual	34.2 (32.2-36.3)	50.0 (47.8-52.1)
	Lesbian/gay/bisexual/other	66.7 (55.9-77.5)	51.4 (38.4-64.3)
Marital status	Married/common law	33.0 (30.7-35.2)	48.2 (45.7-50.6)
	Divorced/separated	45.1 (39.8-50.4)	57.6 (51.3-63.9)
	Widowed	32.4 (25.9-38.9)	50.4 (43.1-57.8)
	Single, never married	38.0 (33.1-42.9)	57.9 (49.7-66.2)
Education	More than bachelor's degree	34.5 (29.6-39.5)	45.6 (41.6-49.7)
	Trade, college or bachelor's degree	36.6 (33.8-39.4)	48.8 (46.2-51.5)
	High school only	35.7 (31.6-39.7)	53.5 (47.7-59.4)
	Less than high school	31.0 (24.5-37.5)	---
Living arrangements	Lives alone	42.3 (38.4-46.1)	54.4 (49.9-58.9)
	Lives with others	34.3 (32.1-36.6)	48.9 (46.6-51.3)
Birthplace	Born in Canada	40.1 (37.6-42.7)	48.8 (46.5-51.1)
	Born outside Canada	27.4 (24.3-30.5)	53.9 (49.1-58.7)
Racial group	Non-racialized	39.5 (37.2-41.7)	49.4 (47.2-51.6)
	Racialized	26.5 (22.9-30.2)	55.8 (47.5-64.0)
Family Income	Less than $20,000	41.5 (31.9-51.0)	---
	$20,000 to $39,999	38.3 (32.6-44.0)	---
	$40,000 to $59,999	37.3 (31.7-43.0)	---
	$60,000 to $79,999	32.6 (27.1-38.0)	---
	$80,000 to $99,999	34.8 (29.5-40.1)	---
	$100,000 to $119,999	36.5 (30.8-42.3)	---
	$120,000 to $139,999	36.2 (29.6-42.8)	---
	$140,000 or more	32.7 (29.1-36.2)	---

Characteristics	Level	GSS	CLSA
Household income	Less than $20,000	---	68.5 (57.2-79.9)
	$20,000 - $49,999	---	51.1 (46.3-55.8)
	$50,000 - $99,999	---	50.2 (46.5-53.9)
	$100,000-$149,999	---	50.0 (45.2-54.7)
	$150,000 or more	---	44.0 (39.3-48.7)
Household wealth	Less than $50,000	---	59.3 (54.3-64.4)
	$50,000 - $99,999	---	53.5 (47.8-59.2)
	$100,000 - $999,999	---	47.4 (44.5-50.3)
	$1 million or more	---	41.1 (35.3-46.9)
Disability status	No disability	29.0 (26.7-31.3)	---
	Have a disability	47.3 (43.9-50.8)	---
Disability severity	Mild or moderate disability	45.6 (41.7-49.5)	---
	Severe or very severe disability	54.5 (47.7-61.4)	---
Number of disabilities	One disability type	46.6 (41.7-51.6)	---
	Two or three disability types	45.0 (39.6-50.5)	---
	More than three disability types	54.7 (47.8-61.7)	---
Physical disability	Yes, has a physical disability	47.7 (43.8-51.5)	---
	No, does not have a physical disability	32.0 (29.6-34.4)	---
Sensory disability	Yes, has a sensory disability	45.6 (39.1-52.1)	---
	No does not have a sensory disability	34.5 (32.4-36.6)	---
Cognitive disability	Yes, has a cognitive disability	49.1 (40.4-57.8)	---
	No, does not have a cognitive disability	34.4 (32.3-36.5)	---
Mental health disability	Yes, has a mental health disability	55.4 (49.2-61.6)	---
	No does not have a mental health disability	31.8 (29.7-33.8)	---

ACEs and health factors

Self-rated general and mental health: Two indicators of well-being were assessed in both the GSS and the CLSA: perceived general health and perceived mental health. Results for any ACE are presented in Table 3. Results for each ACE subtype are presented in Supplement 7 (Tables 8-9). Across well-being indicators, exposure to ACEs was higher in the CLSA sample compared to the GSS sample.

For both samples, reported ACEs were higher in people who reported low general health compared to those with high general health. In the GSS, this was found to be true for all abuse subtypes, physical abuse (15.6% vs. 10.3%), sexual abuse (7.7% vs. 4.8%), emotional abuse (30.0% vs. 22.0%), neglect (4.0% vs. 1.8%), and parental violence (20.2% vs. 15.1%). The CLSA followed a similar pattern for subtypes of physical abuse (32.5% vs. 24.1%), emotional abuse (27.7% vs. 21.2%), neglect (5.7% vs. 2.3%), and parental violence (29.0% vs. 21.7%).

Similar findings were seen for perceived mental health, whereby people who rated their mental health as low had higher exposure to ACEs as compared to those who rated their mental health as high. In the GSS, this was true for abuse subtypes of physical abuse (16.5% vs. 10.2%), sexual abuse (7.9% vs. 4.9%), emotional abuse (34.2% vs. 19.8%), and parental violence (25.0% vs. 12.6%). The CLSA presented similar subtype findings for physical abuse (32.7% vs. 25.0%), emotional abuse (29.2% vs. 21.1%), neglect (5.9% vs 2.6%), and parental violence (29.6% vs. 22.2%).

Table 3. Prevalence of ACEs (95% CI) by well-being indicator

Characteristics	Level	GSS	CLSA
Self-rated general health	Low	40.4 (37.6-43.3)	54.7 (51.3-58.1)
	High	31.1 (28.4-33.7)	46.2 (43.6-48.9)
Self-rated mental health			
	Low	45.7 (42.3-49.1)	55.4 (51.6-59.2)
	High	28.5 (26.2-30.7)	46.8 (44.3-49.4)

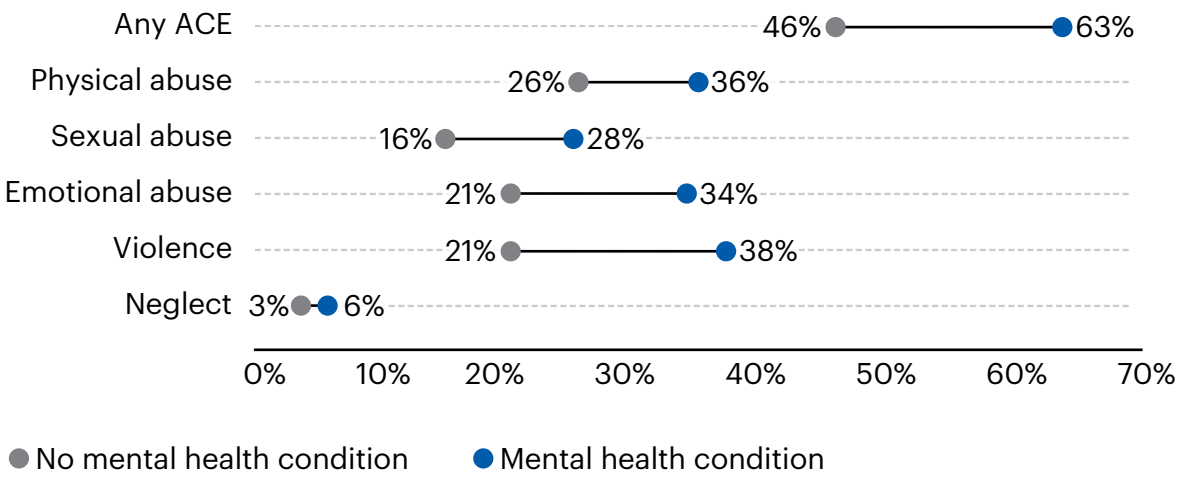
The CLSA provided a more in-depth profile on how reported ACEs varied by different physical and mental health conditions, unmet healthcare needs, and functional impairments in basic and instrumental activities of daily living. The prevalence of ACEs by the various health outcomes is shown in Table 4, while the results for each ACE subtype are presented in Supplement 7 (Table 9).

Chronic conditions: With respect to physical health, there were higher reported ACEs among those who had any chronic condition compared to those who did report any (50.7% vs. 32.1%). This trend remained for subtypes of physical abuse (28.3% vs. 15.9%), emotional abuse (24.7% vs.10.4%), and parental violence (25.5% vs. 11.0%). Similar trends were also observed among people with chronic pain, arthritic, respiratory, neurological and gastrointestinal conditions (see Table 4). Exposure to ACEs did not differ in individuals with vision impairments, cancer, diabetes, and cardiovascular conditions.

Unmet healthcare needs and functional impairment: Individuals who had unmet healthcare needs (i.e., needed care but did not receive it) also had higher exposure to ACEs. This trend was observed for individuals reporting unmet needs compared to those reporting none for only physical abuse (40.8% vs. 26.9%). Functional impairment was not linked to ACE exposure.

Mental health conditions: A higher percentage of individuals with mental health conditions, including anxiety and mood disorders, reported having experienced an ACE compared to people without these conditions (62.8% versus 46.4%). This pattern was observed among those reporting mental health conditions for physical abuse (35.6% vs. 25.7%), sexual abuse (27.5% vs. 15.5%), emotional abuse (34.3% vs. 21.3%), and parental violence (38.4% vs. 21.3%), see Figure 3. Additionally, individuals who screened positively for depression at the time of data collection had higher exposure to ACEs (61.9% vs. 47.1%) as well. This trend remained for subtypes physical abuse (39.0% vs. 25.2%), sexual abuse (26.3% vs. 16.1%), emotional abuse (33.0% vs. 22.0%), and parental violence (36.1% vs. 22.2%).

Figure 3. Prevalence of ACEs is **higher** among individuals with at least one **mental health condition**



All comparisons except for Neglect were statistically significant, with non-overlapping 95% confidence intervals. Values for Neglect should also be interpreted with caution due to high sampling variability.

Table 4. Prevalence of ACEs (95% confidence intervals) by health outcomes in the CLSA

Health indicator	Level	CLSA
Chronic pain	Not usually free of pain	58.7 (55.3-62.2)
	Usually free of pain	43.7 (41.1-46.3)
Functional impairment	Moderate/severe functional impairment	60.7 (45.7-75.6)
	No/mild functional impairment	49.5 (47.4-51.7)
Unmet healthcare needs	Yes, have unmet needs	63.6 (56.0-71.3)
	No unmet needs	48.9 (46.7-51.1)
Chronic conditions	At least one chronic condition	50.7 (48.6-52.9)
	No chronic conditions	32.1 (23.6-40.6)
Arthritis conditions	Yes, have arthritis	54.0 (50.8-57.2)
	No, do not have arthritis	46.2 (43.4-49.0)
Respiratory conditions	Yes, have respiratory condition	57.4 (52.5-62.4)
	No, do not have respiratory conditions	47.9 (45.6-50.3)
Diabetes, borderline diabetes or high blood sugar	Yes, have diabetes, borderline diabetes, or high blood sugar	52.1 (47.0-57.2)
	No, do not have diabetes, borderline diabetes or high blood sugar	49.3 (46.9-51.6)
Cardiovascular conditions	Yes, have cardiovascular condition	50.9 (47.9-53.9)
	No, do not have cardiovascular condition	48.8 (45.8-51.8)
Neurological conditions	Yes, have neurological condition	60.0 (55.0-65.1)
	No, do not have neurological condition	47.7 (45.4-50.0)
Gastrointestinal conditions	Yes, have gastrointestinal condition	59.6 (55.6-63.5)
	No, do not have gastrointestinal condition	46.0 (43.6-48.5)
Vision conditions	Yes, have vision condition	49.2 (45.7-52.7)
	No, do not have vision condition	49.9 (47.3-52.6)
Cancer	Yes, has had cancer	49.9 (44.8-55.1)
	No, has not had cancer	49.8 (47.5-52.2)
Mental health conditions	Yes, have mental health condition	62.8 (57.8-67.8)
	No, do not have mental health condition	46.4 (44.1-48.8)
Positive screen for depression	Yes, have depression	61.9 (56.8-67.0)
	No, do not have depression	47.1 (44.8-49.4)
Other chronic condition	Yes, have other chronic conditions	52.9 (50.5-55.4)
	No, do not have other chronic conditions	40.7 (36.6-44.8)

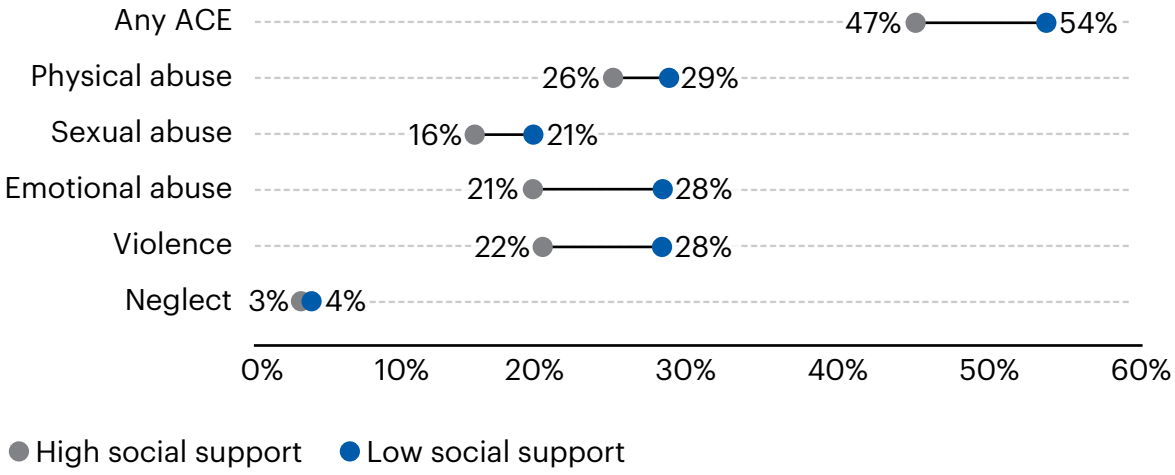
ACEs and social factors

Data from the GSS and CLSA was used to analyze relationships between social health and exposure to ACEs. See Supplement 7 (Table 7) for prevalence of any ACE by social variables. Results by ACE subtypes are presented in Supplement 7 (Tables 8-9).

Social health: Indicators of social health (including social support and loneliness) were examined using the CLSA (see Figures 4A and 4B). There were higher reported ACEs among individuals who reported low social support (53.7%) than those with high social support (46.7%). This difference was apparent for emotional abuse (27.8% vs. 21.0%) and violence (27.8% vs. 22.0%), but not other subtypes.

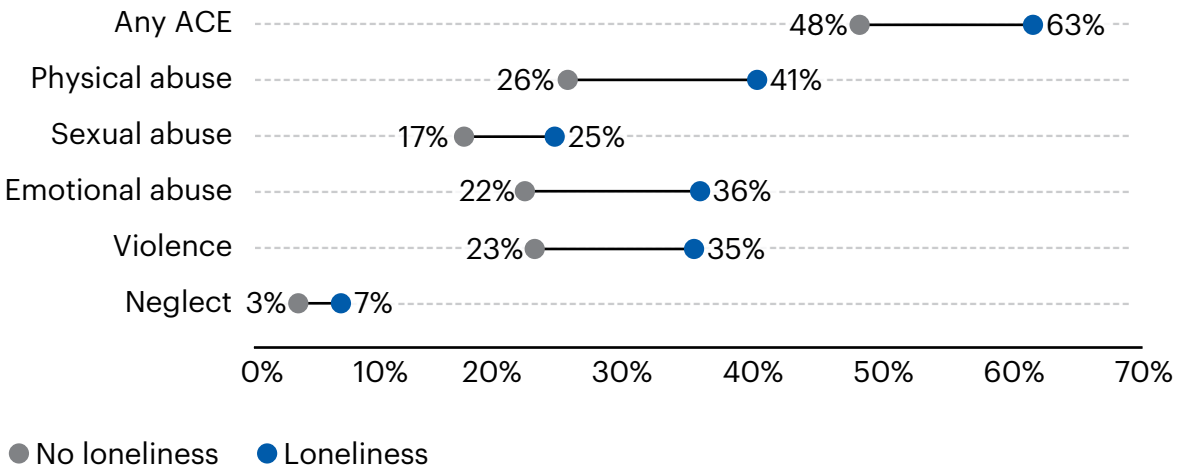
Higher ACEs were also observed in individuals in the high loneliness group (63.2%) compared to the low loneliness group (47.7%). This difference was consistent for several ACE subtypes including physical abuse (40.5 vs. 25.7), emotional abuse (36.0% versus 22.1%), and violence (35.3% vs. 23.2%).

Figure 4A. Prevalence of ACEs is **higher** among individuals with **low social support**



Comparisons for Any ACE and Emotional abuse were statistically significant, with non-overlapping 95% confidence intervals.

Figure 4B. Prevalence of ACEs is **higher** among individuals who **experience loneliness**



Comparisons for Any ACE, Physical abuse, Emotional abuse and Violence were statistically significant, with non-overlapping 95% confidence intervals.

Revictimization and discrimination: In the GSS, there was a strikingly high co-occurrence of ACEs among individuals who had experienced forms of victimization in adulthood (see Figure 5).

Among those who experienced any form of emotional, financial, physical or sexual abuse perpetrated by a dating partner or spouse, the percentage of individuals reporting having experienced an ACE was nearly double that of people who had not experienced this abuse (32.0% vs. 61.1%). This trend was observed across all ACE subtypes – physical abuse (23.8% vs. 11.9%), emotional abuse (46.6% vs. 22.4%), sexual abuse (12.3% vs. 5.4%), violence (34.9 vs 15.7%), and neglect (5.9% vs. 2.0%).

There was a higher reporting of ACEs in individuals who had experienced emotional, verbal or financial abuse from individuals other than their spouse or partner (i.e., friends, family or caregivers). The percentage of ACEs among this group was 65.7 per cent compared to 34.2 per cent in those who had not experienced this form of abuse. This difference was consistent across several subtypes including physical abuse (28.2% vs. 12.2%), emotional abuse (50.2% vs. 24.7%), and violence (40.1% vs. 16.7%)

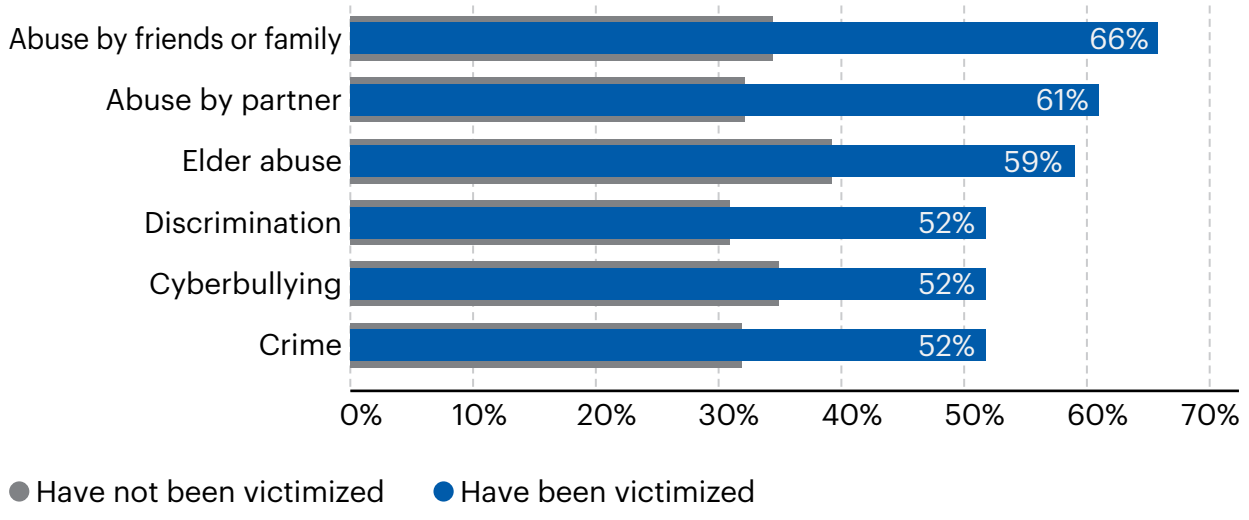
Reported ACEs were higher among people who had reported being a victim of crime (52.0%) compared to those who did not report criminal victimization (31.4%). This pattern was consistent for physical abuse (20.7% vs. 10.9%), emotional abuse (41.5% vs. 21.8%), sexual abuse (9.3% vs. 5.3%), and violence (26.8% vs. 15.4%).

ACEs exposure was also higher in victims of cyberbullying or cyberstalking (52.4%) compared to people who did not report this form of victimization (34.6%). This difference was also observed for physical abuse (22.3% vs. 11.9%) emotional abuse (39.5% vs. 24.8%), sexual abuse (12.3% vs. 5.7%), and violence (26.9% vs. 17.4%).

Higher prevalence of ACEs was also observed in people who had experienced discrimination based on their sex, ethnicity or culture, race or skin colour, physical appearance, religion, sexual orientation, gender expression or identity, age, disability, language or another characteristic (52.3%), compared to people who did not report any form of discrimination (30.4%). These differences were also found across subtypes – physical abuse (19.6% vs. 10.6%), sexual abuse (10% vs. 5%), emotional abuse (41.4 vs. 21.1%), and violence (28.1% vs. 14.4%)

Elder abuse: The CLSA had limited variables on revictimization and safety, but did include a series of questions on elder abuse. Respondents were categorized as having experienced elder abuse if they answered yes to any question relating to financial, physical or psychological elder abuse. Reported ACEs were higher among individuals who had experienced elder abuse (58.5%) compared to those who had not (39.0%). This difference was also observed for several ACE subtypes, including physical abuse (32.0% vs. 20.4%) sexual abuse (25.0% vs. 14.2%), emotional abuse (26.2% vs. 14.8%), and violence (26.3% vs. 16.4%). It was not possible to report findings for neglect due to high sampling variability.

Figure 5. Prevalence of ACEs is **higher** among individuals who have experienced different forms of **victimization**



All comparisons were statistically significant, with non-overlapping 95% confidence intervals.

Discussion

This descriptive study aimed to gain insights into the ACEs profile of Ontario, and how it differs by populations, including by sociodemographic characteristics, and by health and social factors.

"The key finding of this study is that ACEs are not equally distributed across Ontario's population."

The key finding of this study is that ACEs are not equally distributed across Ontario's population. A history of ACEs was found to be more common among equity-deserving groups, including sexual minorities, people with disabilities, and females. ACEs were also more prevalent among those who reported further victimization in adulthood, potentially exacerbating their negative effects. There was consistently higher reporting of ACEs across a range of poorer health outcomes, with particularly large disparities in mental health related outcomes. Additionally, there was evidence that reported ACEs were higher among individuals lacking social support, facing unmet healthcare needs, and with lower income and wealth – factors that typically buffer their negative impact.

Consistent with previous research, findings from this study indicate a high prevalence of ACEs in Ontario[6-9]. Analysis of the 2019 GSS in the present study revealed that 35 per cent of Ontarians had experienced at least one ACE, with emotional abuse being the most common (26%), followed by exposure to violence (18%), physical abuse (13%), sexual abuse (6%), and neglect (3%). This overall prevalence is similar to earlier analyses of Statistics Canada data at the national level, including 27 per cent reported in the 2018 Survey of Safety in Public and Private Spaces[9], 32 per cent reported in the 2012 Canadian Community Health Survey[8], and 33 per cent in the 2014 GSS[7]. Unique to this study was an in-depth analysis of five ACE subtypes and how ACEs profiles vary across a range of sociodemographic, health and social characteristics, which was not consistently examined in prior research. The analysis of 2012 Canadian Community Health Survey Statistics Canada data[8] used similar ACE definitions and reported a higher prevalence of physical abuse (26% compared to 13% in the analysis of the GSS in the present study). There were also differences in prevalence of household violence, with our study finding rates of 18 per cent compared to 8 per cent[8].

Analysis of Ontario-level CLSA data showed a higher prevalence of ACEs, up to 50 per cent. Physical abuse was the most common ACE subtype (28%), followed by parental violence (25%), emotional abuse (24%), sexual abuse (18%), and neglect (4%). These are lower prevalences than those reported in other analyses of CLSA data[6], as this study excluded three ACE items – parental divorce, parental death, and living with a family member with mental health issues – to ensure better comparability with the GSS, which also did not include these items.

However, consistent with Joshi et al.'s national CLSA analysis[6], our study found significantly higher reported ACEs among females, younger individuals, and those with lower incomes. Unlike their findings, no differences were observed by sexual orientation or education. However, this could be due to small sample sizes for these characteristics at the Ontario level, limiting the ability to detect a significant difference.

This study found a higher prevalence of ACEs in the CLSA (50%), which includes middle-aged and older adults, compared to the GSS sample (35%), which includes individuals aged 15 and older. Notable differences were also observed by ACE subtype, with physical abuse being the most prevalent ACE in the CLSA (28% vs. 13% in GSS), as well as higher rates of exposure to household violence and sexual abuse in the CLSA.

Several factors may contribute to these differences. For instance, the GSS is designed to be more representative of the general population, while the CLSA is a longitudinal cohort study that is only representative by age and sex at national and provincial levels[20]. The CLSA is also much less diverse than the GSS, with 80 per cent being Canadian born and 94 per cent of participants identifying as White, which may influence ACE reporting.

Reporting of ACEs is highest in middle adulthood in both datasets. This is consistent with previous research finding lower reported ACEs in older generations[21]. This may be because as individuals age, they may reinterpret or become more aware of the impact of their childhood adversity[22]. Conversely, the lower ACE reporting among the oldest adults in both the GSS and CLSA may be due to cognitive aging, stigma or minimization of past adversities[6]. This could also reflect survivorship bias, meaning that there might not be a lower prevalence of ACEs amongst the oldest adults, but rather, people with high ACE exposure are at greater risk of negative health and social outcomes, including early mortality, meaning that fewer individuals with high ACEs survive into older adulthood to be captured by the data[6]. The greater concentration of individuals in middle adulthood in the CLSA may have had a role in the higher reporting of ACEs in this sample.

ACEs by sociodemographic, health and social factors

The evidence in Canada[7-9,23-26] and globally[2,27,28] establishes ACEs as a risk factor for poor outcomes. What this study adds is its examination of how ACE profiles vary among adults based on sociodemographic characteristics, and how these experiences relate to negative health and social outcomes, including further victimization in adulthood.

While this study found a high prevalence of ACEs in Ontario, findings showed that some populations are affected more than others. For instance, findings from the GSS showed a strikingly high co-occurrence of ACEs amongst people who experienced various forms

of victimization in adulthood, including intimate partner violence, criminal victimization, discrimination and cyberbullying. This was also observed in the CLSA, whereby individuals who had experienced elder abuse (either psychological, physical or financial), reported significantly higher ACEs. This is consistent with previous research in Canada showing a link between ACEs and further victimization in adulthood[7,9,26].

This study also found that in the CLSA's middle and older age sample, people with low social support and higher loneliness reported more ACEs. There was also a pattern of higher ACEs amongst single and divorced people, and those living alone. Prior studies highlight social support's role in buffering the negative impacts of ACEs[16]. A lack of social support has been found to worsen impact of ACEs, leading to a greater impact on mental and physical health outcomes[15].

In this study's analysis of the GSS 2019, there were also stark differences observed by sociodemographic characteristics, particularly amongst individuals identifying as lesbian, gay, bisexual or as having another sexual orientation, for whom the percentage of reported ACEs was nearly twice as high relative to heterosexual people. This difference appears to be driven by higher rates of emotional abuse and exposure to household violence experienced by the sexual minority group. This finding did not extend to the CLSA analysis. However, this should be interpreted with caution due to the sample's lack of diversity and insufficient power to meaningfully examine group differences by sexual orientation.

In line with previous studies[7], exposure to ACEs was also higher in females compared to males. Analysis of the GSS revealed that the percentage of sexual abuse reported by females was three times than that reported by males. Females also reported a higher percentage of emotional abuse. Reporting of physical abuse, violence and neglect was comparable between males and females. A pattern of higher ACEs amongst females was also observed in the CLSA analysis.

Previous studies have also found a link between ACEs exposure and financial stress in adulthood[29]. The present study found higher reported ACEs in people with lower income and wealth in the CLSA. Lower financial security could compound the negative impacts of ACEs, through barriers to accessing quality healthcare and other social determinants of health.

Across both datasets, this study showed a consistent pattern of higher ACEs amongst equity-deserving groups and those with negative health outcomes, including disabilities, several chronic health conditions, and lower overall well-being. Consistent with existing evidence[30], reporting of ACEs by people with disabilities was markedly higher than in people without a disability, and this disparity was highest in people with a mental health-related disability.

CLSA analysis showed disproportionate experiences of ACEs across a range of negative health indicators, with the most notable disparities being observed for mental health and neurological conditions, and individuals with unmet healthcare needs. This is consistent with research showing particularly strong links between ACEs and poor mental health, compared to other health outcomes[2].

Policy directions

The negative impacts of ACEs are thought to be driven by toxic stress, which disrupts the body's ability to regulate and adapt to stress[31]. This study has shown that a history of ACEs is more common in certain populations in Ontario, which could compound toxic stress in equity-deserving groups and individuals experiencing negative health and social outcomes. Policy responses to ACEs should focus on the full spectrum across prevention, mitigation and long-term support, with a focus on populations who are at disproportionate risk of ACEs.

Policy responses should focus on the full spectrum of prevention, mitigation and long-term support, with a focus on populations who are at disproportionate risk of ACEs.

As highlighted in Ontario's Early Adversity and Resilience Framework, this means targeting the root causes of ACEs by supporting socially connected, equitable and inclusive communities[32]. This includes ensuring families are supported, from pregnancy to parenting, so they have the opportunities and resources to thrive and to create safe, stable and nurturing environments for children. This also involves addressing social exclusion and systemic inequities that can maintain the cycle of ACEs and negative outcomes.

A focus on fostering positive childhood experiences is also crucial. This includes social participation, social and emotional support from families and friends, and a positive school environment that provides a sense of belonging and safety. This can increase resilience across the life course and buffer the negative impacts of ACEs[33].

Finally, the key finding of this study is that individuals who experience negative health and social outcomes in adulthood, including further victimization, are more likely to have a history of ACEs. To address the impacts of ACEs across the life course, long-term and equity-focused support is needed. This includes access to trauma-informed care, and access to high-quality health and social services. This also includes equitable access to social determinants of health and promoting resilience through social connection and supportive environments. Strengths-based approaches to foster resilience are key, as resilience has been found to mitigate the negative health impacts of ACEs[34]. Tailored

approaches are needed for populations facing existing health and social inequities, such as those identified in this study.

Limitations

These findings should be interpreted with consideration of their limitations. First, this is a descriptive analysis of cross-sectional data and does not adjust for potential confounding variables. Therefore, it is not possible to draw causal conclusions from these findings. Second, the data used in the analysis is based on retrospective reporting of ACEs, which is subject to reporting bias. Third, some results, particularly regarding ACE subtypes and groups with smaller sample sizes, have high sampling variability. These estimates, highlighted in the report, have lower precision and should be interpreted with caution. Fourth, data gaps exist in this study. Populations experiencing significant health and social inequities, such as Indigenous individuals and trans and gender-diverse people, were not included in the analysis. These groups are known to face disproportionate experiences and health impacts of ACEs[35,36]. As well as this, the utility of the ACEs construct in Indigenous populations remains an area of ongoing research. Lastly, the 2019 GSS had a lower response rate (45% in Ontario) compared to previous cycles of victimization surveys and other general social surveys from other countries due to changes in data collection methods. Various validation methods, such as weighting adjustments and data comparisons, were employed to ensure the sample was representative of the Canadian population[37].

Conclusion

Consistent with previous research, this study found a high prevalence of ACEs in Ontario. However, some groups are affected by ACEs more than others. This study highlights the compounded impact of adversity across the life course, showing that equity-deserving populations, and those experiencing negative health and social outcomes, including further victimization, have also faced elevated levels of early life adversity. The findings highlight the need for approaches that address the ongoing impact of ACEs across the life course, with a focus on those disproportionately affected.

"This study highlights the compounded impact of adversity across the life course."

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