Cyberbullying victimization and its association with health across the life course: A Canadian population study

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ABSTRACT

OBJECTIVES: To examine the prevalence of cyberbullying victimization (CV), its associations with self-reported health and substance use and the extent to which age moderates these associations.

METHODS: We used the 2014 Canadian General Social Survey on Victimization (N = 31 907, mean age = 45.83, SD = 18.67) and binary logistic regression models to estimate the strength of association between CV and health-related outcomes.

RESULTS: The five-year prevalence of CV was 5.1%. Adolescents reported the highest prevalence of CV (12.2%), compared to all other adult age groups (1.7%–10.4%). After controlling for socio-demographic covariates, individuals exposed to CV had increased odds of reporting poor mental health (OR = 4.259, 95% CI = 2.853–6.356), everyday limitations due to mental health problems (OR = 3.263, 95% CI = 2.271–4.688), binge drinking (OR = 2.897, 95% CI = 1.765–4.754), and drug use (OR = 3.348, 95% CI = 2.333–4.804), compared to those not exposed to CV. The associations between CV and self-reported mental health and substance use were strongest for adolescents and attenuated across the adult age groups.

CONCLUSION: Adolescence may represent a developmental period of heightened susceptibility to CV. Developing and evaluating targeted preventive interventions for this age group is warranted.

KEY WORDS: Bullying; mental health; adolescent

La traduction du résumé se trouve à la fin de l'article.

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Cyberbullying is aggression intentionally and repeatedly carried out in an electronic context where a power imbalance exists between the perpetrator and victim.[1] Cyberbullying is considered a serious public health problem with high prevalence and deleterious impact in health-related outcomes.[2] However, much of our evidence on cyberbullying and its impact on health focuses on adolescents, with little evidence about the prevalence and health-related impacts in adults. The current study seeks to address this evidence gap by examining and contrasting the prevalence and health-related impacts of cyberbullying victimization (CV) in a nationally representative sample of Canadians aged 15 years and older.

Prevalence

Prevalence estimates of CV vary widely across studies: among adolescents, these estimates range from 10% to 40%,[3] and in college students, from 8.6% to 55.3%.[4–9] Differences across studies in sampling and measurement approaches account for much of this variability. For instance, in the study reporting the highest rates of CV (55.3%), CV was classified as present if it occurred once in the respondent's lifetime.[4] The study that reports the lowest rate of CV (8.6%)[6] applied dual criteria: experienced CV at least four times or more and answered yes to a specific example of cyberbullying since being at college. Within Canada, an online survey completed at four universities (N = 1733, female = 74%) estimated the 12-month prevalence of CV to be 24.1%.[10] In this survey, CV was defined as using language that can defame, threaten, harass, bully, exclude, discriminate, demean, humiliate, stalk, disclose personal information, or contain offensive, vulgar or derogatory comments, intended to harm or hurt the recipient. Analyses of the 2014 General Social Survey on Victimization found that 17% of the Canadian population age 15–29 years experienced cyberbullying or cyberstalking in the previous 5 years.[11] CV was more prevalent in the younger age group (i.e., 15–20 year olds), compared to the older age group (i.e., 27–29 year olds). Among adults, experiences of CV have also been examined within the workplace context. Past studies have defined workplace cyberbullying as the percent of individuals who perceived themselves to be the target of repeated and systematic negative acts on at least a weekly basis over a period of 6 months or longer.[12] Based on this definition, about 9.2% of individuals in the workplace reported being cyberbullied.[13] In addition, Privitera

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and Campbell[14] reported the prevalence of workplace cyberbullying to be 10.7%.

In summary, prevalence estimates of CV in adolescents are numerous but vary widely because of differences in the way CV is measured and defined. In contrast, prevalence estimates of CV in adults are few in number and primarily restricted to either college/university students, young adults, or persons in the workplace. As a result, the prevalence of CV among representative samples of adults in the general population remains unclear.

Impact of cyberbullying victimization on mental health and substance use

Adolescents may be particularly vulnerable to the adverse effects of CV because of their high levels of exposure to social networking combined with the unique challenges they experience throughout this developmental period. Social media, with the attendant risks of CV, has become the primary form of communication for adolescents. A recent epidemiological study reports that the majority (81%) of adolescents in the province of Ontario visit social networking sites (SNS; e.g., Facebook) daily. About 1 in 10 of them spend 5 hours or more on these sites each day,[15] with the more time spent online being associated with greater chances of being the victim of cyberbullying.[16] In addition to this exposure, adolescents face a number of developmental challenges that make their growing dependence on each other potentially volatile and stressful. They are in the pre-conventional stage of moral development, focused on how the world affects them and not how they affect the world. This can make them susceptible to moral disengagement (being convinced that certain ethical standards don't apply to them in particular contexts) and to minimizing responsibility for their behaviour.[17] Furthermore, increasing levels of depression, anxiety, self-injury and substance use disorders throughout adolescence are testament to their vulnerability.[18–20] These individual vulnerabilities can make peer relations stressful, particularly among female adolescents who are more susceptible to interpersonal stress compared to males.[21–24]

The empirical evidence is consistent with the theoretical arguments for expecting CV to exert a negative influence on adolescent mental health. A recent meta-analysis investigating the association between CV and adolescent psychological problems suggests a small-to-moderate association between CV and levels of depression ($r = 0.24$; $k = 30$ studies), anxiety ($r = 0.24$; $k = 14$ studies), and drug and alcohol use ($r = 0.15$; $k = 6$ studies).[25] Studies of college students report that CV is associated with higher levels of depression, anxiety, suicidality and substance use.[6,10] However, studies examining the association between CV and mental health among adults are scarce. Hango[11] reported that CV is associated with mental health problems and marijuana use among emerging adults aged 15–29 years. However, this age restriction leaves open questions about exposure to CV and its adverse effects among young, middle-aged and older adults in the general population, and the extent to which age moderates the association between CV and mental health-related outcomes. The increasing dependence on social media throughout all ages combined with our lack of knowledge about CV exposure and its effects in adults argues for a close examination.

Using a nationally representative sample of Canadians 15 years and over, this study examines the prevalence of CV, its association with health-related outcomes, and the extent to which age moderates these associations. By using data from a nationally representative sample of Canadians that covers the entire age spectrum from adolescents to the elderly, this study bridges important gaps in our knowledge on the prevalence and impacts of cyberbullying across the life course.

METHODS

Secondary analyses were conducted on data from the 2014 Canadian General Social Surveys on Victimization (GSS-Victimization). Conducted by Statistics Canada, the GSS-Victimization is a national household survey designed to better understand how Canadians perceive crime, by collecting information on their experiences of victimization. The eligible population for the GSS-Victimization is the Canadian population aged 15 and over, living in the 10 provinces and territories. Full-time residents of institutions were excluded. The surveys were conducted via telephone interviews (cellular phone and land-line) and 61.6% ($N = 31\,907$) of those invited, participated. Statistics Canada developed sampling weights so that respondent answers would be representative of the Canadian population aged 15 and over (www.statcan.gc.ca). Sampling weights were normalized (individual weights divided by the average weight so the sum of the weights equaled the sample size) and applied to all analyses.[26]

Measures

Cyberbullying Victimization (Past 5 Years)

Participants were asked if they used the internet in the past 5 years. Those who responded "yes" were asked the following questions: "*The following questions are about cyberbullying, which is the use of the Internet to embarrass, intimidate or threaten someone. In the past 5 years, have you ever 1) received threatening or aggressive e-mails or instant messages? 2) Been the target of hateful comments spread through e-mail, instant messages or postings on Internet sites? 3) Had someone send out threatening emails using your identity? 4) Been the target of any other kind of cyberbullying (which is the use of the Internet to antagonize or intimidate someone) not already mentioned?*" Participants who answered yes to any one of these questions were classified as having been a victim of cyberbullying and coded as "1", whereas participants who responded "no" to all of these questions or who did not use the Internet in the past 5 years were classified as "0".

Mental Health

Respondents were asked "*In general, would you say your mental health is (1. Poor 2. Fair 3. Good 4. Very Good 5. Excellent)?*" Responses were collapsed into a binary variable with "Good to excellent" mental health coded as "0" and "poor to fair" mental health coded as "1".

General Health

Respondents were asked "*In general, would you say your health is (1. Poor 2. Fair 3. Good 4. Very Good 5. Excellent)?*" Responses were collapsed into a binary variable with "good to excellent" general health coded as "0", and "poor to fair" general health coded as "1".

Alcohol Use

Binge drinking was measured by asking the following question: "*How many times in the past month have you had 5 or more drinks in a*

single occasion?" The number of binge drinking episodes in the past month was categorized as never to 2 times coded as "0", and 3 or more times coded as "1".

Drug Use

The drug item was divided into two items: *1) "In the past month, did you use marijuana, hashish, hash oil or other cannabis derivatives (Yes or No)?" 2) "In the past month, did you use any other non-prescribed drugs, for example magic mushrooms, cocaine, speed, methamphetamine, ecstasy, PCP, mescaline or heroin (Yes or No)?"* The two drug use items were combined into a single binary response variable (i.e., 0 = no drug use, 1 = drug use).

Limitations due to mental problems was measured using the following: "*How often are your daily activities limited by any emotional, psychological or mental health conditions, including anxiety, depression, bipolar disorder, substance abuse, anorexia, etc. (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)?*" A binary variable was created with 0 = never, and 1 = rarely to always).

Socio-demographic Characteristics

The following variables were used to describe the sample and included as co-variates in the regression analyses. Binary variables were coded as follows: sex (0 = male, 1 = female), residency (0 = urban, 1 = rural), and visible minority (0 = no, 1 = yes). For variables with multiple categories, the reference category was coded "0" and the other categories were assigned a dummy code "1" as follows: respondent age (adolescence was the reference group-, 15–18 years; young adulthood, 19–25 years; adulthood, 26–40 years; middle age, 40–60 years; older adults, 61 years and over), education level (less than high school was the reference group, high school, college or some university, bachelor degree or higher), marital status (married or common law was the reference group, widowed, separated or divorced, single), and main activity (working was the reference group, looking for paid job, in school, at home, retired, ill).

Data analysis

About 3.7% of participants (1220/33 127) were missing responses on at least one variable. The individuals with missing data were more likely to be older, male, unwell, retired/looking for work, and living in an urban area. They were less likely to report binge drinking, drug use and CV. Individuals with missing responses were dropped from subsequent analyses. The total sample for analyses included 31 907. Binary logistic regression analyses were performed using statistical software SPSS V. 23.

Regression analyses, adjusting for socio-demographic characteristics noted above, were conducted to quantify the magnitude of associations between CV and the following outcomes: 1) self-rated poor/fair mental health, 2) self-rated poor/fair general health, 3) limitations due to mental health problems, 4) binge drinking 3 or more times in the past month, and 5) illicit drug use. Interaction terms between age categories and CV were included to test for the moderating effects of age on these associations. Odds ratios (ORs) and 95% confidence intervals (95% CI) were calculated and reported.

RESULTS

Sample characteristics appear in Table 1. The average age of participants was 45.83 years (±18.67), and the overall prevalence of CV was 5.1% (not shown). About 49.3% of the sample identified as being male; and 17.1%, from visible minority backgrounds. Most participants were working, had a college education or higher and were married.

Table 1 also presents the prevalence estimates of CV by each of these characteristics and the corresponding *p*-value for test statistics (χ^2). The prevalence of CV among males (4.9%) and females (5.3%) was very similar. The association between CV and age followed a steep descending gradient from adolescence

Table 1. Total sample distribution and bivariate associations between socio-demographic characteristics and 5-year prevalence of cyberbullying victimization

Concepts	Total sample distribution (*N* = 31 907)	5-year prevalence of CV	*p*-value
CV			
Yes	5.1%		
No	94.9%		
Sex			
Male	49.3%	4.9%	$p > 0.05$
Female	50.7%	5.3%	
Age (years)			
15–17	50.7%	12.2%	$p < 0.001$
18–25	11.2%	10.4%	
26–40	25.2%	6.1%	
41–60	34.1%	3.7%	
≥61	23.6%	1.7%	
Visible minority			
Yes	17.1%	4.6%	$p > 0.05$
No	82.9%	5.2%	
Main activity			
Working	57.5%	4.8%	$p < 0.001$
Looking for work	1.5%	11.0%	
Going to school	12.4%	11.2%	
Caring for kids	6.2%	5.0%	
Retired	19.9%	1.6%	
Illness	2.5%	7.4%	
Education			
Less than high school	14.7%	5.2%	$p > 0.05$
High school	26.9%	5.2%	
College	32.1%	4.7%	
Bachelor and above	26.3%	5.4%	
Marital status			
Married and common law	61.0%	3.1%	$p < 0.001$
Widowed	4.7%	1.3%	
Separated/divorced	6.4%	7.3%	
Single	27.9%	9.6%	
Residency			
Rural	18.1%	4.4%	$p < 0.05$
Urban	81.9%	5.3%	
Binge drinking			
0–2 times	90.6%	4.8%	$p < 0.001$
3–31 times	9.4%	8.5%	
Drug use			
Not used drugs	92.9%	4.3%	
Used drugs	7.1%	15.9%	
General health			
Good–excellent	89.6%	4.9%	$p < 0.001$
Poor–fair	10.4%	6.7%	
Mental health			
Good–excellent	94.8%	4.7%	$p < 0.001$
Poor–fair	5.2%	13.4%	
Mental health limitation			
No	90.0%	4.2%	$p < 0.001$
Yes	10.0%	13.5%	

Note: Chi-square test was used to compare the outcome differences between those who were cyberbullied and those who were not cyberbullied.

Table 2. Adjusted odds ratios and 95% confidence intervals for the associations between CV and health-related and substance use outcomes and interaction

Predictors	Odds ratio (95% CI)				
	Poor general health	Poor mental health	Limitations	Binge drinking	Drug use
CV	1.22 (0.662.24)	4.26 (2.85–6.36)	3.26 (2.27–4.69)	2.90 (1.77–4.75)	3.35 (2.33–4.80)
Sex (female)	0.97 (0.89–1.05)	1.04 (0.93–1.17)	1.74 (1.59–1.89)	0.34 (0.31–0.38)	0.41 (0.37–0.46)
Age group (adolescent)	Reference	Reference	Reference	Reference	Reference
Young adults (18–25)	1.52 (1.14–2.04)	0.98 (0.74–1.29)	1.36 (1.09–1.69)	4.41 (3.34–5.83)	1.67 (1.33–2.10)
Adulthood (26–40)	1.79 (1.30–2.46)	0.87 (0.64–1.19)	1.39 (1.09–1.77)	3.37 (2.49–4.55)	1.51 (1.17–1.94)
Middle age (41–60)	3.08 (2.24–4.23)	0.88 (0.64–1.21)	1.13 (0.88–1.45)	2.38 (1.75–3.23)	0.53 (0.40–0.69)
Older age (61 and up)	3.02 (2.16–4.21)	0.39 (0.27–0.57)	0.54 (0.41–0.72)	1.25 (0.88–1.77)	0.15 (0.10–0.23)
Age (adolescence) × CV	Reference	Reference	Reference	Reference	Reference
Young adults × CV	1.90 (0.96–3.79)	0.54 (0.33–0.89)	0.59 (0.39–0.89)	0.51 (0.29–0.88)	0.80 (0.53–1.21)
Adulthood × CV	2.04 (1.06–3.94)	0.50 (0.31–0.80)	0.71 (0.48–1.05)	0.69 (0.40–1.18)	0.53 (0.35–0.79)
Middle age × CV	1.79 (0.93–3.43)	0.55 (0.33–0.89)	0.55 (0.37–0.84)	0.40 (0.22–0.72)	0.86 (0.54–1.35)
Older age × CV	1.18 (0.55–2.54)	0.49 (0.21–1.14)	0.64 (0.34–1.22)	0.13 (0.03–0.57)	0.66 (0.20–2.15)
Female × CV	0.87 (0.64–1.18)	0.96 (0.71–1.30)	1.51 (1.17–1.96)	0.96 (0.71–1.30)	1.52 (1.16–1.99)

Note: Full adjustment includes age, sex, residency, main activity, education, marital status, and visible minority.

(15–18 years: 12.2%) to older age (61+ years: 1.7%). CV exhibited positive associations with all of the adverse health outcomes, most notably drug use, poor-to-fair mental health, and mental health limitations. For example, among individuals with poor/fair mental health, the CV prevalence was 13.4% compared to 4.7% among individuals who reported good/excellent mental health. Similarly, among individuals who used drugs, the CV prevalence was 15.9% compared to 4.3% among individuals who did not use drugs.

Table 2 presents the ORs and 95% CI for the associations between CV and outcomes, after adjusting for socio-demographic co-variates. With the exception of poor general health, CV exhibited strong and statistically significant positive associations with each adverse self-reported mental health and substance use outcome. For example, CV was associated with an increased odds of reporting poor-to-fair mental health (OR = 4.26, 95% CI = 2.85–6.36), mental health limitations (OR = 3.26; 95% CI = 2.27–4.69), binge drinking (OR = 2.90, 95% CI = 1.76–4.75), and drug use (OR = 3.35; 95% CI = 2.33–4.80). Significant interactions between age group and CV were documented consistently for all outcomes, with the exception of poor general health. The odds of reporting poor-to-fair mental health were strongest for adolescents, and attenuated for all other age groups (ORs range from 0.49 to 0.54). Figures 1 and 2 demonstrate the moderating effects of age group on the association between CV and poor-to-fair mental health. A similar pattern of results was found for mental health limitations, binge drinking and substance use, such that the increased odds of reporting these adverse outcomes is strongest for adolescents and reduces across the other age groups.

Two additional interactions emerged. The increased odds among females of reporting mental health limitations was exacerbated by about 50% when they were exposed to CV: OR = 1.51 (95% CI = 1.17–1.96). Although females had a reduced odds of drug use, this reduction was attenuated when exposed to CV: OR = 1.52 (95% CI = 1.16–1.99). In our study, 12.2% of participants reported not using the Internet in the past 5 years and were classified as not experiencing CV. To examine the possible impact of classifying them in this way, we reran the analyses after excluding them. The main effects for CV were very similar, with the OR as follows: poor general health (1.09, 95% CI = 0.604–1.97), poor-to-fair mental health (4.33, 95% CI = 3.02–6.19), limitations due to mental problems (4.19, 95% CI = 3.04–5.77), binge drinking (2.69, 95% CI = 1.66–4.34), and drug use (3.94, 95% CI = 2.81–5.53). Furthermore, the odds of reporting poor-to-fair mental health, binge drinking, drug use, and limitations due to mental problems remained strongest for adolescents and attenuated for all other age groups (ORs for interaction terms between age group and CV ranged from 0.34–0.64, 0.12–0.72, 0.52–0.79 and 0.59–0.71 respectively).

DISCUSSION

This study represents the first attempt to investigate the prevalence of cyberbullying victimization and its association with self-reported health outcomes in a large, representative general population sample of individuals aged 15 years and older in Canada. The 5-year prevalence of CV was estimated at 5.1%. The prevalence was highest among adolescents and there was a linear decline in exposure with age. Although CV was not associated with self-reported general health, we found clear evidence for strong, statistically significant associations between CV and self-reported poor-to-fair mental health, everyday limitations due to mental health problems, drug use, and binge drinking. These associations were particularly strong in adolescence and attenuated in the older age groups.

Although variability in CV prevalence estimates is largely attributable to measurement differences across studies, the lower overall prevalence reported in our study is a function of sampling from the general population and the inclusion of participants that span the full age spectrum from adolescents to the elderly. For example, CV prevalence among adolescents aged 15–17 years was 12.2% in the current study, comparable to estimates reported in previous studies.[27,28] Although exposure to CV extends to older adults, including seniors, there is a steady age-related linear decline in exposure so that only 1.7% of those aged 61 years and older reported exposure to CV.

The second aim of the study was to examine the strength of association between CV and self-reported health-related outcomes and substance use. Our results are consistent with previous studies documenting increased odds of depression and anxiety associated

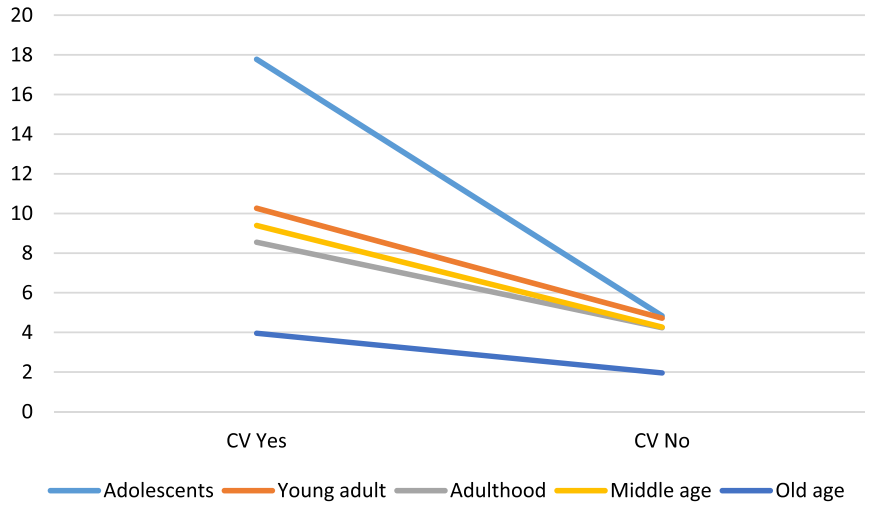

Figure 1. Predicted prevalence of fair-to-poor mental health by cyberbullying victimization and age groupings.
Note: CV Yes = cyberbullying victims; CV No = non-cyberbullying victims

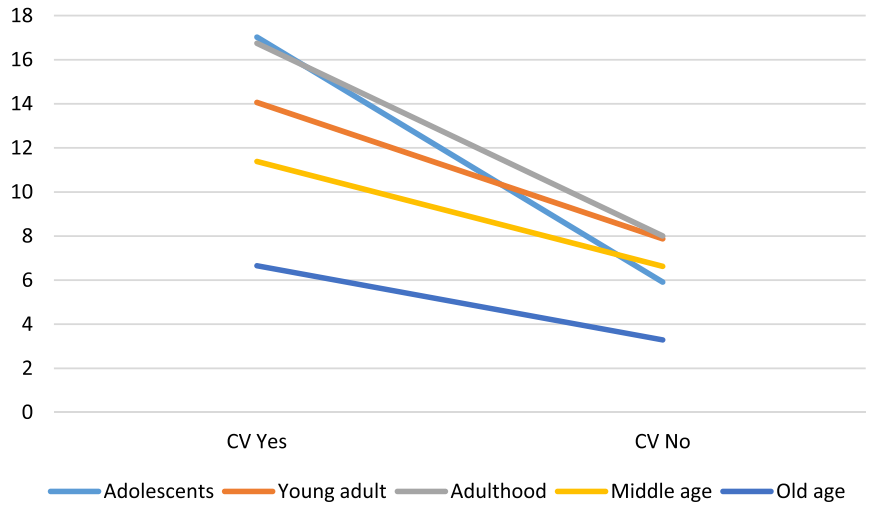

Figure 2. Predicted prevalence of mental health limitations by cyberbullying victimization and age groupings.
Note: CV Yes = cyberbullying victims; CV No = non-cyberbullying victims

with CV exposure among adolescent and college students.[6,10,25,29] They are also in agreement with previous studies that report positive associations between CV and alcohol and drug use.[25,29] The absence of an association between CV and self-reported general health in the current study suggests that the association with CV may be specific to mental health and substance use.

Findings from the current study suggest that adolescence may be a particularly vulnerable developmental period for exposure to CV and its adverse consequences on mental health and substance use. Associations between CV and self-reported poor-to-fair mental health and substance use were magnified during adolescence relative to all other adult age groups. In addition to a steady age-related decline in exposure to CV, the associations between CV and adverse self-reported mental health and substance use outcomes are attenuated from young adulthood onward. Based on these findings, governments are urged to denounce the practice of CV, to develop legislation and programs that will reduce the opportunities for individuals to perpetrate CV, and to create effective strategies for intervening when CV occurs. Recommended are multicomponent schoolwide programs based on the Social-Ecological Diathesis-Stress Model,[17] which emphasizes the dynamic and fluid nature of bullying across the individual, family, peer group, school and community contexts.[30–32] For instance, the Cyber Friendly Schools Program[33,34] is an online whole-school cyberbullying prevention and intervention program built on a social-ecological approach; it reported a significant decline in CV perpetration at one year in a group randomized controlled trial.[35] From a legal perspective, in Canada, cyberbullying can be addressed under civil law or criminal law. Furthermore, provincial laws, such as Ontario's Bill 13 Accepting Schools Act, require schools to provide "instruction on bullying prevention during the school year for every pupil", "remedial

programs designed to assist victims of bullying", and "professional development programs that are designed to educate teachers in schools within its jurisdiction about bullying and strategies for dealing with bullying". The Safe Schools Act has been changed to include cyberbullying, which allows consequences such as suspension or expulsions among students perpetrating bullying.

There are several limitations to the current study. For instance, the cross-sectional design makes it impossible to untangle the temporal relationship between respondent exposure to CV and their health. Furthermore, the GSS did not assess other types of bullying, and the absence of such measures precludes us from disaggregating associations between health and CV from other types of bullying. The failure to control for other forms of bullying is a concern raised by Olweus[1] in relation to studies reporting on CV in adolescent samples. Finally, the current study does not account for peer, family and community factors that may influence CV. Future studies that encompass a broader social-ecological perspective of CV would be beneficial to help inform the development of comprehensive preventive intervention programs.

Despite these limitations, the current study expands our understanding of cyberbullying by estimating the prevalence of CV and its association with general health, mental health and substance use in a large, representative general population sample of adolescents and adults aged 15 years and older. Although CV extends to older adults, there is a steep linear decrease in exposure with age, partly attributable to reduced Internet exposure among the elderly. Furthermore, CV has a deleterious impact on mental health and substance use throughout the age span, with evidence that this impact is particularly strong in adolescents. It is conceivable that exposure to CV may increase in the years to come, particularly if the practice of CV in adolescence is carried over into young adulthood. In addition, use of the Internet and social media as a function of population coverage and time online is a phenomenon that has been increasing exponentially in the past decade – a pattern likely to persist in the next few years. Needed in the future are: cross-sectional studies to monitor exposure to CV and its association with health-related outcomes, and longitudinal studies to investigate the developmental implications for health of CV over the early life span.

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RÉSUMÉ

OBJECTIFS : Examiner la prévalence de la victimisation par cyberintimidation (VPC), ses associations avec la santé et la consommation de substances autodéclarées et la mesure dans laquelle l'âge modère ces associations.

MÉTHODE : Nous avons utilisé l'Enquête sociale générale canadienne sur la victimisation de 2014 (N = 31 907, âge moyen = 45,83, écart-type = 18,67) et des modèles de régression logistique binaire pour estimer la force des associations entre la VPC et les résultats de santé.

RÉSULTATS : La prévalence de la VPC sur cinq ans était de 5,1 %. Les adolescents ont déclaré le taux de prévalence le plus élevé (12,2 %) comparativement à tous les autres groupes d'âge adultes (1,7 %–10,4 %). Compte tenu des covariables sociodémographiques, les sujets exposés à la VPC présentaient une probabilité accrue de faire état d'une mauvaise santé mentale (rapport de cotes [RC] = 4,259, IC de 95 % = 2,853–6,356), de limitations quotidiennes dues à des troubles de santé mentale (RC = 3,263, IC de 95 % = 2,271–4,688), d'excès occasionnels d'alcool (RC = 2,897, IC de 95 % = 1,765–4,754) et de consommation de drogue (RC = 3,348, IC de 95 % = 2,333–4,804) comparativement aux sujets non exposés à la VPC. Les associations entre la VPC, d'une part, et la santé mentale et la consommation de substances autodéclarées, d'autre part, étaient les plus fortes chez les adolescents et s'atténuaient dans les groupes d'âge adultes.

CONCLUSION : L'adolescence pourrait représenter une période de développement où la susceptibilité à la VPC est accrue. Il est justifié d'élaborer et d'évaluer des interventions préventives ciblant ce groupe d'âge.

MOTS CLÉS : brimades; santé mentale; adolescent