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Youth self-report of child maltreatment in representative surveys: a systematic review

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This evidence synthesis has been peer reviewed.

Abstract

Introduction: This systematic review identified population-representative youth surveys containing questions on self-reported child maltreatment. Data quality and ethical issues pertinent to maltreatment data collection were also examined.

Methods: A search was conducted of relevant online databases for articles published from January 2000 through March 2016 reporting on population-representative data measuring child maltreatment. Inclusion criteria were established a priori; two reviewers independently assessed articles to ensure that the criteria were met and to verify the accuracy of extracted information.

Results: A total of 73 articles reporting on 71 surveys met the inclusion criteria. A variety of strategies to ensure accurate information and to mitigate survey participants' distress were reported.

Conclusion: The extent to which efforts have been undertaken to measure the prevalence of child maltreatment reflects its perceived importance across the world. Data on child maltreatment can be effectively collected from youth, although our knowledge of best practices related to ethics and data quality is incomplete.

Keywords: *abuse, neglect, violence, data quality, ethics, adolescence, teenager, systematic review*

Highlights

- Data on child maltreatment can be collected responsibly and ethically from youth in a way that protects their health and well-being.
- Youth rarely expressed concerns about answering child maltreatment questions on self-report surveys.
- No nationally representative self-report survey focussed on Canadian youth that includes child maltreatment variables was identified from our database search.
- Few reliable and valid self-reported measures of child maltreatment currently exist.

Introduction

The consequences of child maltreatment—a public health issue that poses unique challenges to quantify and study—extend well beyond the immediate harm inflicted. For example, a history of child maltreatment has been shown to interfere with adolescent development and to raise the risk of some of the leading causes of morbidity and mortality.[1] These include alcohol-related injury, drug use, self-harming behaviour, suicide and exposure to violence.[2-5]

A growing body of research is aimed at estimating the extent of child maltreatment, and understanding the dynamics and mechanics of its association with health outcomes.[6] Population-representative surveys provide the opportunity to quantify child maltreatment prevalence and to assess its risk in relation to other health-related and social conditions. Of course, in surveys that address a broad range of health-related content, space limitations and competing interests challenge the inclusion of child maltreatment measures. However, the potential contribution of such surveys in improving our understanding of the prevalence, risk factors and impact of child maltreatment is becoming increasingly appreciated—both in Canada and elsewhere.[7] Population-based data from other countries provide the basis for international comparisons, from which the influence of cultural, social and policy practices on any differences observed can be considered.[8,9]

The ethical aspects of child maltreatment survey research are crucial. The sensitive nature of the subject matter and the consequential risk of emotional distress to respondents call for measures to protect confidentiality, administer questions with appropriate sensitivity, obtain informed consent, and potentially provide follow-up interventions.[10] Procedures to address such matters should be clearly delineated, and included as an elemental component of any survey or research report.

Quality of data is an important consideration and should be evaluated in any survey-based research on child maltreatment. Various factors influence the quality of information a respondent provides, such as age and developmental stage. Surveying young people about experiences of child maltreatment has the advantage of being relatively recent to the exposure, so recall bias is likely lower than it would be in a survey of adults. The reliability of self-reported information from adolescents is greater than that from younger children, by virtue of their more advanced cognitive development.[11] Specifically, research suggests that children under the age of 10 years may not be reliable respondents

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for a survey on experiences of maltreatment.[12] Other potential impediments to the disclosure of accurate information include distress, discomfort and embarrassment generated by the memory of events.[13-16]

A review article published in 2000 addressed methodological and ethical considerations in asking children about their exposure to physical and sexual abuse.[17] The authors identified 14 self-report studies that garnered information directly from children; the approaches used to elicit information varied greatly.[17] While the review provides much worthwhile information, it was limited to surveys conducted before 1999; the surveys focussed on physical and sexual abuse and were not representative of the general population. The authors noted considerable variation in data collection methods, wording and number of maltreatment questions as well as consent procedures. Consequently, the estimates of physical and sexual abuse varied considerably.

This systematic review is aimed at increasing our understanding of child maltreatment data captured in self-reported surveys with youth. The specific objectives are to (1) identify representative surveys that have collected data from youth on child maltreatment and factors influencing prevalence (thus not clinical samples); (2) examine the quality of methods used to measure child maltreatment; and (3) assess practices and procedures undertaken to address ethical issues.

Methods

This systematic review was done according to the PRISMA guidelines.[18] (Protocol is available upon request from the corresponding author).

Identification (search strategy)

A search for peer-reviewed articles published from January 2000 through March 2016 was conducted in the following online databases: Embase, Medline, PsycINFO, Global Health, Social Policy and Practice, ERIC, Social Services Abstracts, Sociological Abstracts, and ProQuest Public Health. Search terms used included: youth, adolescent, young adult, child, abuse, maltreatment, violence, neglect, assault, rape, representative, national, and school surveys. The complete search strings employed are available upon request from the corresponding author. In addition, the reference lists of included articles were examined to identify additional articles for potential inclusion as well as discussions with experts.

The following were the criteria for inclusion of articles in the review:

- published in English;
- primary study (i.e. not review or editorial);
- data collected after 1999;
- data sources limited to school or representative population-based surveys (the latter defined as those which were described that way by the authors of the articles and/or had been sampled and weighted in order to accurately reflect the members of the entire population);
- cross-sectional design;
- age range of respondents was 10 to 18 years (core age group); in some cases, age ranged up to 24 years;
- victim's age at time of exposure to maltreatment was under 18 years;
- reported perpetrator of maltreatment was a parent or other caregiver (except for sexual abuse, for which the perpetrator could be anyone, however articles were still not included if they focused on peer or online victimization);
- analysis was conducted using the entire sample of the specified age group (ages 10 to 18).

It should be noted that we limited the inclusion to cross-sectional studies to ensure the inclusion of the largest numbers of surveys. In addition, since the primary purpose of this article is not to determine associations but instead the feasibility of collecting child maltreatment data from youth to estimate prevalence, cross-sectional studies are appropriate. The benefit of including longitudinal studies would be limited, considering that child maltreatment questions are rarely asked in the first wave of a longitudinal study but rather in the later waves where attrition may be an issue.[19,20]

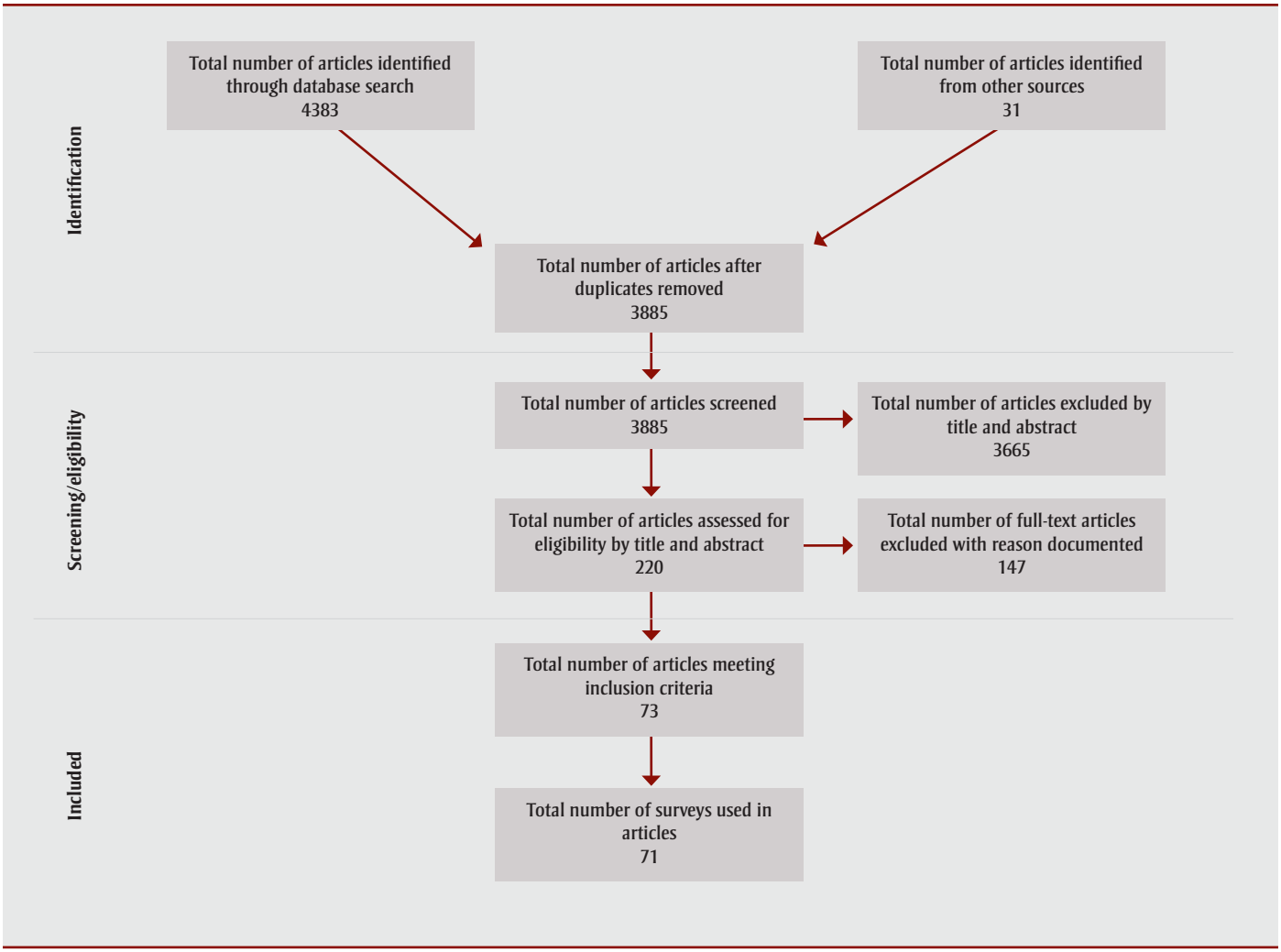
Screening/eligibility (selection process)

Figure 1 shows the process of selecting the articles included in this study. The database search identified 4383 articles; expert consultation and search of reference lists identified another 31 articles. Removing duplicates yielded 3885 articles, and screening by titles and abstracts led to 220 articles to be fully assessed. To these articles, the inclusion criteria noted above were applied by two reviewers independently (J.L., L.T.). The percentage agreement between the coder pairs was 97.9% for titles and abstracts. Articles were excluded when the articles addressed adults' retrospective reports of childhood maltreatment, substance abuse, non-representative samples, newspaper articles, conference abstracts, commentaries, and letters to the editor. Each reviewer also catalogued the reported prevalence of maltreatment by type. Although specific definitions of child maltreatment varied somewhat among the articles, they were conceptually similar enough that the Public Health Agency of Canada's (PHAC) classifications could be applied such as emotional maltreatment (EM), neglect (NG), exposure to intimate partner violence (EIPV), physical and sexual abuse (PA and SA)[21] (Table 1).

We modified a coding key previously used in assessing adults' retrospective exposure to childhood maltreatment.[6] Reliability and validity of the maltreatment measures were noted when reported. Documentation of procedures related to ethics focused on any steps taken to protect confidentiality, offer respondents support, or ease their distress during/following the survey (see Table 2). Information related to survey administration and measures to evaluate data quality were collected from the articles. As well, external sources (e.g. articles or websites) cited in the articles were consulted for information regarding validity and reliability of child maltreatment measures; in some cases, these sources also provided insights into how maltreatment was conceptualized for a survey, or clarified survey procedures. When information in an article included in the review was inconsistent with that provided in an external source, the former took precedence; if information in articles selected for review and pertaining to the same survey conflicted, the article more closely addressing the objectives of the study was used.

As a final step, to verify that the selected articles met the inclusion criteria and to ensure the accuracy of all extracted information, the articles were assessed by two additional reviewers (C.W., S.A., or J.D.);

FIGURE 1
Flow of information through the different phases of the review



any disagreements were discussed until consensus was reached.

Results

From the 3885 articles identified in the online search, 220 were screened in according to the abstract and title. Of these, 73 met the inclusion criteria, representing 71 surveys. Table 3 describes the characteristics of each sample, survey methodology, measures of child maltreatment, reliability and validity, response rates and any steps taken to enhance the response rate, approaches and protocols designed to comfort or reduce the distress of participants, and types of child maltreatment. Schools were most often the place of data collection. Most data were collected via self-administered questionnaire, data were also provided by face-to-face and telephone interviews independent of location. Eleven measures were used and often modified from the original iteration. The Juvenile Victimisation Questionnaire (JVQ) was used most often (eight times), followed by different versions of the Conflict Tactics Scale (CTS) (six times) and the International Society for the Prevention of Child Abuse and Neglect child abuse screening tool—Child (ICAST-CH) (four times). Thirty-seven articles did not provide any information on the specific measures used. In addition, few articles provided information regarding the reliability and validity of measures used. Respondents' response rates ranged from 40.4% to 99.9%. The majority of articles mentioned approaches taken to comfort respondents, although specific information on procedures to reduce distress was scarce.

The most commonly mentioned procedures in place for reducing or dealing with participant distress were as follows: (1) providing respondents with information and telephone numbers of appropriate support services; (2) following up with respondents who disclosed threatening situations; (3) giving focused, sensitivity training to interviewers; (4) alerting appropriate authorities when intervention was deemed necessary. Of course, disclosure to participants of the possibility of alerting authorities could negatively influence participation.

Of the maltreatment types, sexual abuse was captured most frequently in the survey questions (see Table 3). The majority of maltreatment measures specified behaviours, rather than being self-defined; sexual abuse was stipulated with the most detail. Child maltreatment prevalence estimates varied by measure and were not always reported. The heterogeneity of measures and variation in time periods covered precluded meaningful comparisons

TABLE 1
Definition of child maltreatment

Types of maltreatment	Forms of child maltreatment	Questions used to measure child maltreatment
Sexual abuse	Kissing, caressing, fondling and oral sex	How many times has another person touched, grabbed, pinched or brushed against you in a sexual way (which you did not want)?[22]
		Students were asked by their parents to touch the latter's sex organs, or if their own sex organs have been touched by their parents.[23]
		Episodes of unwanted oral sex.[4]
	Attempted rape and rape	Attempts intercourse, completed intercourse and attempts at anal intercourse.[24]
		We define [rape] as someone either having sexual intercourse with you or penetrating your body with a finger or object when you did not want them to, either whether by threatening you, by using force or when you were so small that you didn't know what was happening.[25]
		Somebody tried to undress you in order to have sex with you, had vaginal intercourse [against your will].[26]
	Exposure to pornography, masturbation, flashing	Did anyone show you pornographic material?[27]
		Somebody exposed himself/herself indecently to you [against your will].[26]
		Did anyone make you look at their private parts by using force or surprise, or by "flashing" you?[12]
	Verbal sexual abuse	How many times have you had unwanted sexual comments or jokes directed at you?[22]
		Did anyone hurt your feelings by saying or writing something sexual about your body?[12]
	Online victimization	Did anyone on the Internet ever ask you sexual questions about (himself/herself/yourself) or try to get you to talk online about sex when you did not want to talk about those things?[28]
		Nude photograph(s)/video(s) being uploaded on the Internet against your will.[29]
	Commercial sex	Have you ever experienced that the person/s you met [online] gave you money or a gift in order to have sex with you?[26]
		To be engaged in transactional sex.[30]
	Self-defined	Have you ever been sexually abused?[1]
Physical abuse	Corporal punishment/physical punishment	Your parents spank you on the bottom with their bare hands, hit you on the bottom with something like a belt, ruler, a tick, sweeper or some other hard object, slap you on the hand, arm or leg, pinch you or shake/push you?[31]
		Severe physical punishment resulting in bruises or other forms of injuries.[32]
		Acts traditionally seen as forms of corporal punishment: hair pulling, whipping, smacking.[33]
	Slapped/hit with hand or hard object, punched, beaten	Physical maltreatment and severe physical maltreatment like slapping, hitting […] and […] beating.[34]
		Being beaten […] by a family member.[35]
	Thrown, pushed, knocked down, shaken, kicked	Has any adult ever […] thrown something at you? (followed by question to specify the caregiver).[36]
		Being thrown across the room or against the wall, car, floor or other hard surface by an adult in charge, so that [you] were hurt pretty badly.[4]
	Burned, scalded, choked, head held under water, tied up	"Severe physical maltreatment such as […] burning."[34]
		Being grabbed around the neck or choked by an adult in charge.[4]
		Your parents grab you around the neck and choke you, burn or scald you on purpose.[31]
	Used weapon against	Has any adult […]threatened you with a weapon, such as a knife, stick, a gun?[36]
		Attacked or threatened with a gun, knife, other weapon or other object?[4]
	Self-defined	Having experienced physical violence or having experienced severe physical violence.[15]
Emotional maltreatment	Verbal abuse, belittling	An adult made child scared or feel really bad by name calling, saying mean things.[13]
		Did you get scared or feel really bad because grown-ups in your life called you names, said mean things to you?[37]
	Terrorized, threatened	Threatening to use a gun or knife.[38]
		Your parents threaten to spank or hit you but did not actually do it.[23]
	Inadequate nurturing/affection	Not talking to the child.[39]
		Did you get scared or feel really bad because grown-ups in your life […] say they didn't want you?[37]
	Isolated/confinement	Isolated, confined in a dark room.[32]

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TABLE 1 (continued)
Definition of child maltreatment

Types of maltreatment	Forms of child maltreatment	Questions used to measure child maltreatment
Neglect	Supervisory	Having inadequate supervision and being required to do age-inappropriate chores.[40]
	Physical	When someone is neglected it means that the grown-up in their life did not take care of them the way they should […] [by] make[ing] sure they have a safe place to stay.[37]
		Not receiving adequate food or clothing.[40]
	Medical	When someone is neglected it means that the grown-up in their life did not take care of them the way they should […] [by] taking them to the doctor when they are sick.[37]
Exposure to intimate partner violence	Physical abuse	The young person witnessed his/her parents physically abusing each other.[41]
		Adolescent observed parents punched, hit or beat up one another, choked one another, hit one another with an object.
	Emotional maltreatment	Asked whether if they had ever […] witnessed severe arguments between their parents.[2]
		Adolescent observed parents […] threatening one another with gun, knife or other weapon.[4]

of prevalence estimates. Summary estimates for lifetime prevalence ranged from 0.3% to 44.3% for sexual abuse, 4.2% to 58.3% for physical abuse, 3.1% to 78.3% for emotional maltreatment, 0.9% to 38.3% for neglect, and 0.6% to 30.9% for exposure to intimate partner violence.

Discussion

The findings of this systematic review reflect the extensive effort that has been made to measure child maltreatment at the population level and thus the perceived importance of this problem across the world. The review identified a variety of strategies employed to enhance data accuracy and mitigate participants' distress. Our findings were similar to those found in the review from 2000.[17] However, both our findings and theirs demonstrate that information on child maltreatment can be collected, albeit the issue of inconsistent definitions remains.

Identifying surveys and factors influencing prevalence estimates

Prevalence estimates of child maltreatment varied widely among the studies examined. In assessing findings across surveys, it is important to consider factors intrinsic to self-reporting that can compromise comparability.[24] Barriers include self-blame, cognitive development and age, stigma, fear of retaliation by the perpetrator, and failure to recognize behaviour as abusive.[16] Regarding the latter, differing perceptions of what constitutes discipline versus abuse can contribute to inconsistencies in response.[8] In some cultures, the use of physical punishment is commonplace and even legally accepted,[31,39] while in others it is considered to be abuse.[109] In some studies, behaviours related to sexual abuse were not assessed because the topic was deemed too culturally sensitive.[50,60]

Variations in prevalence estimates of child maltreatment across studies might also be

TABLE 2
Approaches to increase respondent's comfort and response rate

	Definitions
Approaches to increase comfort	**Assent**: Participants who are legally too young to give informed consent, express willingness to participate in research, since they are old enough to understand the purpose of the research.
	Consent: Voluntary agreement of an individual, or his or her authorized representative, who has legal capacity to give consent.
	Active consent: Parent or legal guardian is required to sign and return a form if they approve their child's participation.
	Passive consent: Parent or legal guardian is required to notify the school or researchers if they refuse to allow their child's participation in the research.
	Confidentiality: Measures undertaken to protect secrecy after the data were collected.
	Privacy: Measures taken to ensure respondent privacy during data collection.
	Anonymity: No identifying information was collected.
	Safe settings: The presence of reassuring figures such as teachers and nurses, and also environmental features to maximize the participant's comfort.
	Voluntary: The choice of participating in the study was left to the participant.
	Withdraw: Participants were notified they could terminate the survey at any time during data collection.
Approaches to increase response rate	**Incentive**: Material reward offered to participate in the study.
	Time to complete questionnaire: Time needed to finish survey was recorded.
	Call-backs: Participants unavailable at the time of data collection were contacted later and given a chance to participate.

TABLE 3
Characteristics of reviewed studies

Country	References	Survey name and year	Method of data collection	Sample characteristics	Child maltreatment measures and reliability and/or validity	Response rate	Approaches												Procedures to deal with participant distress	Child maltreatment types				
							to increase response rate			to increase comfort										SA	PA	EM	NG	EIPV
							Incentive	Time to complete questionnaire	Call-back	Assent	Consent	Confidentiality	Privacy	Anonymity	Safe settings	Voluntary	Withdraw							
Brazil	Horta et al., 2014[42] Malta et al., 2014[43]	National Adolescent School-based Health Survey [PENSE], 2012	Self-administered questionnaire	109 104 students, grade 9		Student: 83%						•				•	•			•				
Canada	Saewyc & Tonkin, 2008[1] Tonkin et al., 2004[44] Tonkin, 2005[45] Saewyc et al.,2006[46]	British Columbia Adolescent Health Survey (BC AHS), 2003	Self-administered questionnaire	≈ 30 500 students grade 7–12		School: 76.3%		< 45 min			P	•	•	•	•			Provided respondents with information of support services; gave sensitivity training to interviewers.	•				
	Saewyc & Chen, 2013[22] Saewyc &Green, 2009[47]	BC AHS, 2008	Self-administered questionnaire	29 315 students age 12–19		School: 84.7% Student: 66%		< 45 min			Y/P	•	•	•	•	•		Provided respondents with information of support services; gave sensitivity training to interviewers.	•				
	Cyr et al., 2013[37]	Quebec, 2009	Telephone interview	1400 youths age 12–17	JVQ (adolescent version)			23 min				•		•					•	•	•	•	•
China	Lau et al., 2005[48]	Survey of Drug Use Among Students, 2000	Self-administered questionnaire	93 060 students age 12–19		Student: 87.3%			•			•	•	•		•				•				
	Chan et al., 2013[29]	2009-2010	Self-administered questionnaire	18 341 students age 15–17 in 6 Chinese cities	JVQ α 0.97 (modified SA)	Student: 95.8%					Y		•	•	•	•	•	Provided respondents with information of support services; gave sensitivity training to interviewers.	•				
	Chan, 2011[34]	2004	Face-to-face interview	1094 Chinese children age 12–17	CTS EIPV: α 0.76–0.89 CTSPC α 0.82–0.88	Student: 70.0%					Y/P	•							Provided respondents with information of support services.		•	•	•	•
	Leung et al., 2008[31] Wong et al., 2009[23] Tang, 1994 in Tang, 2006[49]	2005	Self-administered questionnaire	6593 students age 12–16	CTSPC α 0.70–0.86	School: 89.0% Student: 99.7%		30 min			Y	•		•	•	•	•		•	•	•		
Croatia	Aberle et al., 2007[32]	2005	Self-administered questionnaire	2140 students age 14 and 18				45 min				•		•	•						•	•		
	Ajdukovic et al., 2013[50]	2011	Self-administered questionnaire	3175 students age 11, 13 and 16	ICAST-CH modified SA: α 0.68			45 min			P/Y	•[a]		•	•			Provided respondents with information and telephone numbers of appropriate support services.	•	•	•		

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							Incentive	Time to complete questionnaire	Call-back	Assent	Consent	Confidentiality	Privacy	Anonymity	Safe settings	Voluntary	Withdraw					
Denmark	Ellonen et al., 2011[33]	Danish Youth Health Survey, 2008	Self-administered questionnaire	3943 students age 15–16	Danish CTS	School: 35.0% Student: 82.0%							•						•	•		•
	Helweg-Larsen & Larsen, 2006[24] Helweg-Larsen et al., 2011[51] Frederiksen et al., 2008[52]	2002	Self-administered questionnaire	6203 students age 15–16		School: 56.0%					Y	•	•	•	•			Provided respondents with information of support services.	•	•			•
	Van Gastel et al., 2013[53]	Public Health Service School, 2007	Self-administered questionnaire	10 324 students age 11–16		School: 71.0% Student: 84.0%								•	•			Provided respondents with information of support services.	•				•
Finland	Ellonen et al., 2011[33]	The Finnish Child Victim Survey, 2008	Self-administered questionnaire	5762 students age 15–16	Finnish CTS	School: 88.0%							•						•	•		•
	Lepistö et al., 2010[38] Sariola & Uutela, 1992[54]	2007	Self-administered questionnaire	1393 students age 14–17		Student: 78.0%					Y	•	•			•			•	•		•
Ghana	Ohene et al., 2015[55] WHO, 2017[56]	Ghana Global School-Based Student Health Survey (GSHS), 2012	Self-administered questionnaire	1984 senior school students							P			•		•			•			
Germany	Bussmann, 2004[39]	2002	Face-to-face interview	2000 youths age 12–18															•	•		•
Greece	Fotiou et al., 2014[57]	Greek Nationwide School Survey on Substance Use, 2011	Self-administered questionnaire	24 006 students age 15–19		School: 91.0% Student: 86.4%					P/Y			•	•				•			
Haiti	Flynn-O'Brien et al., 2016[58]	Violence Against Children Survey, 2012	Face-to-face interview	2916 youths age 13–24							P/Y	•	•	•				Provided respondents with information of appropriate support services; alerted appropriate authorities.		•			
Iceland	Asgeirsdottir et al., 2011[2]	2004	Self-administered questionnaire	9085 students age 16–19							Y		•			•	•	Provided respondents with information of support services.	•				•
India	Patel & Andrew, 2001[59]	General Health Questionnaire (GHQ), 2000	Self-administered questionnaire	811 students grade 11				90 min						•	•			Provided respondents with information of support services.	•				
Iran	Mahram et al., 2013[60]	2011	Self-administered questionnaire	1028 students age 9–13	α 0.83–0.98		Gift					•								•	•	
Kenya	Seedat et al., 2004[35]	2000	Self-administered questionnaire	901 students grade 10	LEQAV			45–60 min		P				•	•	•			•	•		•
	Okech, 2012[61]	2009-2010	Self-administered questionnaire	430 students age 10–16	My Worst Experiences Scale	Student: 71.6%				Y	P				•				•			

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							Incentive	Time to complete questionnaire	Call-back	Assent	Consent	Confidentiality	Privacy	Anonymity	Safe settings	Voluntary	Withdraw							
Mexico	Borges et al., 2008[25]	Mexican Adolescent Mental Health Survey, 2005	Face-to-face interview	3005 youths age 12–17		Youth: 71%		150 min		Y	P							Provided respondents with information of support services.	•	•			•
	Pineda-Lucatero et al., 2009[27]	2002	Self-administered questionnaire	1067 students age 11–20		Student: 89.1%					Y,P,T,S	•		•	•			Alerted appropriate authorities.	•				
	Frias & Erviti, 2014[62]	National Survey on Exclusion, Intolerance and Violence in Public High School Level Education, 2007	Self-administered questionnaire	13 440 students age 15–18															•	•			•
Malaysia	Ahmad et al., 2014[63]	Malaysia Global School-Based Student Health Survey-2012	Self-administered questionnaire	25 174 students age 12–17		Student: 99.1%					P/Y			•					•	•	•		
	Ahmed et al., 2015[64]	2011	Self-administered questionnaire	3509 students age 10–12	ICAST-CH: Child Exposure to Domestic Violence Scale	Student: 88.9%					S/P	•	•	•	•	•		Provided respondents with information of support services.		•	•	•	•
Nether-lands	Klein et al., 2013[65]	Questionnaire on experience and events in high school students in Curaçao	Self-administered questionnaire	545 students age 11–17				45 min			P	•		•	•	•			•	•	•	•	
New Zealand	Denny et al., 2011[66] Fleming et al., 2007[67] Adolescent Health Research Group, 2008[68]	Youth'01 and Youth'07	Self-administered questionnaire	2001: 9699 students age 13–17 2007: 9107 students age 13–18		School: 2001: 86.0% 2007: 84.0% Student: 2001: 64.0% 2007: 62.0%					S/P/Y	•		•		•	•		•				•
Peru	Fry et al., 2016[69]	National Survey on Social Relations, 2013	Face-to-face interview	1498 youths age 12–17		Youth: 99.9%					Y	•	•			•	•	Alerted appropriate authorities; gave sensitivity training to interviewers; provided respondents with information of support services.	•	•	•		•
Saudi Arabia	Al-Quaiz & Raheel, 2009[70]	2008	Self-administered questionnaire	419 female students age 11–21		Student 80.0–90.0%		15 min				•			•				•				
	Al-Eissa et al., 2016[71] ISPCAN, no date [72]	2012	Self-administered questionnaire	16 939 students age 15–19	ICAST-CH α 0.69–0.86					Y	P	•		•		•	•	Gave sensitivity training to interviewers; provided respondents with information of support services.	•	•	•	•	•
Sri Lanka	Rajindrajith et al., 2014[73]		Self-administered questionnaire	1792 youths age 13–18							P/Y			•	•				•	•	•		

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							Incentive	Time to complete questionnaire	Call-back	Assent	Consent	Confidentiality	Privacy	Anonymity	Safe settings	Voluntary	Withdraw						
South Africa	Seedat et al., 2004[35]	2000	Self-administered questionnaire	1140 students grade 10	LEQAV			45–60 min		P				•	•	•			•	•			•
	Andersson & Ho-Foster, 2008[74]	2002	Self-administered questionnaire	126 696 male students age 10–19									•	•	•	•	•		•				
	Pettifor et al., 2005[30]	National Household Survey, 2003	Face-to-face interview	11 904 youths age 15–24		Youth: 77.2%					P/Y		•						•				
	Waller et al., 2014[75] Young Carers Project South Africa, 2016[76]	Teen Talk 2010-2011	Self-administered questionnaire	3515 youths age 10–17	UNICEF Scales for Sub-Saharan Africa: Child Exposure to Community Violence Checklist	Youth: 97.2%	Refreshment	40–60 min			P/Y	•[a]	•			•	•	Alerted appropriate authorities.	•	•	•		•
Swaziland	Breiding et al., 2013[36]	2007	Face-to-face interview	1292 females age 13–24		Youth: 96.3%					P/Y	•	•		•		•	Provided respondents with information of support services; gave sensitivity training to interviewers.	•	•			
Sweden	Priebe & Svedin, 2012[26] Mossige et al., 2007[77]	2009	Self-administered questionnaire	3432 students age 18		School: 60.5%	School compensated				Y			•		•		Provided respondents with information of support services.	•				
Taiwan	Yen et al., 2008[78]	Project for Health of Adolescents, 2003	Self-administered questionnaire	1684 students age 13–18	Abuse Assessment Screen Questionnaire	Student: 81.0%	Gift				Y		•			•			•	•			
Turkey	Sofuglu et al., 2014[79]	2012	Self-administered questionnaire	7540 students age 11, 13 and 16	ICAST-CH EM: α 0.86; PA: 0.86; NG: 0.81	Student: 85.3%		45 min					•	•						•	•	•	•
UK	Jackson et al., 2016[80]		Self-administered questionnaire	730 students age 13-16	Modified JVQ α 0.51 JVQ correlated to TSC $r = 0.29–0.37$, $p < 0.01$	School: 22.0% Student: 52.0%					P/Y		•						•				
	Radford et al., 2013[81]	2009	Self-administered questionnaire	2275 youths age 11–17	Modified JVQ	Youth: 64%					P/Y	•[a]	•	•				Provided respondents with information of support services; alerted appropriate authorities.	•	•	•	•	•
United States	Finkelhor, Ormrod et al., 2005[12]	Developmental Victimization Survey, 2002-2003	Telephone interview	1000 youths age 10–17	JVQ	Youth: 79.5%	10 $		•		P/Y	•	•					Followed up with respondents who disclosed threatening situations.	•	•	•	•	•

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TABLE 3 (continued)
Characteristics of reviewed studies

Country	References	Survey name and year	Method of data collection	Sample characteristics	Child maltreatment measures and reliability and/or validity	Response rate	Approaches to increase response rate: Incentive	Approaches to increase response rate: Time to complete questionnaire	Approaches to increase response rate: Call-back	Approaches to increase comfort: Assent	Approaches to increase comfort: Consent	Approaches to increase comfort: Confidentiality	Approaches to increase comfort: Privacy	Approaches to increase comfort: Anonymity	Approaches to increase comfort: Safe settings	Approaches to increase comfort: Voluntary	Approaches to increase comfort: Withdraw	Procedures to deal with participant distress	Child maltreatment types: SA	PA	EM	NG	EIPV
United States (cont.)	Finkelhor et al., 2011[82] Finkelhor et al., 2009[28] Mitchell et al., 2011[83] Finkelhor et al., 2005[84] Hamby et al., 2013[85]	National Survey of Children's Exposure to Violence (NatSCEV), 2008	Telephone interview	2095 youths age 10–17	JVQ CM: α 0.39; SA: α 0.35–0.51 Test-retest CM: κ 0.52; 91% agreement (3–4 weeks after); EIPV: κ 1.0; 100% agreement (3–4 weeks after) JVQ correlated to TSC CM: r = 0.14–0.35, $p < 0.01$; SA: r = 0.11–0.34, $p < 0.01$	Youth: 54%	20 $	45 min	•		P/Y	•							Followed up with respondents who disclosed threatening situations; gave sensitivity training to interviewers; alerted appropriate authorities.	•	•	•	•	•
	Finkelhor et al., 2013[13] Hamby et al., 2005[86] Finkelhor et al., 2014[87]	NatSCEV II, 2011	Telephone interview	N not provided youths age 14–17	Validity: JVQ compared with other CM data	Youth: 40.4%	20 $	55 min										Followed up with respondents who disclosed threatening situations; provided respondents with information of support services.	•	•	•	•	•
	Finkelhor et al., 2015[88] Finkelhor et al., 2015[89]	National Survey of Children's Exposure to Violence, 2014	Telephone interview	N not provided youths age 14–17 1949 youths age 10–17	JVQ	Varied by recruitment 15.1%–67.0% Youth: 14.2%–67.0%	5 $, 20 $				P/Y	•						Followed up with respondents who disclosed threatening situations.	•	•	•	•	•
	McLaughlin et al., 2012[40] Strauss, 1979[90] McLaughlin et al., 2013[91] McChesney et al., 2015[92] Merikangas et al., 2009[93]	National Comorbidity Survey – Adolescent Supplement, 2001-2004	Face-to-face interview	6483 youths age 13–17	CTS (modified), Composite International Diagnostic Interview (modified) and Child Welfare Questionnaire	School: 86.8% Student: 82.6%	50 $	≈ 2h30		Y	P								•	•	•	•	•
	Begle et al., 2011[4] Danielson et al., 2010[94] Hawkins et al., 2010[95] McCauley et al., 2010[96] McCart et al., 2011[97] Andrews et al., 2015[98]	National Survey of Adolescents Replication, 2005	Telephone interview	3614 youths age 12–17	SA: α 0.99; PA: α 0.72; EIPV: α 0.64[73]	Youth: 52.2%	10 $	•	•	Y	P	•		•	•	•	•	Provided respondents with information of support services; followed up with respondents who disclosed threatening situations; alerted appropriate authorities .	•	•			•

Continued on the following page

TABLE 3 (continued)
Characteristics of reviewed studies

Country	References	Survey name and year	Method of data collection	Sample characteristics	Child maltreatment measures and reliability and/or validity	Response rate	Approaches												Procedures to deal with participant distress	Child maltreatment types				
							to increase response rate			to increase comfort										SA	PA	EM	NG	EIPV
							Incentive	Time to complete questionnaire	Call-back	Assent	Consent	Confidentiality	Privacy	Anonymity	Safe settings	Voluntary	Withdraw							
United States (cont.)	Haley et al., 2010[99] Oregon Teen Survey, 2005[100]	Oregon Healthy Teen Survey, 2005	Self-administered questionnaire	16 289 students age 13–17								•				•				•				
	Alriksson-Schmidt et al., 2010[101] Eaton et al., 2006[102]	National Youth Risk Behavior Survey (YRBS), 2005	Self-administered questionnaire	7181 female students age 15–18		Student: 52.2%		•				•	•	•		•				•				
	Basile et al., 2006[3] Brener et al., 2004[103]	YRBS, 2003	Self-administered questionnaire	13 080 grade 9–12 students		School: 67.0–100.0% Student: 60.0–94.0%					P		•	•	•	•				•				
	Howard & Wang, 2005[104]	YRBS, 2001	Self-administered questionnaire	13 601 students age 14–18		School: 75.0% Student: 83.0%					P			•		•				•				
	Lippe et al., 2008[105]	YRBS, 2007	Self-administered questionnaire	Samoa: 3625 Northern Mariana Islands: 2292 Marshall Islands: 1522 Guam: 1716 Palau: 732 students age 14–18		School: 100.0% Student: 78.0%–90.0%					P			•		•				•				
	Peleg-Oren et al., 2013[106]	Florida YRBS, 2005	Self-administered questionnaire	4564 students grade 9–12		School × Student: 66.0%		50 min		Y	P		•	•	•	•	•		•				
Namibia, Swaziland, Uganda, Zambia, Zimbabwe	Brown et al., 2009[107] WHO, 2017[56]	GSHS, 2003-2004	Self-administered questionnaire	22 656 students age 13–15		School: 90.0–100.0% Student: 75.0–99.0%							•			•				•				
European Union	Kassis et al., 2013[41] Kassis & Puhe, 2009[108]	Germany, Austria, Slovenia, Spain, 2009	Self-administered questionnaire	5149 students age 13–15	Family Violence Inventory EIPV: α 0.88; EIPV (EM): α 0.85; PA: α 0.83						S/P/Y			•		•		•	Provided respondents with information of support services.		•			•

Abbreviations: CM, child maltreatment; CTS, Conflict Tactics Scale; CTSPC, Parent Child Conflict Tactics Scale; EIPV, exposure to intimate partner violence; EM, emotional maltreatment; ICAST-CH, ISPCAN child abuse screening tool-child; ISPCAN, International Society for the Prevention of Child Abuse and Neglect; JVQ, Juvenile Victimization Questionnaire; LEQAV, Life Event Questionnaire – adolescent version; NG, neglect; P, parent; PA, physical abuse; S, school; SA, sexual abuse; T, teacher; TSC, Trauma Symptoms Checklist for Children; Y, youth.

[a] Confidentiality was maintained, except when child was at risk of significant harm, in which case referral was made to the appropriate authorities.

attributable to differences in measures. For example, with the objective of encouraging disclosure of sexual abuse, some surveys stipulate specific behaviours,[3] while others use more generally-worded questions.[101] Some measures of maltreatment are dichotomous (yes-no), in contrast to others that ask for details on severity and frequency.

Dissimilarities in conceptual scope can also influence prevalence estimates. For example, some but not all surveys explicitly include online victimization as a component of sexual abuse. Finally, the particular vocabulary used to describe specific behaviours may also impact comparability. For example, the expression, "forced sex without consent," might be interpreted more broadly than "rape," and thus be more apt to elicit a positive response (and increase apparent prevalence). Neglect was measured in only a few surveys—perhaps reflecting the challenges inherent to capturing it in population surveys. In some communities, relatively lower estimates of neglect were attributable to close social networks and living arrangements.[65] Efforts to improve the collection of data on neglect in population-based surveys and from young respondents are currently under way.[110,111]

Quality of data

The majority of the articles examined provided no detailed information on the reliability or validity of measures used within surveys. Statements such as "the reliability of the scale has been well-documented," or indicating that validity had been determined by the authors, were common but not fully informative. Unfortunately, only three articles reported validity.[80,84,87] In terms of reliability, internal consistency assessed by Cronbach alpha was documented most often followed by interrater reliability assessed as percentage agreement.

Internal consistency may have limited use given that some maltreatment behaviours may not be related. For example, some forms of neglect may not relate to other forms of neglect nor with other types of child maltreatment. Due to these complexities of internal consistency, this measure must be interpreted with caution.[84,112] In general, surveying youth yields data that are only minimally affected by recall bias.[113] Of course, validity may still be compromised by social desirability bias, due to the delicate nature of maltreatment questions. However, research revealed few difficulties arising from the sensitivity of the questions.[24,53,61] The different developmental stage of the reviewed measures may partially explain why few psychometric properties of child maltreatment measures were reported. Newer measures were often adjusted for cultural and language adaptations; continued testing should lead to improvements in data accuracy.

Data quality and response rate are also affected by technical aspects of data collection and the setting in which it takes place. Most of the studies reviewed were based on surveys conducted within schools—where all students were responding to the same survey at the same time—and thus obtained high response rates. However, willingness to participate was not universal among schools, for reasons unrelated to child maltreatment questions.[33,53,57] Research suggests that among students, maximizing privacy and guaranteeing anonymity are effective in ensuring high response rates.[45] The importance of privacy was also underscored in a study in which younger participants (age 10 years) found responding to a survey more upsetting in the presence of the caregiver than when they were alone.[114]

The means by which consent for survey participation is obtained can also affect the response rate; the requirement for consent from parents may discourage participation, especially among youth who have experienced child maltreatment.[47,51,115] Parental passive consent was used in multiple surveys to increase response rate and avoid sampling bias potentially related to active parental consent.[65,80,106] In one study, researchers designed and used a modified consent procedure in case any of the participants were being maltreated by a primary caregiver.[58]

Ethical considerations

Eliciting information about experience with child maltreatment is a delicate matter; the manner in which questions are worded is an important consideration. Even a survey's name can potentially evoke anxiety and may lead to unwillingness to participate (e.g. stronger emotions may be triggered by reference to a survey on "child maltreatment" than to one on "child health"). Similarly, the language used in questions about experience with child maltreatment can affect the respondent. Sensitivity to the potential for adverse reactions is critical, as is a clear statement assuring the anonymity and confidentiality of the survey. However, the review found that some researchers included a confidentiality breach procedure in the consent form if a youth was in need of protection, which allowed automatic referral of participants to appropriate authorities.[50,75,81] This strategy did not negatively affect response rate.[75,81]

This review suggests that youth are generally comfortable in answering questions about their experience with child maltreatment.[12,14,71,116] One study showed that 4.6% of youth reported being upset when answering a child maltreatment survey, but of these, 95.3% said they would nonetheless participate in a similar survey.[116] Interestingly, from the 17.3% of participants who had reported experiences classified as high-risk, only 2% were referred for counselling services[116]. In addition, one article mentioned that sexual abuse questions were not answered by 11% of respondents, but did not offer adequate information to assess if non-responses were higher for sexual abuse questions than for others.[2] However, several researchers concluded that the potential benefits from the information obtained from child maltreatment questions exceed the potential respondent distress.[7,116,117] An earlier study in adolescents comparing stress produced by child maltreatment questions with that arising from questions about school marks found no differences.[118]

Limitations

Several limitations affect this review. First, inconsistencies in child maltreatment measures across surveys—and sometimes even within different cycles of the same survey—made classification challenging. Second, some articles that otherwise met the criteria for inclusion in the review were excluded on the basis of insufficient methodological information. For instance, papers failing to identify the relationship of the perpetrator to the victim or to distinguish between exposure to family violence and community violence were not included. Third, prevalence estimates were not provided in a standardised way. Fourth, steps taken to increase the response rate could often not be distinguished from those taken to increase the comfort of the respondent, so they were considered in

combination. Fifth, measures had often been modified from their original version, and results of validity and reliability testing of the modified versions were not usually provided. Sixth, certain segments of the population were excluded either because they do not attend school or were absent the day of data collection. Seventh, the exclusion of articles in languages other than English limited the international scope of the review. Eighth, only peer-reviewed articles have been included in the review, which may introduce publication bias. Finally, limiting the review to the articles without examining the underlying surveys likely resulted in the exclusion of some relevant information.

Implications

This review shows that child maltreatment is a common concern across a range of societies and cultures although Canadian national data were missing. As evidenced by the large number of self-report surveys and studies asking youth about their level of comfort, data on child maltreatment can be collected responsibly and ethically from youth in a way that protects their health and well-being.[14,116] Surveillance and research on child maltreatment would benefit greatly from the routine inclusion of questions on the subject in population-based self-report health surveys. Hovdestad and Tonmyr[119] stressed the importance of setting the stage for inclusion of child maltreatment questions in surveys by a) preparing for early resistance, b) building a broad base of support, c) having knowledge of the current literature (including issues addressed in this article), and d) being willing to compromise and showing determination. Data collected on a regular basis would provide the opportunity for enhancing our understanding of the burden and the factors that are correlated with child maltreatment.[120] Schools could be an excellent venue for data collection due to high participation in these surveys and high enrolment among youth. After required discussions and agreements with the appropriate school authorities, it is easy to have procedures in place to obtain youth consent to participate and parents/caregivers passive consent. To maximize the quality of the data, measures used in collection should undergo reliability and validity testing, and all aspects of the survey methodology should be sound. Behaviour-based questions with response options capturing severity and frequency are also recommended.

Protocols to address potential participant distress should be established, and interviewers should be trained to conduct research sensitively and appropriately. Effective means of evaluating participant distress should be refined and applied, and the results of such evaluations should inform questionnaire design and language. Surveys should be conducted according to a strict code of ethics, the overarching goals of which should be the protection of privacy and confidentiality, and respect for respondents.

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Conflicts of interest

There is no conflict to declare.

Authors' contributions and statement

L.T. conceived and designed the study. C.W., L.T., and J.L. wrote the paper: L.T. wrote the protocol, with input from the others. J.L., L.T., C.W., J.D., and S.A. extracted and categorized the data. L.T. led the evaluative component.

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