

# Who perpetrates violence against children? A systematic analysis of age-specific and sex-specific data

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## ABSTRACT

**Objective** The epidemiology of violence against children is likely to differ substantially by sex and age of the victim and the perpetrator. Thus far, investment in effective prevention strategies has been hindered by lack of clarity in the burden of childhood violence across these dimensions. We produced the first age-specific and sex-specific prevalence estimates by perpetrator type for physical, sexual and emotional violence against children globally.

**Design** We used random effects meta-regression to estimate prevalence. Estimates were adjusted for relevant quality covariates, variation in definitions of violence and weighted by region-specific, age-specific and sex-specific population data to ensure estimates reflect country population structures.

**Data sources** Secondary data from 600 population or school-based representative datasets and 43 publications obtained via systematic literature review, representing 13 830 estimates from 171 countries.

**Eligibility criteria for selecting studies** Estimates for recent violence against children aged 0–19 were included.

**Results** The most common perpetrators of physical and emotional violence for both boys and girls across a range of ages are household members, with prevalence often surpassing 50%, followed by student peers. Children reported experiencing more emotional than physical violence from both household members and students. The most common perpetrators of sexual violence against girls aged 15–19 years are intimate partners; however, few data on other perpetrators of sexual violence against children are systematically collected internationally. Few age-specific and sex-specific data are available on violence perpetration by schoolteachers; however, existing data indicate high prevalence of physical violence from teachers towards students. Data from other authority figures, strangers, siblings and other adults are limited, as are data on neglect of children.

**Conclusions** Without further investment in data generation on violence exposure from multiple perpetrators for boys and girls of all ages, progress towards Sustainable Development Goals 4, 5 and 16 may be slow. Despite data gaps, evidence shows violence from household members, peers in school and for girls, from intimate partners, should be prioritised for prevention.

## What is already known on this topic?

- Previous large-scale studies synthesising global violence data have estimated the proportion of the population who experience violence at any time during 'childhood', adolescence or over the past year.
- The basic epidemiology and patterning of different forms of violence by different perpetrators are likely to differ vastly by both sex and specific age.
- Age-specific, sex-specific and perpetrator-specific prevalence estimates of violence against children are not comprehensively available.

## What this study hopes to add?

- Estimates based on available data suggest that the most common perpetrators of physical and emotional violence for both boys and girls across a range of ages are household members, followed by peers in school.
- The most common known perpetrators of sexual violence against girls aged 15–19 years are intimate partners. However, few data on sexual violence exist on other age groups or for boys.

**Trial registration number** PROSPERO 2015: CRD42015024315.

## INTRODUCTION

Globally, levels of violence against children are worryingly high. More than 50% of children report experiencing some form of physical, sexual, emotional violence or neglect in the past year,<sup>1</sup> and global meta-analyses suggest that about 10% of boys and 20% of girls have experienced sexual violence in their lifetime.<sup>2–3</sup> Violence during childhood has a negative impact on brain development<sup>4,5</sup> and well-documented adverse health and social consequences, including increased risk of later mental health disorders, sexually transmitted infection, substance use, obesity,



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## Box 1 Defining violence

What is considered violence, abuse, punishment, aggression and discipline can differ considerably: across countries, across time, and by the nature of the relationship between people who are using or experiencing different physical, sexual and emotional behavioural acts.

In this paper, we include acts from survey modules asking parents about disciplining their children, asking students about fighting with their peers and asking adolescents about their experiences in intimate partnerships, among other measures. Within each of these relationships, there will be a heterogeneity of different power arrangements. Some argue that abuse of power is central to defining different physical, sexual and emotional acts as 'violence', and others may argue that inherent in each of these dyads are unequal power relationships which mean that a range of acts can be classified as 'violence'. Similarly, what might be framed as a 'discipline practice' (and therefore, as more acceptable) in one context at one time (eg, hitting children on the buttocks with stick), might be framed as 'violence' (and therefore less acceptable) in that same context at a different time. We acknowledge that differing levels of acceptability of violence may influence reporting of prevalence. However, there is clear evidence that exposure to different acts of physical, sexual and emotional violence has adverse health and developmental outcomes.

In this paper, we take a broad view and include a wide range of acts which could have adverse consequences ranging from severe to none. It is important to recognise however that many of these acts will not be seen as 'violence' or 'abuse' (ie, they will be seen as acceptable) by different groups in different countries.

poor academic outcomes and psychosocial well-being.<sup>6–10</sup> Since the landmark World Report On Violence Against Children,<sup>11</sup> this issue has increasingly become the focus of global aid and policy agendas. Commitments to reduce violence in childhood now feature in Sustainable Development Goals (SDGs) 4, 5 and 16.

Previous large-scale studies synthesising global violence data have estimated the proportion of the population who experience violence at any time during childhood,<sup>2,3</sup> during adolescence<sup>12</sup> and more recently, over the past year.<sup>1</sup> However, the epidemiology of violence is likely to differ by age and sex. The aims of this paper are to synthesise information on: (1) the gaps in data on physical, sexual and emotional violence and neglect by age, sex and geographical region and (2) the prevalence of past-year physical, sexual and emotional violence and neglect against male and female children and adolescents, at each age from 0 to 19 years, by perpetrator.

Given the variations in the definitions and meanings of violence across contexts, we purposively take a broad view, including acts which may be framed as aggression, abuse and discipline to varying degrees in different contexts (box). We build on previous synthesis efforts<sup>1,13</sup> by examining data coverage and prevalence by sex at each individual year of age from 0 to 19 years, rather than across broad age categories. Other forms of violence, including exploitation and human trafficking, are outside the scope of our review.

## METHODS

We performed secondary analysis of existing international datasets and a systematic review of published and grey literature.

### Data from large datasets

All relevant international datasets (where the same survey methodology was used in more than one country) known to the authorship team were eligible for inclusion. We analysed data from the Demographic and Health Surveys (DHS, 44 countries); the Multiple Indicator Cluster Surveys (MICS, 35 countries); the WHO Multi-Country Study on Women's Health and Domestic Violence Against Women (WHO MCS, 11 countries); the Reproductive Health Surveys (RHS, 6 countries); the Global Student Health Surveys (GSHS, 78 countries); the Health Behaviour in School-Aged Children (HBSC, 39 countries); the Violence Against Children Surveys (VACS, 4 countries); EU Kids Online (25 countries); Progress in International Reading Literacy Study (PIRLS, 46 countries); Trends in International Mathematics and Science Study (TIMSS, 69 countries) and combined TIMSS/PIRLS surveys (33 countries). We also included data from the UBS Optimus study in China and the Good Schools Study in Uganda. Estimates for age-specific and sex-specific prevalence of different forms of violence and perpetrators of violence (where applicable) were produced, accounting for the complex sampling scheme employed in each survey. These estimates were combined with data extracted from studies identified via the systematic review. We could not obtain data from the Balkan Epidemiological Study on Child Abuse and Neglect (BECAN).

### Systematic review: database search strategy

We searched the following databases from first record to 7 December 2015: MEDLINE, EMBASE, PsycINFO and Global Health. Controlled vocabularies of each database were used to tailor search terms; for example, MeSH terms for MEDLINE. Search terms included words related to violence and maltreatment, children and study filters to identify observational studies and trials which might have survey data (further described in online supplementary annex 1). There were no restrictions on language or year of publication and therefore data are represented up to December 2015.

### Inclusion criteria

Studies reporting on the prevalence of physical, sexual and emotional violence and neglect, as well as perpetrators of various forms of violence against children aged 0–19 years, were considered for inclusion. We also included studies reporting on witnessing domestic or intimate partner violence. All author definitions of these forms of violence, and of perpetrator, were accepted. Only studies using a survey methodology to gather data from participants sampled to represent a geographic area, or school-based populations of young people, were considered. Self-reports on experience of violence were

included, and studies using proxy reports for younger children were included (eg, the MICS, which gathers parent's and household members reports of their use of psychological and physical aggression against children aged 2–14 years). Only studies in which reports of violence were over a narrow age range (5 years or less) were included in meta-regressions; most estimates were specific to children at each single year of age. Similarly, most studies had a recall period of 1 year, but those with recall periods below 1 year were also included in meta-regressions. In the partner violence meta-regression one estimate had a recall period of 18 months, which was included and adjusted for in analysis.

### Screening and data extraction

Screening of abstracts and full text articles was performed by KM, LM and AW. KM performed initial screening to remove irrelevant titles. Due to the volume of results, double screening of abstracts was not employed. Instead, KM, LM and AW screened a subset of 150 articles together using standardised inclusion criteria, discussing application of the criteria until consistency was reached. Remaining abstract screening was done by one reviewer. Data on study characteristics and quality were extracted by KM or LM, into a customised Google form database created by LM. KM and LM discussed any questions on a weekly basis. Definitions of violence varied considerably across studies, and each definition was recorded in detail.

### Quality appraisal

We describe the quality of estimates and considered the following characteristics to be higher quality: whether studies were nationally representative versus representative of a smaller geographic area, since prevalence may differ within geographical areas within a country); whether study questions ask about specific behavioural acts of violence (vs generic 'violence' exposure, because the former avoids participants' subjective decisions about what constitutes 'violence'); whether multiple items were used to assess exposure to violence (vs single items because asking about multiple specific acts will yield more accurate prevalence estimates); whether an anonymous disclosure method was used, versus a face to face interview, was described, because anonymous methods tend to produce more disclosures<sup>14</sup> and whether children were able to self-report (vs a proxy report was relied on). Children's own reports may be increasingly accurate as they age, especially for more hidden or stigmatising forms of violence. However, very young children may not remember all of the violence they have experienced; in which case proxy reports may be more reliable. We described whether interviewers were trained on violence (vs not, as more interviewer training results in higher levels of disclosure in studies on violence against women); and whether the study was specifically about violence or maltreatment exposure (vs another topic, as studies which intend to measure violence are likely to differ from general studies on a number of quality

criteria). Participation rates and levels of missing data are also described.

### Data synthesis

Data from the systematic review and dataset analyses were combined. We describe overall coverage of data by geographic region, sex, age, perpetrator category and form of violence (tables 1 and 2). Where studies did not report prevalence as a percentage or proportion with a standard error or 95% CI, we calculated these based on data provided in reports or via contact with authors where possible. Estimates from groups of fewer than 10 participants were excluded.

Where the number of sex-specific prevalence estimates per perpetrator for a given form of violence was greater than 50, we performed random effects meta-regressions<sup>15</sup> (using the `metan` command in Stata 14) to estimate the prevalence of exposure to violence for each sex and year of age. Unadjusted estimates are presented in online supplementary annex 2. Covariates for each regression model are described in online supplementary annex 4. Estimates were adjusted for relevant quality covariates and also by definitions of violence such that overall estimates would reflect higher quality studies with the 'best' definition, for example measures that include more specific acts of violence. Details of data sources and definitions of violence for each meta-regression model are specified in online supplementary annex 3. Estimates were then weighted by WHO region age-specific and sex-specific population data to ensure overall estimates would be reflective of country population structures. The mean estimate and 95% CI for each age are plotted separately in bar graphs (figures 1–4). In cases where a given age had fewer than 10 estimates, unadjusted estimates from meta-analysis<sup>16</sup> are presented in the same bar graphs (noted in footnotes) as estimates from meta-regressions. These are unadjusted for country-population age structures and should not be interpreted as globally representative. Prevalence figures and CIs for each age-specific estimate presented from meta-regression in figures are in online supplementary annex 5.

Where the number of prevalence estimates per perpetrator (over all age and sex categories) for a given form of violence was fewer than 25, we display estimates on a forest plot separately by age and did not attempt to quantitatively synthesise them.

Most studies reported violence exposure over a 1-year age range. Where studies reported violence over a larger age range, we took the midpoint of the age range and assumed the prevalence pertained to that age (eg, for a sample 15–17 year olds reporting only an average prevalence, we modelled as the prevalence at age 16 years). For studies where the recall period was below 1 year, we counted that prevalence as past-year prevalence.

Our goal is to understand who the most common perpetrators of violence by age and sex in the whole

**Table 1** Data coverage of prevalence estimates of violence against children

	Number of estimates	Number of countries	Number of studies
<b>Total</b>	13 830	171	643
<b>Sex</b>			
Male	6334	154	609
Female	7496	151	643
<b>Form of violence</b>			
Emotional	4613	14	418
Physical	6024	170	591
Sexual	567	57	72
Neglect	0	0	0
Witnessing IPV	0	0	0
Physical/emotional	2267	123	243
Physical/emotional/neglect	38	1	1
Physical/emotional/sexual	271	45	45
Physical/sexual	48	13	14
Physical/emotional/sexual/witnessing	2	1	1
<b>Region (WHO)</b>			
African region	2487	34	75
Americas region	2379	36	93
Eastern Mediterranean region	2333	20	91
European region	4878	52	289
South-east Asia region	417	8	23
Western Pacific region	1336	20	72
<b>Main perpetrator groupings</b>			
Parent/Caregiver/Household member	2354	48	49
Student	9149	136	484
Peer (any peers either from school, home, other)	455	27	312
Boyfriend/Girlfriend/Intimate partner	1355	54	69
Teacher	48	1	1
Stranger	0	0	0
Adult	2	1	1
Authority figures	42	3	3
Any perpetrator	237	17	24
Other	188	5	5
<b>Included in meta regression</b>			
Physical violence from students, boys	2157	134	471
Physical violence from students, girls	2092	134	471
Physical violence from household members (proxy reports), boys	559	43	43
Physical violence from household members (proxy reports), girls	559	43	43
Physical violence from intimate partners, girls	341	47	58
Emotional violence from students, boys	1287	82	309
Emotional violence from students, girls	1239	82	309
Emotional violence from household members (proxy reports), boys	546	43	44

Continued

Table 1 Continued

	Number of estimates	Number of countries	Number of studies
Emotional violence from household members (proxy reports), girls	546	43	44
Emotional violence from intimate partners, girls	311	45	50
Sexual violence from intimate partners, girls	323	45	53
<b>Included in meta-analysis</b>			
Physical violence from authority figures, boys	30	5	5
Physical violence from authority figures, girls	30	5	5
Physical violence from caregivers (child self-reports), boys	30	5	5
Physical violence from caregivers (child self-reports), girls	30	5	5
Emotional violence from caregivers (child self-reports), boys	15	2	2
Emotional violence from caregivers (child self-reports), girls	15	2	2
<b>Not presented in this paper</b>			
Sexual violence from any perpetrator, girls	66	8	8
Sexual violence from any perpetrator, boys	52	8	8

population are and therefore to compare prevalence across groups with different denominators. This required us to adjust estimates on school violence from school-based surveys and intimate partner violence from ever-partnered young people, as not all young people attend school or are in intimate relationships (and therefore by definition are not exposed to these forms of violence). Estimates provided with students as the denominator were adjusted by the WHO regional estimation proportion of students attending primary and secondary schools.<sup>17</sup> Estimates provided with the ever-partnered proportion of the survey population as the denominator were adjusted by the proportion of country populations which had ever had sex by age 20 years (using DHS data<sup>14</sup>), to make them reflect the prevalence of different forms of partner violence in the entire population (rather than only the ever-partnered population).

### Patient involvement

Some of the original studies or surveys used in this review do routinely share results with children participants, namely HBSC surveys. This paper was produced as part of the kNOW Violence in Childhood initiative, which disseminates results from the larger initiative to children and adolescents.

## RESULTS

### Data coverage

In total, we retrieved 643 studies from 171 countries, containing 13830 separate age-specific and sex-specific prevalence estimates (figure 1).

Overall availability of estimates is described in table 1. Europe had substantially more data which met our inclusion criteria compared with other regions, and the South-East Asia Region had very few estimates compared with other regions. Physical violence was most commonly reported in an age-specific and sex-specific way, followed by emotional violence. Far fewer estimates were available for sexual violence, and no estimates for neglect or witnessing intimate partner violence were age-specific and sex-specific.

Breaking down the number of available estimates by sex and perpetrator (table 1), the most commonly measured forms of violence were physical and emotional violence from students towards other male and female students, followed by physical and emotional violence from caregivers towards boys and girls, followed by intimate partner violence against girls and then physical violence against boys and girls from 'authority figures'. There were too few estimates on forms of violence perpetrated by strangers, teachers, other adults or from overall categories of 'any perpetrator' (ie, from all perpetrators combined), to compute overall prevalence figures, so these are not presented in this paper.

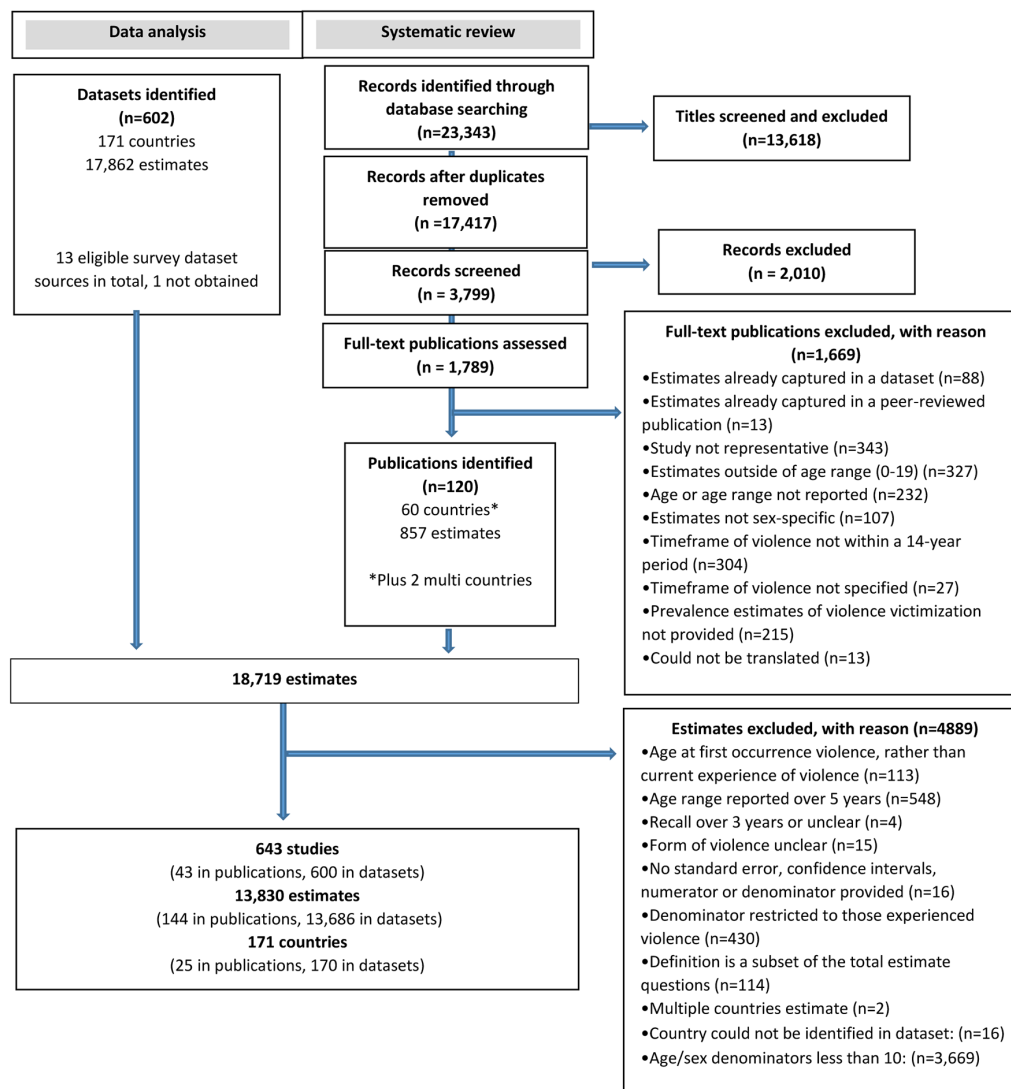
Table 2 shows the overall breakdown of available data sources by age. Far more data were available for the adolescent period, from about age 11 upwards, versus age 10 and below. Table 2 also shows data sources by age—strikingly, almost all data for the under 8-year-old age group came from the MICS, which measures caregivers reports of physical and psychological aggression against their children. For 8–11 year olds, data comes almost exclusively from MICS and PIRLS and TIMSS,

**Table 2** Number of prevalence estimates for all forms of violence by age and data source

Age	Estimates	Countries	Studies	Sys Rev	DHS	WHO	RHS	MICS	HBSC	GSHS	PIRLS	TIMSS	EU kids	VACS	Optimus	GSS
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	178	44	44	0	30	0	0	140	0	0	0	0	0	0	8	0
3	178	44	44	0	30	0	0	140	0	0	0	0	0	0	8	0
4	178	44	44	0	30	0	0	140	0	0	0	0	0	0	8	0
5	178	44	44	0	30	0	0	140	0	0	0	0	0	0	8	0
6	184	46	46	4	30	0	0	140	0	0	0	2	0	0	8	0
7	200	49	52	0	30	0	0	140	0	0	12	10	0	0	8	0
8	392	69	99	8	30	0	0	140	0	0	118	88	0	0	8	0
9	1102	105	261	0	30	0	0	140	0	0	517	330	50	0	8	27
10	1205	108	277	6	30	0	0	140	0	0	557	360	50	0	8	54
11	1429	110	309	2	30	0	0	140	336	0	493	316	50	0	8	54
12	1350	142	337	4	30	0	0	140	0	366	295	403	50	0	8	54
13	1865	151	403	10	30	0	0	140	336	416	135	657	50	29	8	54
14	1410	147	330	15	30	0	0	140	0	420	38	625	50	30	8	54
15	1633	152	262	33	102	8	20	0	336	420	16	547	50	31	16	54
16	870	111	230	30	286	20	24	0	0	38	8	413	50	31	16	54
17	645	86	166	15	221	32	24	0	0	30	2	247	0	31	16	27
18	466	71	124	15	244	40	24	0	0	0	0	112	0	31	0	0
19	367	56	93	2	256	44	24	0	0	0	0	10	0	31	0	0
Total	13830	—	—	144	1399	144	116	1820	1008	1690	2191	4120	400	214	152	432

PIRLS/TIMSS combined surveys are included under PIRLS (school grade 4).

DHS, Demographic and Health Surveys; GSHS, Global Student Health Surveys; GSS, Good Schools Study; HBSC, Health Behaviour in School-Aged Children; MICS, the Multiple Indicator Cluster Surveys; PIRLS, Progress in International Reading Literacy Study; RHS, Reproductive Health Surveys; TIMSS, Trends in International Mathematics and Science Study; VACS, Violence Against Children Surveys.



**Figure 1** Flow chart describing data inclusion.

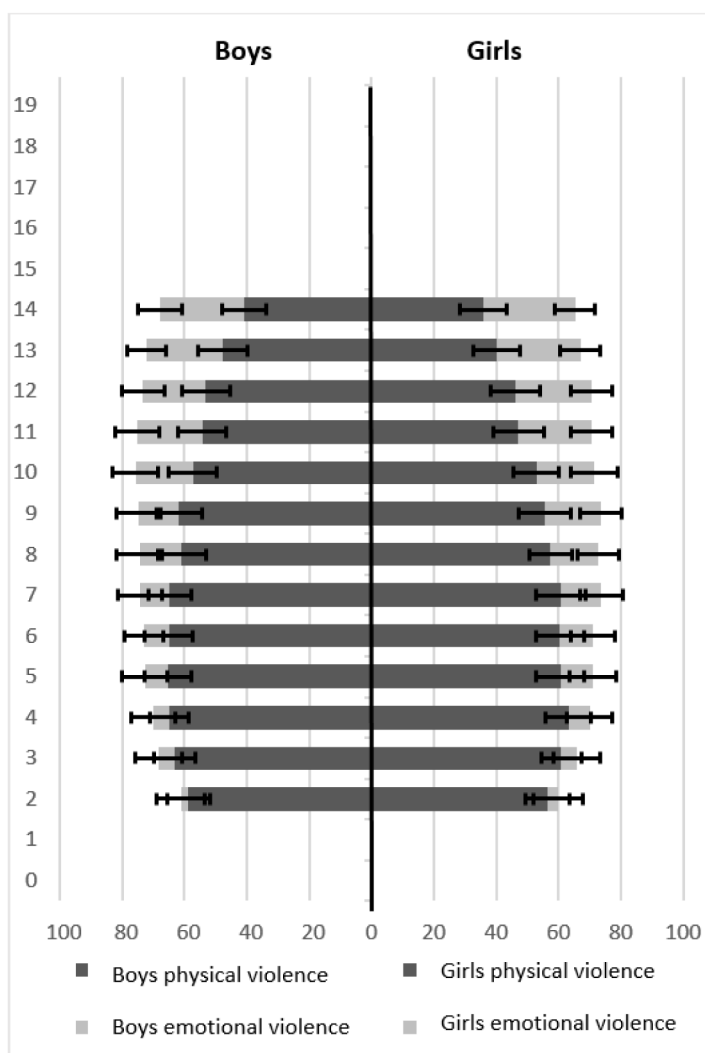
which are school-based surveys measuring violence from students to other students. Almost no surveys which met our inclusion criteria measured violence from other perpetrators, or sexual violence, against children below 11 years. Most surveys which measure sexual violence concentrated on the adolescent period. Online supplementary annex 6 shows the data sources by geographic region; and online supplementary annex 7 shows the number of available estimates by perpetrator and form of violence.

### Prevalence of recent physical and emotional violence perpetrated by household members

Household members appear to be the most common perpetrators of physical and emotional violence against children, based on available data. However, caregiver and child reports differ radically in terms of prevalence and hence are summarised separately. Very few caregiver-reported data are available for children above age 14 years and no data for those below 2 years old. All caregiver-reported data come from MICS and DHS and is over a

past-month recall period. Based on caregiver's reports, for children aged 2–14 years, levels of past month emotional violence are higher than for physical violence (figure 2). Levels of past-month emotional violence remain relatively constant over age group, with about 60%–70% of boys and girls experiencing emotional violence from a caregiver or other household member at age 2–14. Levels of past-month physical violence are highest in younger age groups, with between 50% and 60% of girls and boys experiencing physical violence at age 2. Levels of past-month physical violence appear to decline slowly as age increases, and at age 14, about 40%–50% of boys and girls experience physical violence from a caregiver or household member. Levels of emotional violence however remain relatively constant over age, for both boys and girls.

There are relatively few studies which collect children's reports of physical and emotional violence perpetrated by caregivers (see online supplementary annex 8) and also report age-specific and sex-specific prevalence. These few provide data on caregiver-perpetrated violence for



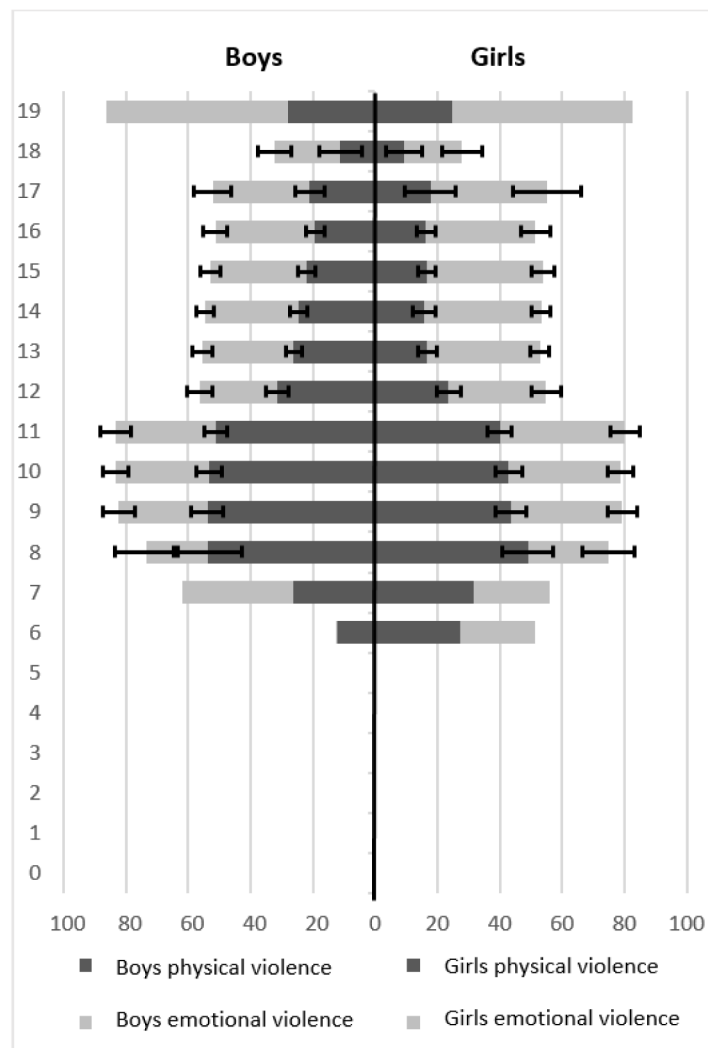
**Figure 2** Prevalence of recent physical and emotional violence perpetrated by household members. Data sources: MICS, DHS. Model shows caregivers reports of physical aggression by household members. Definitions are provided in online supplementary annex 3 and exact prevalence numbers are provided in supplementary annex 5. To read bar graph: age of the child is on the y-axis; prevalence of each form of violence is on the x-axis. Prevalence corresponds to the distance of the bar along the x-axis for boys (to the left) and girls (to the right). Forms of violence are overlaid; and the black bars are a 95% CI. For example, for girls aged 2 years, the prevalence of physical violence is 56% (95% CI 49% to 63%), and the prevalence of emotional violence is 60% (95% CI 52% to 68%). DHS, Demographic and Health Surveys; MICS, Multiple Indicator Cluster Surveys.

children aged 9–19 years. In general, the prevalence is far lower when compared with caregiver reports at each age. There is some suggestion from children's reports that the prevalence of past-year physical violence from caregivers may decline over age, similar to caregiver reports. Children's reports of emotional violence from caregivers are also rare, with only two studies reporting age-specific and sex-specific data on this for children aged 9 to 19 years. Estimates are far lower compared with caregiver reports, with fewer than 10% of 12-year olds reporting past-year emotional violence from caregivers, but nearly 40% of 19-year olds. There is some suggestion that prevalence of past-year violence increases over age group (in contrast to parent reports, which remain more constant over age group). There were no data available on sexual abuse from parents/caregivers which met the inclusion criteria.

### Prevalence of recent physical and emotional violence perpetrated by students

Students are the second most common perpetrator of physical and emotional violence against children at the population level, based on available data. Globally, between 70% and 80% of all boys and girls aged 8 to about 11 years have experienced past-year emotional violence from a school student (figure 3). For those ages 12–17, prevalence is about 50%, reflecting the fact that fewer children attend secondary school globally versus primary school. Restricting to school-going children only, the prevalence of emotional violence is relatively constant across age groups (see online supplementary annex 9). Age-specific and sex-specific data prior to age 6 are not available (although fewer children under age 6 will be in school). Levels of past-year physical violence



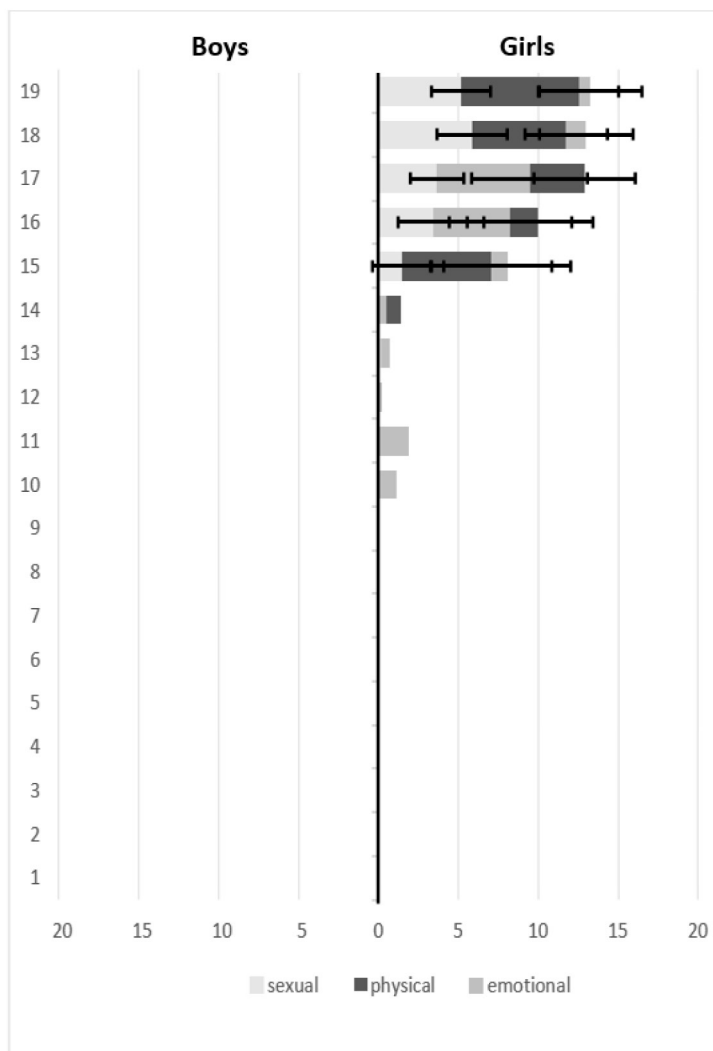


**Figure 3** Prevalence of physical and emotional violence perpetrated by students against boys and girls in the past 12 months. Data sources: GSHS, HBSC, PIRLS, TIMSS and systematic review publications. Model shows children's self-reported exposure. Definitions are provided in online supplementary annex 3 and exact prevalence number are provided in online supplementary annex 5. Pooled prevalence estimates at ages 6, 7 and 19 years are from unadjusted meta-analyses, all others are adjusted meta-regression estimates. To read bar graph: age of the child is on the y-axis; prevalence of each form of violence is on the x-axis. Prevalence corresponds to the distance of the bar along the x-axis for boys (to the left) and girls (to the right). Forms of violence are overlaid; and the black bars are a 95% CI. For example, for boys aged 8 years, the prevalence of physical violence is 54% (95% CI 43 to 65) and the prevalence of emotional violence is 74% (95% CI 63% to 84%). Note that these estimates are for the entire population, not just school-attending boys and girls. GSHS, Global Student Health Surveys; HBSC, Health Behaviour in School-Aged Children; PIRLS, Progress in International Reading Literacy Study; TIMSS, Trends in International Mathematics and Science Study.

experienced by students are also high—from each age after age 8 to about age 11, about 40% of girls and 50% of boys experienced past-year physical violence from a student. In boys, from age 12, prevalence declines slightly over increasing age; for girls from age 12, prevalence remains more constant. In girls, overall levels are lower in most age groups versus boys, which partly reflects that fewer girls attend school globally versus boys.

### Prevalence of recent physical, emotional and sexual violence perpetrated by intimate or dating partners

Based on available data, intimate partners are the third most common perpetrator of violence against girls in childhood. However, very few estimates for boys of any age, or girls below the age of 15, are available (figure 4). Data are available for girls aged 15–19, largely owing to inclusion of this age group in the DHS. Past-year physical and emotional violence by intimate or dating

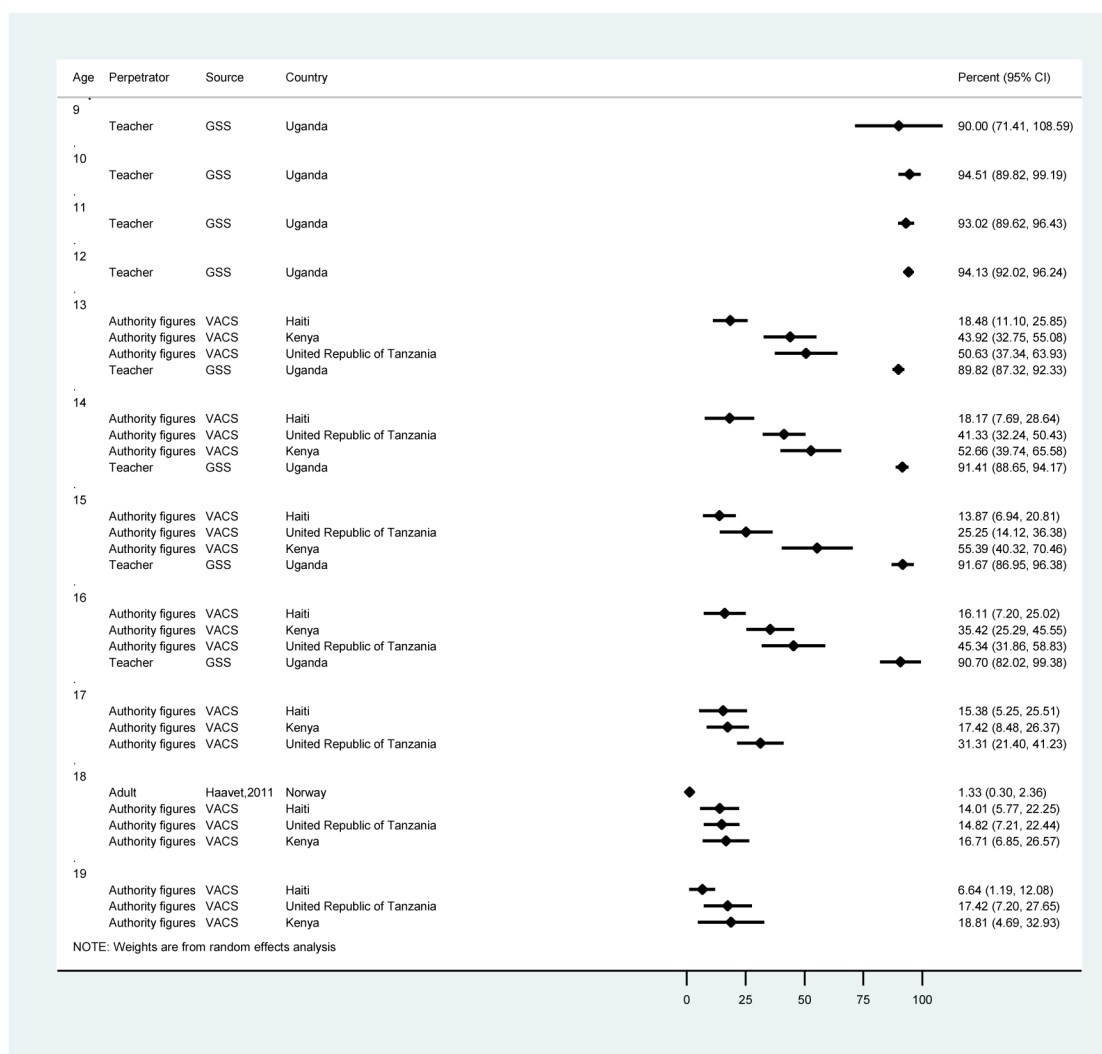


**Figure 4** Prevalence of physical, emotional and sexual violence perpetrated by intimate or dating partners against boys and girls in the past 12 months. Data sources: DHS, WHO VAW, RHS, GSS and VACS (for physical violence only) and systematic review publications. Model shows children's self-reported exposure. Definitions are provided in supplementary annex 3 and exact prevalence number are provided in online supplementary annex 5. Pooled prevalence estimates at ages 10, 11, 13 and 14 years are from unadjusted meta-analyses all others are adjusted meta-regression estimates. To read bar graph: age of the child is on the y-axis; prevalence of each form of violence is on the x-axis. Prevalence corresponds to the distance of the bar along the x-axis for boys (to the left) and girls (to the right). Forms of violence are overlaid; and the black bars are a 95% CI. For example, for girls aged 19 years, the prevalence of sexual violence is 5.2% (95% CI 3.3% to 7.0%); the prevalence of physical violence is 12.6% (95% CI 10.1% to 15.0%); and the prevalence of emotional violence is 13.24% (95% CI 10.01% to 16.47%). Note that these estimates are for the entire population, not just ever-partnered boys and girls. DHS, Demographic and Health Surveys; GSHS, Global Student Health Surveys; GSS, Good Schools Study; HBSC, Health Behaviour in School-Aged Children; RHS, Reproductive Health Surveys; VACS, Violence Against Children Surveys; WHO VAW, WHO Multi-Country Study on Women's Health and Domestic Violence against Women.

partners are reported by about 7% of all girls aged 15, to about 13% of all girls aged 19 years. Past-year sexual violence from intimate and dating partners is reported by about 2% of all girls aged 15, but increases over age such that about 5% to 7% of girls aged 18 and 19 years report past-year sexual victimisation. Prevalence as a proportion of ever-partnered girls is provided in online supplementary annex 9.

#### Prevalence of recent physical violence by teachers, other authority figures and other adults

Very few studies provided age-specific and sex-specific period prevalence estimates for physical violence perpetrated by teachers, police and other adults. Prevalence from these studies is displayed individually for each age in figure 5 (girls) and figure 6 (boys). Data are available for children aged 9–18. Estimates of

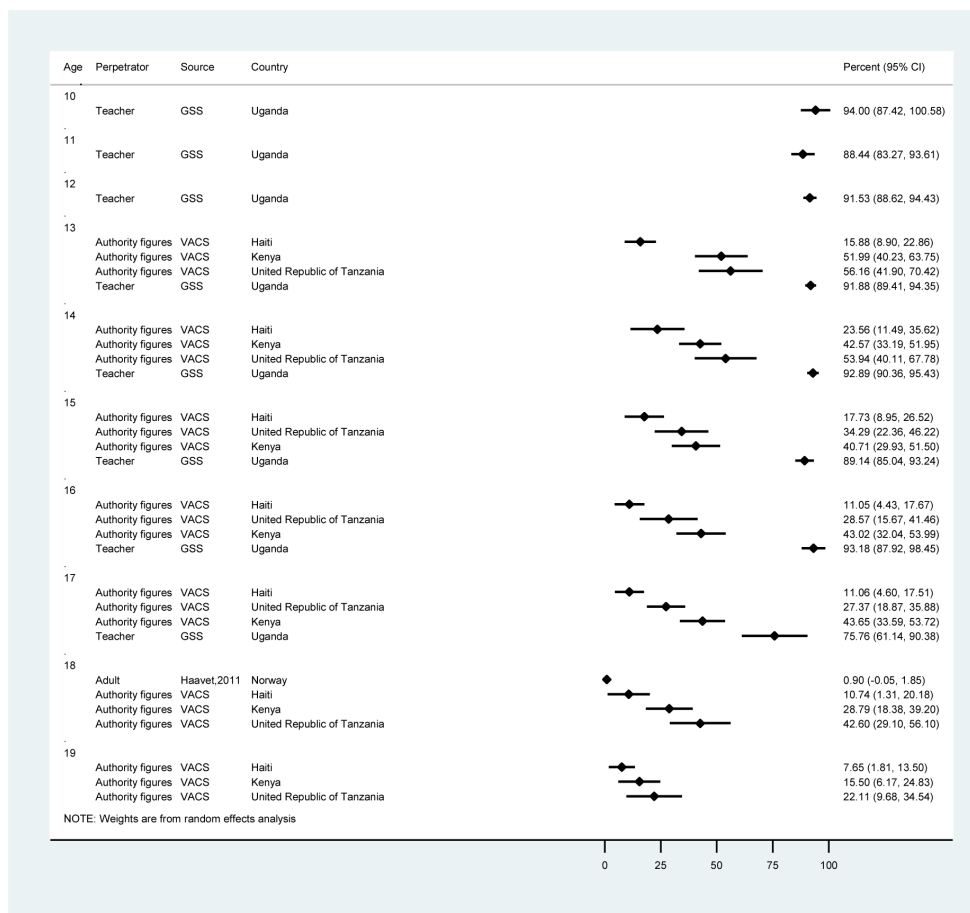


**Figure 5** Prevalence of physical violence perpetrated by teachers, other authority figures and other adults against girls in the past 12 months. Estimates are children's self-reported exposure. Definitions are provided in online supplementary annex 3. To read the forest plot: for each year of age, perpetrator, data source and country are described along the y-axis. Along the x-axis, prevalence estimates from each are represented by a dot, with a bar drawn through to represent the 95% CI. GSS, Good Schools Study; VACS, Violence Against Children Surveys.

violence from teachers come mainly from one study conducted in Uganda, and estimates for authority figures come from the VAC surveys in Kenya, Haiti and Tanzania. Prevalence of physical violence from teachers is extremely high at each age, with more than 75% of 9–16 year olds reporting past-year physical violence from a teacher in Uganda. Violence from authority figures was also common but varied by country, with 6%–23% of Haitian children reporting this across age groups, but with 15% to nearly 60% of Tanzanian children reporting this across age groups. Only one study had data on emotional and sexual violence from teachers,<sup>18</sup> so these data are not summarised here.

## DISCUSSION

We have shown that there are large gaps in existing global data on the prevalence and perpetrators of different forms of violence against children of different ages. There is a severe lack of self-report data on any form of violence against children under about 11 years of age; on sexual violence across a range of ages and on neglect. Age-specific and sex-specific data on witnessing intimate partner violence are also rare. We also know much more about violence perpetrated by students and family members, versus other types of perpetrators—there are little data available on teachers, other authority figures, strangers, siblings, peers outside school settings and other adults. In terms of global availability, more data



**Figure 6** Prevalence of recent physical violence perpetrated by teachers, other authority figures and other adults against boys in the past 12 months. Estimates are children's self-reported exposure. Definitions are provided in online supplementary annex 3. To read the forest plot: for each year of age, perpetrator, data source and country are described along the y-axis. Along the x-axis, prevalence estimates from each are represented by a dot, with a bar drawn through to represent the 95% CI. GSS, Good Schools Study; VACS, Violence Against Children Surveys.

are available from Europe than from other regions, with South-East Asia being particularly under-represented. For both boys and girls, we have little idea of who the main perpetrators of sexual violence are, with the exception of intimate partners for girls aged 15–19 years. Despite data gaps, where we are able to synthesise data, they show that children are most likely to experience physical and emotional violence from family members, followed by fellow students and then intimate partners during adolescence. However, what little data exist on violence from teachers and other authority figures points to very high prevalence in some settings. Data also show variation by age, with emotional violence from both other students and caregivers remaining relatively constant over age, but physical violence from other students and caregivers declining over adolescence. Past-year prevalence of sexual violence from intimate partners appears to rise steadily with age across the adolescent period for girls. For boys, there is little age-specific data available.

As seen with estimates of violence from caregivers/families, prevalence varies widely depending on whether caregivers are reporting or children are reporting. Perhaps

contrary to expectation, caregiver reports, mainly from the MICS, yield higher prevalence estimates versus children's own reports (which tend to be from other surveys). The MICS data on emotional violence, as analysed here, include items measuring shouting, screaming and calling a child stupid or lazy (see online supplementary annex 3), which may occur frequently but may not be viewed as particularly traumatic, which likely will increase disclosure by caregivers. Caregivers may be more likely to report these less severe acts of violence, relative to more severe forms. Children may also be more likely to recall incidents which were severe or traumatic for them, thus biasing self-reported estimates downwards. Additionally, younger children may have more trouble recalling events over a 1-year period versus older children or parents. Further research is needed to understand the reasons for this difference and to understand which types of reports may be useful indicators for different purposes.

### Strengths and limitations

This global review has attempted to provide a more nuanced epidemiological breakdown of the prevalence

of different forms of violence by age, sex and perpetrator. While published data are available from specific studies presenting data across countries,<sup>13 19–21</sup> no global synthesis disaggregated by age is currently available. Our main limitation relates to data presentation of the underlying studies which we have included in the review—if published studies did not present data in an age-specific and sex-specific fashion, we were unable to include them. However, what we have synthesised represents the evidence from published data and large international datasets and therefore the knowledge base available to those developing age-appropriate violence prevention programmes and allocating funding. We were also unable to access one dataset which would have met the inclusion criteria (BECAN), and there may be others which our systematic search efforts did not pick up. We produced global average prevalence estimates—where there were enough data, we modelled these using meta-regression techniques and adjusted for differences in definitions of forms of violence and study quality characteristics. Although every effort was made to adjust for differences in measurement of violence across studies, there may be residual confounding related to both definitions of violence (including whether studies asked about experience of specific acts of violence and how many questions they asked) and other study quality variables. These differences may in part explain age, sex and regional differences in prevalence estimates. Further, the school-based studies tended to include fewer questions about experience of different specific acts of violence; thus, the school-based estimates may be more prone to misclassification of violence exposure relative to estimates of household and intimate partner violence. For most countries, data were only available from one or two survey years—pooling data from different years may obscure trends in the prevalence of violence over time. As with all studies on violence, there is likely to be under-reporting of certain forms of violence, particularly sexual violence, due to the stigma associated with victimisation and potential fear of reprisals. Our estimates are also based on population-based household and school-based surveys, which will include far fewer children who live outside of family care, on the street or in institutions and may under-represent experiences of those in conflict settings. In some cases, similar to other global estimates, data from only a limited number of countries are currently available.

Once more countries conduct prevalence studies, and these estimates will change. It is clear from looking within single studies that have measured violence from multiple perpetrators that perpetration patterns may differ by setting. In one study of children attending school in Uganda, physical violence from school staff was the most common form of violence experienced, followed by violence from caregivers and peers. Estimation efforts should be repeated as more comprehensive data become available in different settings.

### Implications for future research, policy and programming

There is a clear need for more data on the experiences of younger children, particularly around family and sexual violence. This may stem partly from investigators' concerns about the validity of younger children's survey responses. For very young children, it is likely that we must always rely on proxy reports; however for children of later primary school age, it may be possible to develop and test survey measures that allow them to directly report on their own experiences. Some school-based surveys do include questions on peer violence for fourth graders (about 9 years old). Efforts need to be made to develop methods to ask about other forms of violence in a reliable and valid way. Further data are also needed on perpetrators besides students and peers, intimate partners and household members. This is particularly true for sexual violence, where we have little understanding of who perpetrators may be. Questions on violence from teachers and authority figures are included in some surveys, but this is generally not collected on a widespread basis—yet prevalence data show alarming figures in Uganda, Tanzania and Kenya, for example, with up to 93% of students in Uganda reporting violence from school staff.

Comparability of existing surveys is limited, with a range of different questions being used to capture overlapping exposures to different forms of violence. Some of the larger surveys with good international coverage ask only two or three questions; conversely, more specialised violence surveys have been conducted in a much smaller number of countries. While each survey provides valuable information, standardisation of measures would be useful to support monitoring in countries, including related to the SDGs. Without further standardisation, countries will not be able to effectively track progress related to violence reduction. Similarly, our data synthesis clearly shows that experiences of violence in childhood are nearly universal. While all violence can be conceptualised as a violation of rights, a more nuanced understanding of what constitutes risky exposures from a public health perspective would be valuable for directing scarce prevention resources.

Programmatically, the home setting is of obvious importance. Both the US Centers for Disease Control and the WHO, along with eight other key global partner organisations, have recently issued INSPIRE,<sup>22</sup> guidance on effective programming to reduce violence against children, including in the home setting. There is a relatively robust evidence base around parenting and family strengthening programmes; however, the vast majority of evaluations have taken place in high-income countries. Work is currently underway to test efficacy of a number of parenting programmes in lower-income countries (eg, see Cluver<sup>23</sup>).

School environments must be targetted—if a child is attending school, they are likely to experience more violence in this environment than in the home. In many settings, first intimate partnerships will begin while one

or the other partner is attending school, which also can provide an intervention opportunity to reduce sexual violence. INSPIRE contains recommendations for school programmes, although it is notable that most of these programmes focus on and have been tested for efficacy in relation to peer violence and bullying, rather than violence from staff to students or violence in intimate relationships. Only a handful of programmes have been tested to reduce violence from school staff towards students,<sup>24–26</sup> and recent reviews of dating violence prevention interventions suggest that many of these programmes have limited evidence of efficacy.<sup>27 28</sup> The inclusion of violence in childhood in the SDGs is welcome in the violence prevention and child health communities. Our results suggest that new, standardised data collection from a broader range of ages, which includes both sexes, are needed, along with a discussion about the ethical aspects of gathering such data from children and adolescents. At present, it will be difficult to monitor whether violence reductions happen equitably across all age groups of children and across different areas of the world, as there are relatively few data sources that can present this information in a disaggregated way.

## CONCLUSION

Violence against children is widespread and must be addressed to improve children's health and well-being. There are large gaps in current understandings of the epidemiology of violence against children. Improved data collection is needed to better inform policy and programming and to meet SDG targets. Programmes to prevent violence within households are needed at scale, and increased focus on schools as a prevention site is urgently needed.

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