ORIGINAL ARTICLE

Association of
Child Protection
Professionals

School-based interventions to reduce teacher violence against children: a systematic review

Ella Baumgarten[1,2] 🔵 | Mark Simmonds[3] | Amanda J. Mason-Jones[1] 🔵

[1]Department of Health Sciences, University of York, York, North Yorkshire, UK

[2]Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine, Seattle, WA, USA

[3]Centre for Reviews and Dissemination, University of York, York, North Yorkshire, UK

Correspondence
Amanda J. Mason-Jones, University of York, Heslington, York, YO10 5DD, UK.
Email: amanda.mason-jones@york.ac.uk

Ella Baumgarten, Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine, Seattle, WA, USA.
Email: ella.baumgarten@gmail.com

Abstract

Whilst teacher violence against children at school is a significant global issue, it remains a form of child abuse that is rarely explored. The aim of this study was to systematically review the global literature on the effectiveness of school-based interventions to reduce teacher violence against children. MEDLINE, Embase, ASSIA, CINAHL Complete, ERIC and clinical trials.gov databases were searched from inception to 21 April 2022. Four cluster randomised controlled trials were retrieved from Uganda, Tanzania and Jamaica. The number of schools per study (cluster size) varied from 8 to 42 schools with between 55 and 591 teachers and 220–4789 students. The average student age was between 7 and 15 years old and, on average, the teachers were between 30 and 42 years old. The interventions aimed to reduce teacher violence against children and incorporated teacher training workshops that targeted teacher–student relationships by promoting positive discipline techniques and nurturing learning environments. The use of teacher violence was significantly reduced among intervention groups. This suggests that these interventions may effectively decrease teacher violence against children and therefore should be advocated more widely.

KEYWORDS
child maltreatment, school-aged child, school-based intervention, systematic review, teacher, violence

Key Practitioner Messages

Teacher violence severely impacts the health and well-being of children and is a significant public health issue. All teachers, school administrators and policy makers need to be made aware of these impacts and take preventative action. Longer term studies are needed specifically to explore the effects on the mental health of children and young people, their school attainment and on school climate. It was striking that there were no studies targeting sexual violence or neglect of children by teachers and no studies at all from high-income countries. This perhaps demonstrates the largely hidden nature of the problem and the need for urgent action.

INTRODUCTION

The World Health Organisation (WHO) defines violence as 'the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation' (WHO, 2002). While the United Nations (UN) Sustainable Development Goal 16.2 calls for the elimination of all violence against children by 2030 (UN, 2015), one billion young people experience violence annually (Centers for Disease Control and Prevention [CDC], 2021a). This violence can happen in schools and may be perpetrated by teachers.

It was recently reported that physical violence (often called maltreatment or corporal punishment) against students in educational settings is widespread, occurs in both high- and low-and-middle-income countries (Heekes et al., 2020) and remains legal in 64 nations (End Corporal Punishment, n.d.). This form of maltreatment also continues to persist despite the implementation of laws prohibiting it (Gershoff, 2017). For example, although corporal punishment in schools in Cameroon is banned (End Corporal Punishment, 2018), physical abuse committed by teachers was experienced by 40.5 per cent of the 601 students surveyed in one study (Benbenishty et al., 2021). Another study from Tanzania reported that over 90 per cent of 409 students had been physically attacked by a teacher (Hecker et al., 2014) and in Jamaica, a study of 1300 fifth graders reported that over 80 per cent had experienced various forms of physical abuse by a teacher in a school setting (Baker-Henningham et al., 2009).

Emotional and sexual violence perpetrated by teachers against children has also been reported. A study of 1339 primary school students in Cyprus found that over a third had experienced emotional abuse from a teacher and over half had experienced neglect (Theokiltou et al., 2012). While studies investigating the prevalence of teacher sexual violence are less common, a study conducted in Benin reported that 50 per cent of girls in primary school and 70 per cent of girls in secondary school had experienced inappropriate sexual advances and other forms of sexual violence perpetrated by teachers (Wible, 2004).

Numerous factors have been associated with teacher use of violence against children in schools. The use of force by teachers in schools has historically been accepted as a way of disciplining students and may be reinforced by religious and cultural beliefs (Dupper & Montgomery Dingus, 2008). Teacher stress has also been implicated as a factor in higher rates of teacher maltreatment of students (Hecker et al., 2018). Teachers' continued use of violent disciplining techniques against children has also been associated with them lacking knowledge of alternative non-violent methods (Cheruvalath & Tripathi, 2015; Nkuba et al., 2018). Additionally, school climate, that is, the ethos and social ecology of the school, has been associated with teacher–student relationships. According to the National School Climate Council, school climate is described as 'the quality and character of school life' (National School Climate Center, n.d.). Relationships between individuals involved with the school (e.g. parents, students, school staff), school culture and beliefs and education methods are some of the elements that make up school climate (National School Climate Center, n.d.). Research has indicated that a negative school climate is associated with teacher burnout and, consequently, stricter punishments in the classroom when undesirable behaviour occurs (Grayson & Alvarez, 2008; Reinke et al., 2012).

The consequences of teacher violence are wide-ranging and generally similar to the consequences experienced as a result of family-based violence (Nearchou, 2018). Individuals who experienced violence during childhood may have a higher likelihood of being diagnosed with a chronic disease later in life, including cancer, diabetes and heart disease (Ferrara et al., 2019; Holman et al., 2016; Shields et al., 2016). Research has also indicated that children who experience violence are more likely to attempt suicide, suffer from depression and develop substance abuse issues (Merrick et al., 2017). Education is also affected by childhood maltreatment; reduced school attendance and lack of school involvement are associated with childhood exposure to violence (Crouch et al., 2019).

Most systematic reviews of the effectiveness of school-based interventions targeting violence have focused on interventions designed to reduce bullying and other forms of *student*-perpetrated violence (Kelly, 2017; Vreeman & Carroll, 2007). A systematic review of reviews of interventions targeting school violence, including corporal punishment, peer violence, student violence against teachers and teacher violence against students, did not find any reviews that analysed interventions that targeted corporal punishment or teacher violence against students (Lester et al., 2017). Therefore, there is a need to explore the effectiveness of school-based interventions that target *teacher* violence against children in schools. The aim of this systematic review was to identify interventions designed to reduce teacher violence against children in schools and evaluate the effectiveness of these school-based interventions. The evidence synthesised from this review can be used by teachers and teachers' associations, health workers, child protection specialists, policymakers and other decision makers involved with schools to help them understand interventions that might work to reduce violence against children and for researchers to suggest next steps for research in the field.

METHODS

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement was used to guide the reporting of this systematic review (Moher et al., 2009).

Eligibility criteria

A set of criteria, based on the population, intervention, comparator, outcome and study design (PICOS) framework (Pollock & Berge, 2018), was developed to identify randomised controlled trials or cluster randomised controlled trials that were eligible for inclusion. The population of interest was children in full-time education, defined as individuals between 5 and 18 years old who attended school at least 12 hours per week (Hupkau et al., 2017).

Any school-based interventions that targeted reduction of teacher violence (physical, sexual or emotional/neglect) against children were eligible for inclusion. This could include interventions that sought to alter teacher behaviours, educate teachers (e.g. training programmes) or that employed other strategies to reduce teacher violence. This criterion was kept broad to ensure that all studies including relevant interventions could be identified. Teachers were defined as professionals who, at the minimum, completed 90 per cent of the required teaching hours over a whole school year (OECD, 2003).

Control groups included where no intervention or service was provided, wait-list controls or other interventions that target general reductions in violence.

The primary outcomes of interest were reduced incidences of teacher physical, sexual, emotional violence and teacher neglect of children. The WHO definition of violence (described above) was selected for this review because it is an expansive definition of violence that acknowledges many different types of harm (WHO, 2002). Physical violence is described as an individual using physical actions (e.g. punching, slapping) to harm another individual (CDC, 2021b). Sexual violence is defined as 'forcing or attempting to force a partner to take part in a sex act, sexual touching, or a non-physical sexual event (e.g., sexting) when the partner does not or cannot consent' (CDC, 2021b). Emotional violence signifies emotional, mental or verbal cruelty directed towards individual (UNICEF, 2014). Neglect occurs when an individual's fundamental needs, such as food and housing, are not met (UNICEF, 2014).

Secondary outcomes were child mental health, academic performance and school climate. These outcomes were selected because they have all been associated with teacher violence against children (Herzog & Schmahl, 2018; Kosciw et al., 2013; Mitchell et al., 2010; Sava, 2002). Both the primary or secondary outcomes could be self-reported by teachers and/or students or observed independently.

While no language restrictions were applied to the searches, only studies published in English were included because of limited resources to support translation. No restrictions on publication date were applied to the review.

Search strategy

MEDLINE, Embase, ASSIA, CINAHL Complete, ERIC and one trial registry, clinical trials.gov, were searched from inception to 21 April 2022. The search strategy was developed by identifying and combining terms and appropriate synonyms relevant to the inclusion criteria. Search terms related to child or student were combined with terms related to elementary school or primary school or secondary school, violence or maltreatment, school-based intervention and randomised controlled trial. To ensure that the search strategy was not overly restrictive, search terms related to comparators and secondary outcomes were not included. All the search terms and search strategies for each database and clinicaltrials.gov are provided in Figure S1. The search results were exported to EndNote Online to manage the references, remove duplicates and screen the studies for inclusion or exclusion.

Study selection

First, duplicates of search results were removed using the EndNote Online de-duplication function. Search results were then screened manually for any remaining duplicates. Following de-duplication, the studies were screened in two different stages: title and abstract screening and then full-text assessment. An inclusion assessment form was developed in Microsoft Excel to screen the papers for the full-text assessment; the form listed inclusion and exclusion criteria. It was completed for each manuscript selected for the full-text assessment to determine inclusion or exclusion. The first author completed both stages of screening. A second screener independently reviewed a 10 per cent random sample of all titles and abstracts retrieved from the searches and all authors confirmed the decisions. The level of agreement between the

first and second screeners at title and abstract screening was 100 per cent. Any initial ambiguities that arose during the study selection process were discussed with the team and were easily resolved. A full list of excluded studies and reason(s) for exclusion is provided in Table S2.

Data extraction

A data extraction form (see Table S1) was developed in Microsoft Excel to extract relevant data from the included studies (Li et al., 2019). The extracted data included author, year, study design, study setting, number of teachers and students randomised to control and intervention groups, intervention goal and description, outcome baseline and post-intervention measures and estimate of intervention effectiveness. This form was then piloted by the primary reviewer using one of the papers that passed the full text assessment. Once completed, the form was sent to the second and third authors to check for potential issues and was edited based on recommendations by the second and third authors. Data were extracted on a per-trial basis. Where a trial was reported in multiple publications, data were extracted from the primary trial publication with other publications (e.g. baseline data) included as supplementary information.

Risk of bias assessment

The risk of bias assessments for each of the included studies were completed as part of the data extraction process. All of the included studies were cluster RCTs and the Cochrane risk of bias tool specific to cluster RCTs was used to assess methodological quality (Higgins et al., 2019). Risk of bias in RCTs was assessed in terms of selection bias, performance bias, detection bias, attrition bias and any other relevant biases (Higgins et al., 2011). Bias issues specific to cluster RCTs that were assessed included: recruitment bias, baseline imbalances and incorrect analysis (Higgins et al., 2019). The risk of bias for each included study was rated as low, high or unclear. The ratings were recorded in the data extraction form along with direct quotes pulled from the studies to support the decisions (see Table S1).

Data synthesis

Following data extraction, it was clear that it was not possible to undertake a meta-analysis due to significant statistical and methodological heterogeneity between the included studies (Campbell et al., 2019; Lee, 2019). Therefore, a narrative synthesis was undertaken.

RESULTS

Study selection

There were 398 potentially relevant studies identified following the database searches. Following de-duplication and primary screening, 38 articles were selected for the full-text assessment and 31 articles were excluded. The PRISMA flow diagram (Figure 1) illustrates the study selection process. Articles were excluded for a range of reasons: they were study protocols; inappropriate study design; the intervention did not target teacher violence; the population was not relevant; or they did not measure the review's outcomes of interest. A full list of excluded studies and the rationale for their exclusion is available in Table S2. In addition, three ongoing studies that were not yet eligible for inclusion were retrieved (see Table 5).

Included studies

Four studies, all cluster RCTs, were included in the review (Baker-Henningham et al., 2019; Devries et al., 2015; Nkuba et al., 2018; Ssenyonga et al., 2022). Four articles that analysed and discussed data from Devries et al. (2015) were retrieved and included (Devries et al., 2017, 2018; Kayiwa et al., 2017; Merrill et al., 2018). The baseline demographics of the participants included in the studies are presented in Table 1. All of the studies were conducted in primary or secondary schools in LMICs: Uganda (Devries et al., 2015; Ssenyonga et al., 2022), Tanzania (Nkuba et al., 2018) and Jamaica (Baker-Henningham et al., 2019). The number of schools per study, or cluster size, ranged from 8 to 42, the
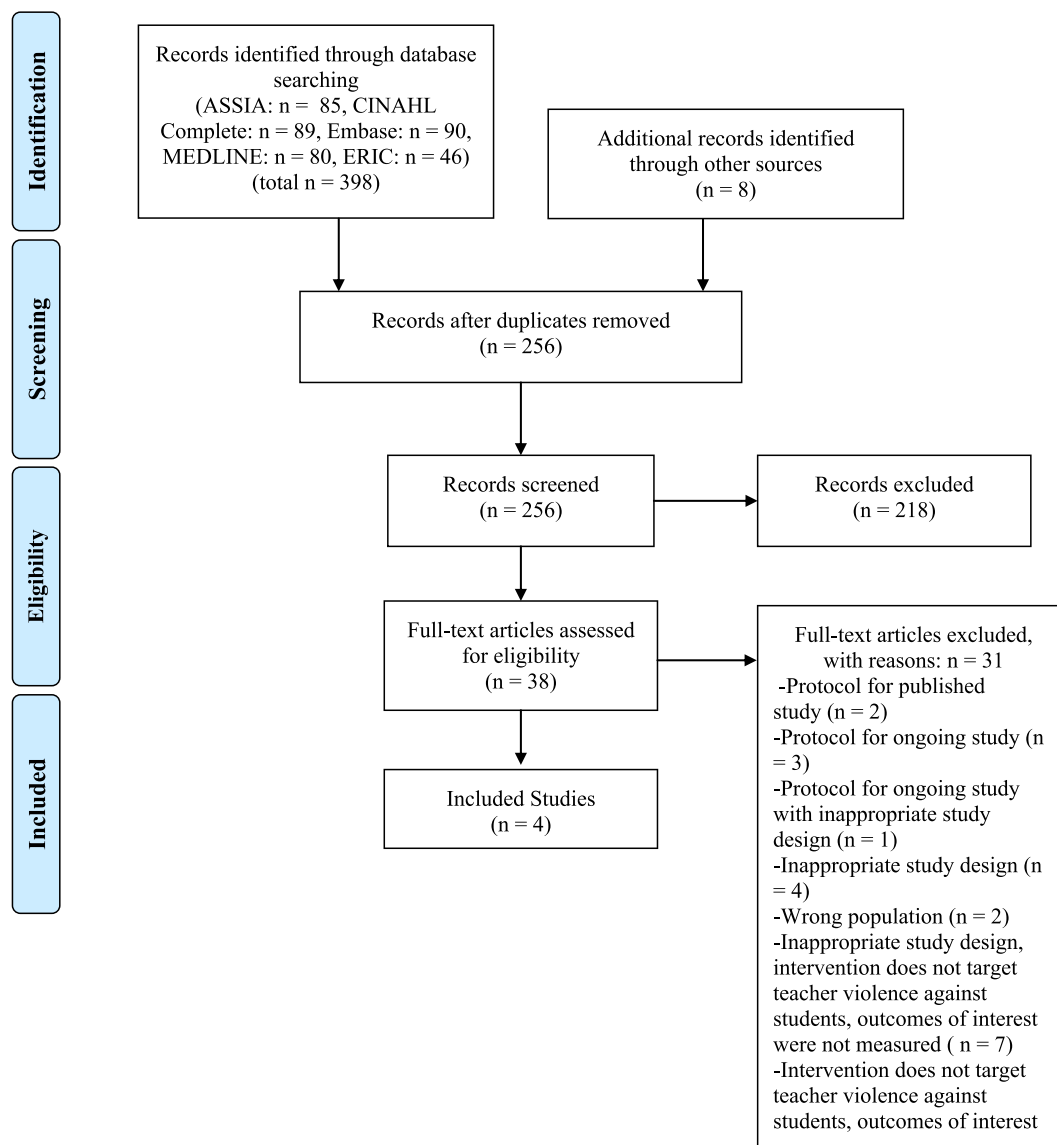
Identification

Records identified through database searching
(ASSIA: n = 85, CINAHL Complete: n = 89, Embase: n = 90, MEDLINE: n = 80, ERIC: n = 46)
(total n = 398)

Additional records identified through other sources
(n = 8)

Screening

Records after duplicates removed
(n = 256)

Records screened
(n = 256)

Records excluded
(n = 218)

Eligibility

Full-text articles assessed for eligibility
(n = 38)

Full-text articles excluded, with reasons: n = 31
-Protocol for published study (n = 2)
-Protocol for ongoing study (n = 3)
-Protocol for ongoing study with inappropriate study design (n = 1)
-Inappropriate study design (n = 4)
-Wrong population (n = 2)
-Inappropriate study design, intervention does not target teacher violence against students, outcomes of interest were not measured (n = 7)
-Intervention does not target teacher violence against students, outcomes of interest

Included

Included Studies
(n = 4)

FIGURE 1 *PRISMA flow diagram of study selection process*

number of participating teachers ranged from 55 to 591and the number of included students ranged from 220 to 4789. Students were between 7 and 16.5 years old and teachers were generally between 30 and 42 years old. The Devries et al. (2015) study also reported that 7.3 per cent of all participating students had some form of disability.

The education levels and teaching experience of teachers varied across the studies. Most of the teachers in the Devries et al. study had at least three years of teacher training at a teacher college (386/577 teachers); 153 teachers had a diploma in education and two years of training and the remaining teachers (32) had a university degree. All of the teachers included in the Baker-Henningham et al. trial had a diploma or university degree in education. Most teachers in the Nkuba et al. study had a university degree (107/158) as well as the Ssenyonga et al study (224/343).

Interventions

Intervention characteristics from each study are presented in Table 2. Devries et al. (2015) implemented the Good School Toolkit, Ssenyonga et al. (2022) and Nkuba et al. (2018) implemented the Interaction Competencies with Children for Teachers (ICC-T) intervention and Baker-Henningham et al. (2019) implemented the IRIE Classroom Toolbox. All three of these interventions ultimately aimed to improve teacher–student relationships and reduce teacher violence against children by exposing school staff to positive discipline techniques during training workshops and activities, though they each incorporate different training sessions and events specific to the intervention. The Good School

TABLE 1 *Table of included studies*

Author, year, country, trial registration	No. schools, teachers, students	School/teacher/Child characteristics	Primary outcome: Effectiveness of intervention at reducing violence against children		
			Physical violence	**Emotional violence**	**Sexual violence**
Devries et al., 2015 Uganda NCT-01678846	42 schools 591 teachers 4789 students	School: Primary, 27/42 rural schools Child: 13 years old (mean age), Sex (female): 1937/3706 students, Some disability: 271/3706 students Teacher: 34.5 years-old (mean age), Sex (female): 338/577, Education level: 386/577 had at least 3 years of teacher training, 153/577 had diploma in education and 2 years of training, 32/577 had university degree, Ethnicity: 63% of teachers Muganda	Measure: Student self-reported past week physical violence from school staff via International Society for the Prevention of Child Abuse and Neglect Screening Tool – Child Institutional (ICAST-CI) Effect Size Type: Odds Ratio* Effect Size: 0.39 (95% CI: 0.25 to 0.62)	Measure: Student self-reported past week emotional violence from school staff via ICAST-CI** Effect Size Type: Odds Ratio* Effect Size: 0.78 (95% CI: 0.49 to 1.21)	Measure: Student self-reported past term sexual violence from school staff via ICAST-CI** (no past week measure available) Effect Size Type: Odds Ratio* Effect Size: 1.04 (95% CI: 0.48–2.25)
Nkuba et al., 2018 Tanzania Registration not available	8 schools 158 teachers 486 students	School: Secondary, 186/400 child respondents from rural schools Child: 15.61 years old (mean age), Sex (female): 262/486 Teacher: 33.22 years old (mean age), Sex (female): 92/158, Education level: 107/158 had a university degree, 44/158 had a two-year diploma teaching qualification, 7/158 had some other qualification	Measure: Student self-reported experience of physical violence from a teacher via the parent–child version of the Conflict Tactics Scale (CTSPC) Effect Size Type: Cohen's d Effect Size: 0.73, $t(204)$ = 8.31, $p < 0.001$)	Measure: Student self-reported experience of emotional violence from a teacher via CTSPC Effect Size Type: Cohen's d Effect Size: 0.94, t (379.64) = 9.34, $p < 0.001$	NA
Baker-Henningham et al., 2019 Jamaica ISCTRN-94883310	14 schools* 55 teachers 220 students	School: Primary, 14/14 urban schools Child: 6.95 years old (mean age), Sex (female): 113/220 Teacher: 41.35 years old (mean age), Sex (female): 54/54, Education level: 54/54 had a diploma or university degree in education	Measure: Observations of teacher use of physical violence against students recorded over the course of one school day by two research assistants Effect Size Type: Regression coefficient divided by the standard deviation of control group at post-test Effect Size: −0.73 (95% CI: −0.15 to −1.31)	NA	NA
Ssenyonga et al., 2022 2022 Uganda NCT03051854	10 schools 343 teachers 548 students	School: Secondary, 10/10 Ankole region of Southwestern Uganda Child: 16.21 years old (mean age), Sex (female): 269/548	Measure: Student self-reported past month experience of teacher physical violence via the Conflict Tactics Scale (CTS)	Measure: Student self-reported past month experience of teacher emotional violence via the Conflict	NA

(Continues)

T A B L E 1 (Continued)

Author, year, country, trial registration	No. schools, teachers, students	School/teacher/Child characteristics	Primary outcome: Effectiveness of intervention at reducing violence against children		
			Physical violence	Emotional violence	Sexual violence
		Teacher: 37.03 years old (mean age), Sex (female): 87/343, Education level: 224/343 had bachelor's degrees, 19 had postgraduate diplomas or master's degrees	Effect Size Type: Cohen's d Effect Size***: Intervention group: 0.25, $p = 0.005$, Control group: 0.22, $p = 0.006$, Difference between groups = not reported, $ps > 0.2$	Tactics Scale (CTS) Effect Size Type: Cohen's d Effect Size***: Intervention group: 0.23, $p = 0.001$, Control group: d not reported, $p = 0.29$, Difference between groups = not reported, $ps > 0.2$	

*Controlled for school location (rural vs. urban), students' sex, disability, baseline prevalence of violence at school.
**Data from Devries et al. (2017).
***Between baseline survey and follow-up survey.

Toolkit involved schools creating milestones that connected staff with students during various activities designed to promote positive relationships; the toolkit consisted of six steps and staff and students could participate in activities of their choice. Intervention staff made phone calls to teachers and visited participating schools. Schools participated in celebrations when activities were completed successfully and when milestones were reached. In ICC-T, the teacher training sessions focused on encouraging positive teacher–student relationships, identifying forms of maltreatment and raising awareness of consequences of violence, positive discipline strategies, how to recognise and aid abused students, intervention implementation and sustainability. The IRIE Classroom Toolbox consisted of training sessions involving demonstrations and activities relating to topics such as establishing rules in the classroom, positive discipline techniques and promoting child emotional competence. The IRIE Classroom Toolbox and Good School Toolkit involved various intervention materials including books and posters.

Outcomes

All four included studies measured teacher use of violence against children, either through standardised self-report measures (Devries et al., 2015; Nkuba et al., 2018; Ssenyonga et al., 2022) or through classroom observation by an independent party (Baker-Henningham et al., 2019). Devries et al. (2015), Ssenyonga et al. (2022) and Nkuba et al. (2018) also measured child experience of violence through standardised self-report measures. These measures included the International Society for the Prevention of Child Abuse and Neglect Screening Tool – Child Institutional (ICAST-CI) and Conflict Tactics Scale – Parent Child (CTSPC).

Each study evaluated school climate using different measures, including instruments developed specifically for the studies and standardised measures. Baker-Henningham et al. (2019) and Nkuba et al. (2018) used the Classroom Assessment Scoring System (CLASS) to measure certain elements of school climate while study-specific questionnaires were used in secondary analyses of the 2015 Devries et al. study (Kayiwa et al., 2017; Merrill et al., 2018). Ssenyonga et al. (2022) used a modified version of the Conflict Tactics Scale (CTS).

The Baker-Henningham et al. (2019) and Devries et al. (2015) studies measured child academic performance through measures such as the Woodcock Johnson (WJ) tests and the Early Grade Reading Assessment (EGRA). Devries et al. (2015) also used a tool developed by a different intervention to measure specific elements of academic performance.

Only Devries et al. (2015) measured child mental health using the Strengths and Difficulties Questionnaire (SDQ).

Risk of bias assessment

Table 3 presents the results of the risk of bias assessment. Each of the studies was determined to have an unclear to high risk of performance bias due to an inability to blind participants and personnel to their intervention status. This kind of

T A B L E 2 *Table of interventions*

Author, year	Intervention	Aim	Description	Delivery	Duration
Devries et al., 2015	Good School Toolkit	Shift school operational culture, prevent teacher violence against students	Developed by Raising Voices. Behavioural intervention that aims to shift school operational culture through behaviour-change techniques. Intervention involves promoting and practising non-violent discipline techniques, promoting empathy, establishing behaviour-change goals and developing a plan to meet those goals via various activities that bring students and teachers together. Books, posters and facilitation guides are among the materials included in the Toolkit.	Raising Voices staff visit participating schools to present Toolkit to staff. Next, two staff 'protagonists' participate in a three-day workshop where they set school-wide behaviour-change goals and a plan to meet those goals. Two students are also selected to aid in carrying out the plan. Raising Voices staff are trained on the Toolkit, visit the schools and make phone calls to staff 'protagonists'. Visits were every 3 months and phone calls were each month.	Intervention is designed to be flexible, no set intervention duration. For the Devries et al. (2015) study, intervention duration was 18 months.
Nkuba et al., 2018	Interactions Competencies with Children for Teachers (ICC-T)	Prevent teacher use of violent discipline techniques and improve teacher–student relationships	Teacher training workshop that focuses on positive and effective discipline techniques, ICC-T implementation, abuse, teacher–student interactions, and how to strengthen and recognise struggling students.	A Tanzanian psychologist led the workshops along with three assistant facilitators.	Intervention occurred over 5.5 days, each full day was 8 hours long.
Baker-Henningham et al., 2019	IRIE Classroom Toolbox	Prevent teacher violence against children, prevent antisocial behaviour among children	Toolbox content supports promotion of positive child behaviours, manage negative behaviours, promote classroom rules, use positive reinforcement in the classroom, encourage social–emotional competence and read storybooks. Toolbox materials consist of a book of 'tools', activity books that include various activities, picture cards with rules for the classroom, and a book of problem-solving stories.	Teachers participated in training sessions that was delivered by a senior facilitator. A junior facilitator supported the senior facilitator in the classroom. Training sessions incorporated demonstrations and gave time for teachers to practise strategies in a group environment. Training manuals were also provided. Additionally, there were eight sessions directly in the classroom to provide teacher support, after which teachers completed various assignments related to the strategies learned in the training sessions.	Teachers had the option to complete up to 12 hours of training and were given 8 monthly 1 hour in-class support sessions.

(Continues)

TABLE 2 (Continued)

Author, year	Intervention	Aim	Description	Delivery	Duration
Ssenyonga et al., 2022	Interactions Competencies with Children for Teachers (ICC-T)	Prevent teacher use of violent discipline techniques and improve teacher–student relationships	Teacher training workshop that focuses on positive and effective discipline techniques, ICC-T implementation, abuse, teacher-student interactions, and how to strengthen and recognise struggling students.	ICC-T sessions were run by two graduate-level psychologists. Other trainers with ICC-T expertise supported the sessions remotely.	Training took place over 5 days, each session was 9 hours long.

TABLE 3 *Risk of Bias assessment results*

Author (year)	Baker-Henningham et al. (2019)	Devries et al. (2015)	Nkuba et al. (2018)	Ssenyonga et al. (2022)
Random sequence generation (selection bias)				
Allocation concealment (selection bias)				
Blinding of participants and personnel (performance bias)				
Blinding of outcome assessment (detection bias)				
Incomplete outcome data (attrition bias)				
Selective reporting (reporting bias)				
Baseline imbalances				
Incorrect analysis				
Recruitment bias				
Other biases				

Note: Red high risk of bias, green = low risk of bias, yellow = unclear.

bias is common in cluster RCTs (Eldridge et al., 2008). Devries et al. (2015) and Nkuba et al. (2018) also had a high risk of detection bias because data collectors were not blinded. The risk of response bias was high in the Devries et al., Nkuba et al. and Ssenyonga et al. studies because self-report questionnaires were used and the risk of bias due to sample size was high in Baker-Henningham et al. (2019) due to a small study size.

There was an increased risk of contamination bias in the Devries et al. (2015) study because a few teachers from the control schools were shown Good School Toolkit materials by intervention schools.

The risk of selection bias, attrition bias and cluster-specific biases for each study were low or unclear. Devries et al. (2015), Baker-Henningham et al. (2019) and Ssenyonga et al. (2022) were at a low or unclear risk of reporting bias while Nkuba et al. (2018) was at high risk because it was not possible to locate a published trial protocol.

Teacher violence against children

Table 1 summarises the results presented for teacher physical, emotional and sexual violence outcomes in each study. All the included studies measured teacher physical violence against children as a primary study outcome and reported that teacher use of physical and emotional violence was reduced among intervention groups. Baker-Henningham et al. reported this reduction as significantly fewer acts of teacher physical or emotional against students in the intervention group over the course of one school day (Effect size (ES): -0.73, 95 per cent Confidence Interval (CI): −0.15 to −1.31). The ES in the Baker-Henningham et al. (2019) study was the regression coefficient divided by the standard deviation of the control group at post-test. Devries et al. (2015) also reported statistically significant reductions in teacher use of physical violence among teachers in the intervention groups compared to control groups, as self-reported by students (Odds Ratio [OR]: 0.39, 95 per cent CI: 0.25 to 0.62) as well as Nkuba et al. (Cohen's d: 0.73, $p < 0.001$). Devries et al. (2018) also reported that teacher violence against children with disabilities was significantly reduced in the intervention

groups, measured as adjusted ORs of 0.29 (95 per cent CI: 0.14 to 0.59) for past-week physical violence (Devries et al., 2018). While Ssenyonga et al. (2022) reported reductions in student-reported exposure to teacher physical violence within the intervention group (Cohen's d: 0.25, $p = 0.005$), they did not report an intervention effect.

Nkuba et al. (2018) and Devries et al. (2017) analysed teacher use of emotional violence against children, with statistically significant reductions in student reports of teacher useof emotional violence. Nkuba et al. (2018) reported a Cohen's d of 0.94 ($p < 0.001$) and Devries et al. (2017) reported an OR of 0.78 (CI: 0.49 to 1.21). Ssenyonga et al. (2022) also analysed and reported reductions in student experience of teacher emotional violence within the intervention group (Cohen's d: 0.23, $p = 0.001$).

Devries et al. (2017) reported three of 1921 children in the intervention group reported experiencing of past-week teacher sexual violence whereas 13 of 1899 children in the control group reported sexual violence exposure. Although this may suggest some reduction in teacher sexual violence against children, this interpretation is speculative and must be regarded cautiously because minimal data were collected, an OR for past-week teacher sexual violence was *not* calculated and past-term child reports of teacher violence were not significantly reduced (OR: 1.04, 95 per cent CI: 0.48 to 2.25).

Child mental health

Devries et al. (2015) measured child mental health as an outcome and did not find any significant improvement in child mental health as measured by an OR of 0.01 (95 per cent CI: -0.02 to 0.04) and 0 (-0.03 to 0.03) after controlling for student prevalence of initial school physical violence, student sex, school location and student disability (see Table 4).

Child academic performance

Table 4 summarises the child academic performance results. Devries et al. (2015) and Baker-Henningham et al. (2019) reported that child academic ability was not significantly improved among students exposed to the intervention compared to the control groups.

School climate

Table 4 summarises the results for school climate. All four studies evaluated different elements of school climate and produced mixed results. Various elements of school climate measured in the studies were potentially improved, including teacher perceptions of school climate (OR: 1.91, 95 per cent CI: 0.58 to 3.24) (Kayiwa et al., 2017) and teacher attitudes towards physical violence (Cohen's d: 0.96, $p < 0.001$) (Nkuba et al., 2018), but the variation in outcome measure, lack of statistical significance of some outcomes and lack of standardised school climate measures made it challenging to synthesise results and draw a meaningful conclusion.

DISCUSSION

This review found that school-based interventions that aimed to reduce teacher violence against children were broadly effective. The success of these interventions is encouraging, particularly when their educational systems, geographical location, culture and language are very different. It suggests that these interventions have core components that may be adapted for different national and cultural contexts. One study also showed that the intervention could successfully reduce teacher violence against children with disabilities (Devries et al., 2018). Challenging teacher violence, particularly against children who might be more vulnerable, is particularly important, so that interventions may effectively impact teacher relationships with the widest range of students. While data from one study suggested that this intervention was not as effective among female children, this difference was slight and the intervention was still effective among all children (Devries et al., 2015, 2017). However, this does require further investigation. Gender biases in implementation may exist and it will be important to explore this in more detail.

It is also important to note that these interventions may have the capacity to change attitudes towards violence in the community more widely. Results from the evaluation of the Good School Toolkit, for example, suggest that the intervention was able to reduce the acceptance of physical violence in the home and that interventions implemented in schools may be able to shape community-wide attitudes towards violence against children which could sustain the longer-term effects of these interventions (Merrill et al., 2018). Schools have been observed to facilitate shifts in

TABLE 4 *Secondary outcomes*

Author, year	Outcome	Measure	Effect size type	Effect size
Devries et al., 2015	Child Mental Health	Strengths and Difficulties Questionnaire (SDQ)	Odds Ratio*	0.00 (95% CI: −0.03 to 0.03)
	Academic Achievement:			
	Reading comprehension (English)	Early Grade Reading Assessment – Uganda Version	Odds Ratio*	0.12 (95% CI: −0.20 to 0.44)
	Word Reading (English)	Early Grade Reading Assessment – Uganda Version	Odds Ratio*	−1.89 (95% CI: −4.67 to 0.90)
	School Climate:			
	Teacher perceptions of school climate	16-item composite measure developed for study to assess staff perception of school climate	Adjusted mean difference (adjusted for initial mental score, initial job satisfaction, initial perception of school climate**)	1.91 (95% CI: 0.58 to 3.24)
	Staff acceptance of physical discipline practices in school	Four-point Likert-type questionnaire developed for purpose of study	Adjusted mean difference (adjusted for initial level past-week physical violence from school staff, individual's sex, disability, school location)	−2.49 (−3.15 to −1.84)
Nkuba et al., 2018	School Climate:			
	Teacher positive attitudes towards emotional violence	4-point CTSPC	Cohen's d	1.17 $t(122.31) = 6.82, p < 0.001$
	Teacher positive attitudes towards physical violence	4-point CTSPC	Cohen's d	$T(113.27) = 5.57, p < 0.001$
Baker-Henningham et al., 2019	Academic Achievement:			
	Academic achievement factor (reading, phonics, spelling, math, calculation combined)	Battery of academic achievement tests***	Regression coefficient/SD of control group at post-test	−0.004 (95% CI: −0.54 to 0.54)
	School Climate:			
	Levels of emotional support	Classroom Assessment Scoring System (CLASS) K-3	Regression coefficient/SD of control group at post-test	1.22 (95% CI: 0.57 to 1.87)
Ssenyonga et al., 2022	School Climate:			
	Teacher positive attitudes towards physical violence	Modified CTS	Cohen's d	Intervention group****: d = not reported, $p = 0.71$, Control group: d = not reported, $ps > 0.47$, Difference between groups: $d = 0.61, p = 0.047$
	Teacher positive attitudes towards emotional violence	Modified CTS	Cohen's d	Intervention group****: d = not reported, $p = 0.71$, Control group: d = not reported, $ps > 0.47$, Difference between groups: d = not reported, $p = 0.48$.

*Controlled for school location (rural vs. urban), students' sex, disability, baseline prevalence of violence at school.
**Data from Kayiwa et al. (2017).
***Battery of academic achievement tests: Woodcock Johnson (WJ) III Diagnostic Reading Battery, WJ III Tests of Achievement, Woodcock – McGrew – Werder Mini-Battery of Achievement, Self-Regulation Assessment: Assessor Report.
****Between baseline and follow-up survey.

TABLE 5 Ongoing studies relevant to systematic review

Author, year, country	Trial registration	Study design	Study size	Intervention aim	Intervention	Relevant outcomes	2022 status
Masath et al., 2020 Tanzania	NCT03893851	Matched Cluster RCT	12 schools 240 teachers 960 students	To reduce teacher positive attitudes towards violent discipline and reduce use of violent discipline by teachers in school settings.	ICC-T (discussed above).	Child experience of teacher violence, measured via CTS[a]. Child mental health, measured via SDQ[b]. Teacher use of violence (CTS)	Completed. Last update posted: 27 January 2021.
López García et al., 2021 Haiti	NCT05081622	Matched Cluster RCT	36 schools 468 teachers 1008 students	To reduce teacher positive attitudes towards violent discipline and reduce use of violent discipline by teachers in school settings.	ICC-T (discussed above).	Child experience of teacher violence, measured via CTS. Child mental health, measured via PSC-Y[c]. Teacher use of violence (CTS) Child academic performance, measured via standardised numeracy and literacy test based on tests developed by Uwezo initiative	Recruiting, last update posted 4 January 2022.
Scharpf et al., 2021 Ghana, Tanzania, Uganda	NCT04948580	Two-arm multi-site cluster RCT	72 schools 1440 teachers 2880 students	To reduce teacher positive attitudes towards violent discipline and reduce use of violent discipline by teachers in school settings.	ICC-T (discussed above).	Child experience of teacher violence measured via CTS, child mental health, measured via PSC-Y, Child academic performance, measured via standardised numeracy and literacy test based on tests developed by Uwezo initiative, teacher use of violence (CTS)	Recruiting, last update posted 5 October 2021.

[a]CTS = Conflict Tactics Scale.
[b]SDQ = Strengths and Difficulties Questionnaire.
[c]PSC-Y = Paediatric Symptom Checklist – Youth Report.

community values and are important focal points within society (Addi-Raccah et al., 2017), further supporting the implementation of programmes that target violence against children within the school.

The lack of evidence of any improvement in child mental health and academic performance results is not surprising, even though poor mental health and poor academic performance are widely recognised consequences of violence experienced during childhood (Ferrara et al., 2019; Sava, 2002). These results could be explained in a number of ways; for example, because the follow-up time in the trials was too short to identify any effect. There are other factors that are associated with poor mental health among children including poverty (Bøe et al., 2013) and parental violence (Iram Rizvi & Najam, 2014). Although teacher violence was addressed and ultimately reduced by participation in the Good School Toolkit, these other factors were not (Devries et al., 2015). As with mental health, academic achievement is impacted by a wide range of factors and research has demonstrated that child academic performance may be more heavily impacted by families and the home environment than schools (Li & Qiu, 2018).

Three study protocols for ongoing cluster RCTs relevant to the systematic review were retrieved during the search process (Table 5). Each study aims to implement and analyse ICC-T and the studies are being conducted in Haiti (López García et al., 2021), Ghana, Tanzania and Uganda (Scharpf et al., 2021) and Tanzania (Masath et al., 2020).

Limitations

There are a number of limitations that should be addressed. We only included studies published in English. This restriction could result in missing studies from other country contexts (Wang et al., 2015). It was not possible to conduct a meta-analysis due to the heterogeneity of the studies so we had to rely on a narrative synthesis to summarise our findings, which is a common challenge for this type of review (Campbell et al., 2019; Lee, 2019). In addition, the small number of RCTs included in this review suggests that there is an urgent need for further research in this area.

The reliance on student self-disclosure of abuse in some of the studies (Nkuba et al., 2018; Devries et al., 2015) could be seen as a limitation. Children may be more hesitant to disclose experience of abuse because they feel threatened, more at risk, feel ashamed or are worried about their reputation or because they do not have confidence in how the report would be handled by authority figures (Allnock & Miller, 2013). Research has also indicated that the young children are less likely than older children to report experiences of abuse (Alaggia et al., 2019). There were some attempts in the included studies to add rigour.For example, Baker-Henningham et al. (2019) used direct observation in classes. This is often useful for checking fidelity of an intervention, though it could also have resulted in teachers changing their behaviours and using less violence while being observed (Sackett Catalogue of Bias Collaboration et al., 2017).

Next steps

More high-quality studies are needed to further the evidence of what can work to reduce teacher violence. Studies that have longer follow-up and can investigate the long-term effects of these interventions would be beneficial so that the impact on mental health and school attainment and the school climate can be evaluated. The use of validated and standardised instruments to measure violence should be used more frequently, or adapted for use in this area of research, to ensure that studies are comparable and produce findings that are more generalisable or have lower risk of bias. It was also particularly striking was that none of the interventions focused on teacher sexual abuse or neglect of children in schools. This suggests a need for further investigation into these forms of violence and to develop programmes that directly target them. In addition, this review did not identify any trial evaluating interventions targeting teacher violence in high-income countries (HICs) despite evidence that it does exist (Canadian Centre for Child Protection, 2019). This indicates a need for implementation and evaluation of these interventions in HICs. Ultimately, teacher violence against children has severe impacts on the health and wellbeing of children and must be recognised as a significant public health that needs to be addressed.

ORCID
Ella Baumgarten https://orcid.org/0000-0002-1885-3066
Amanda J. Mason-Jones https://orcid.org/0000-0002-4292-3183

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Baumgarten, E., Simmonds, M. & Mason-Jones, A.J. (2022) School-based interventions to reduce teacher violence against children: a systematic review. *Child Abuse Review*, e2803. Available from: https://doi.org/10.1002/car.2803