Community Violence Prevention: The Effectiveness of Child and Youth Interventions

Review of the Evidence
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Key Messages

- There is evidence to suggest that multi-component interventions can reduce aggression and violence among children and youth, particularly those that involve creating a positive school ethos, changes to school policy, as well as cross-sector, multi-agency engagement.

- Cognitive behavioural interventions show mostly positive effectiveness in preventing community violence in children and youth. These interventions have a stronger effect when delivered universally versus in small groups.

- A moderately rated systematic review supported the use of school-based developmental prevention programs designed to promote pro-social behaviours and prevent child and youth violence.

- Among the small number of poverty deconstruction and urban upgrading intervention studies, resettlement programs had the most positive effect on reducing child and youth violence.

Executive Summary

Community violence is a serious public health issue. In 2018, the Toronto Board of Health passed a motion which included a request for the Medical Officer of Health conduct a research project on community violence exposure, health impacts, mitigation and prevention. This report contributes to the research project through a rapid evidence review on the effectiveness of child and youth interventions to prevent community violence.

Systematic reviews investigating community violence prevention programs targeting children and youth were identified through a literature search. These reviews were subsequently appraised for quality: six out of 10 were rated as strong in quality and four were moderate. Five main intervention types were identified: cognitive behavioural interventions, developmental prevention programs, multi-component interventions, positive youth development, as well as poverty deconcentration and urban upgrading.

Due to the limited number and quality of individual studies, as well as significant heterogeneity, no definitive conclusions can currently be made about the effectiveness of interventions to prevent community violence in children and youth. Although the results were mixed, most of the evidence supports the effectiveness of cognitive behavioural interventions and developmental prevention programs in reducing child and youth aggression. These two intervention types were more effective when delivered universally, versus in small groups.

The evidence suggests that multi-component interventions are effective in preventing child and youth violence, but a limited number of studies examined violence as an outcome. Multi-component interventions delivered through a universal approach are preferable due to the ineffectiveness or harms of targeting young people most at risk of violence.

Positive youth development interventions did not have statistically significant effects on violence outcomes. There was limited evidence on poverty deconcentration and urban upgrading interventions but the most promising child and youth violence reduction outcomes were shown for resettlement programs.

Considering the above findings, recommendations include:

- Explore opportunities to enhance TPH child and youth programming with multi-component, cognitive behavioural and developmental prevention interventions delivered universally rather than in small groups or specifically targeted at young people at risk of violence. Evaluating these interventions could contribute to the evidence base.

- Assess current TPH partnerships related to child and youth violence prevention and consider opportunities for new or enhanced multi-sectoral collaboration.

- To compliment this report, review current evidence to identify the effectiveness of: a) school-based bullying prevention programs, and b) interventions for parents which aim to prevent child and youth violence.

1.0 Introduction

On March 5, 2018, the Toronto Board of Health passed a motion which recognized community violence as a social determinant of health. The motion included a request for the Medical Officer of Health to conduct a research project on community violence exposure, health impacts, mitigation strategies and prevention (City of Toronto, 2018). This report contributes to the research project through a rapid evidence review on the effectiveness of community violence prevention programs which target children and youth.

Community violence is defined as intentional acts of interpersonal violence often committed in public areas by individuals who are not intimately related to the victim. It involves individual or group conflicts such as fights among gangs and other groups, retaliatory violence, and/or fights in relation to illicit economic activities (National Child Traumatic Stress Network, n.d.). Community violence intersects with and is compounded by various social inequities, including poverty, racism, and other forms of social exclusion. As a social determinant of health, community violence has deleterious immediate and long-term physical and mental health outcomes, as well as negative social and economic impacts (World Health Organization, 2014).

Two immediate health impacts of community violence are physical injury and death. Research points to higher rates of chronic diseases such as hypertension, Type 2 diabetes, and obesity in communities with higher than average rates of violence (Prevention Institute, 2011; Richardson et al., 2017). Fear of violence can lead to limiting outdoor physical activities, thus reducing access to health promoting behaviours (Esteban-Cornejo et al., 2017; Lornec et al., 2012). Areas that experience higher rates of violent crime show higher rates of mental health concerns such as depression and post-traumatic stress (Weisburd et al., 2018). Among children and youth, exposure to community violence increases the risk of behavioural, emotional, and learning problems which can pose long-term challenges across a young person’s life (Dubé et al., 2018; Moffitt et al., 2012; Wright et al, 2017).

Community violence prevention earlier in life is an upstream approach to promoting health, safety and opportunity. This rapid review provides evidence to inform decision making on interventions for children and youth aimed at preventing community violence.

2.0 Methodology

2.1 Research Question

To determine the scope of this review, a research question was developed using the PICO framework. The research question, search strategy and screening process are outlined below.

Research Question: What is the effectiveness of interventions targeting children and youth in preventing community violence?

Population (P): Children and youth – ages 3-18
Intervention (I): Various community-based, including schools
Comparison (C): No intervention
Outcome (O): Community violence (e.g. rate, severity, frequency)

2.2 Literature Search

A literature search was conducted by a Toronto Public Health Librarian (MS). Various electronic databases were searched for systematic reviews (see Table 1).

Table 1: Research Question, Databases & Keywords

Research Question: What is the effectiveness of interventions targeting children and youth in preventing community violence?
Dates Searched: 2013 to January 28, 2019
Databases Searched: • Ovid MEDLINE • EBM Reviews - Cochrane Database of Systematic Reviews (OVID platform) • ERIC • Child Development & Adolescent Studies (EBSCO platform) • SocINDEX (EBSCO platform)
Keywords: (specific) Interventions + Violence + Children or Youth Keywords and indexed terms (where available) were searched for each of the search concepts listed above. Keyword searches were limited to specific fields such as: title, abstract or author supplied keywords. Results were limited to 2013 onwards and limited to study types such as systematic reviews, reviews or meta-analyses.

2.3 Inclusion and Exclusion

Table 2 describes the inclusion and exclusion criteria used to identify studies relevant to the research question. Two authors (JR, JB) independently reviewed titles and abstracts for inclusion. Disagreements were resolved by consultation with the third author (DC).

Table 2: Inclusion/Exclusion Criteria

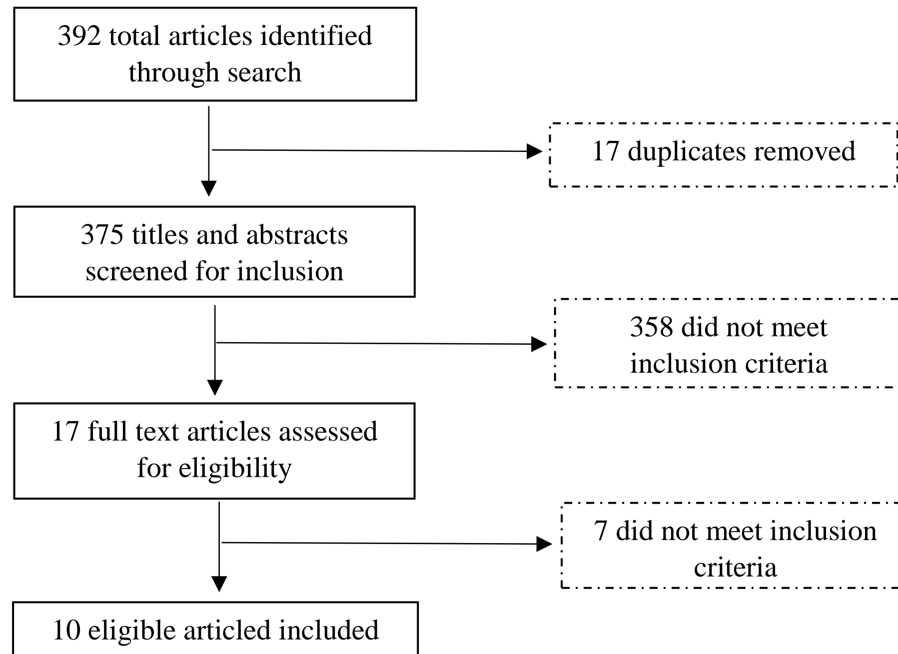
	INCLUSION	EXCLUSION
Outcomes	Community violence, including: • Gun violence • Violent behaviours • Aggressive behaviour/fighting • Mobbing • Stabbings • Interpersonal violence	• Gender based violence • Bullying • Terrorism • Robberies • Property crime • Suicide/self-harm • Child abuse
Interventions	Interventions to prevent community violence, including: • Cognitive-behavioral programs • Resilience based programs • Peer leadership and youth engagement • Mental health promotion • Psycho-educational strategies • School capacity building • Mentorship programs • Restorative justice • Parent and teacher engagement • Violence interruption programs/interventions • Trauma informed approaches	No interventions to prevent community violence were excluded.
Setting	• School-based • Community/neighbourhood-based	• Clinical settings • Post-secondary institutions
Age	• Students (kindergarten to grade 12) • 3-18 years	• Post-secondary students • 19 years+
Type of materials	• Published meta analyses or systematic reviews	• Literature reviews • Single studies and case studies • Grey literature and theses • Conference abstracts • Editorials
Dates	• 2013-January 28, 2019	• Anything before 2013

2.4 Search Results

A total of 375 (duplicates removed) titles and/or abstracts were screened by two authors (JB, JR) based on the inclusion/exclusion criteria and verified by the third author (DC). EndNote was used to store and sort the retrieved data sets found in the search process.

A total of 17 full-text articles were reviewed for relevance. In the end, a total of 10 articles were included in this review and appraised for quality. The overall search process is summarized in Figure 1.

Figure 1: Flow Diagram for Search Results



2.5 Quality Assessment

Ten reviews were appraised for quality using the Health Evidence™ "Quality Assessment Tool-Review Articles." Five of the reviews were independently appraised by two authors (JB, JR). Discrepancy in scores was resolved through discussion until consensus was reached. When consensus was not reached, the third author (DC) was consulted until consensus was reached. The remaining five reviews were already critically appraised by two staff at Health Evidence and their ratings were retrieved from www.healthevidence.org.

The "Quality Assessment Tool-Review Articles" tool uses a 10-point quality assessment score. The criteria used to assess methodological quality were:

1. A clearly focused question
2. Inclusion criteria explicitly stated
3. Comprehensive search strategy
4. Adequate number of years covered in the search
5. Description of level of evidence
6. Assessment of the methodological rigour of primary studies
7. Methodological quality of primary studies assessed by two reviewers and results given
8. Tests of homogeneity or assessment of similarity of results conducted and reported
9. Appropriate weighting of primary studies
10. Author's interpretation of results were supported by the data

Each criterion, worth one point each, was given equal weight in the overall assessment score. The overall score, out of 10, classified reviews into three categories: Strong (Score 8-10),

Moderate (Score 5-7), and Weak (Score ≤ 4). The quality of the 10 relevant reviews was appraised as follows:

- Six strong reviews
- Four moderate reviews

Appendix A – Quality Assessment Summary provides the scoring details.

2.6 Data Extraction

Review characteristics and key outcome data from all reviews were extracted by two authors (JB, JR) and verified by the third author (DC). A data extraction table is provided in Appendix B.

The following study characteristics were extracted:

- General information (first author, review title, year of publication, health evidence score)
- Review details (purpose, population, types of interventions, intervention setting, number of studies)
- Key outcome measurements (primary outcome)
- Results (main results, key message)
- Comments and limitations

3.0 Findings

Cognitive Behavioural Interventions

In a meta-analysis, Barnes et al. (2014; rated strong) examined the effectiveness of cognitive behavioural interventions (CBIs) in reducing aggression in children and youth. These interventions used behavioural principles, behaviour therapy, and cognitive mediation through self-talk in elementary schools with students in grades 1-8.

In the majority of 25 included studies, intervention participants had lower levels of aggression post-intervention with a mean ES of -.14. Of the effect sizes (ES), 74% were negative (aggression in the treatment group was lower after intervention), and 26% were positive (aggression in the treatment group was higher after intervention). ESs were considered to be small to moderate. CBIs delivered universally had a significantly larger ES than those using small group delivery.

Developmental Prevention Programs

In a review of systematic reviews, Farrington et al. (2017; rated moderate) examined the effects of developmental prevention programs on offending outcomes among children and youth (up to age 21). Developmental prevention programs were defined as community-based interventions targeting children and adolescents designed to prevent antisocial behaviour. Thirty-three out of 55 reviewed studies included ES calculations. With the exception of four studies, developmental

prevention programs were shown to be effective and statistically significant in reducing aggression in children and youth by about 25% (ES 1.46).

When level of intervention was assessed, this review found that family-based programs reduced child and youth delinquency, particularly with young people under the age of 15 (OR 1.44, CI 1.19–1.75). School-based programs were also effective in reducing violence, with significant efficacy when delivered universally and targeted on multiple risk factors (OR 1.20, CI 1.06–1.37). CBIs delivered in schools were examined in the context of developmental prevention and yielded a mean ES of d- 0.23, indicating effectiveness in reducing aggressive behaviour.

Multi-Component Interventions

Atienzo et al. (2016; rated strong) examined the effectiveness of individual, family and school level interventions to prevent violence among youth (ages 10-24) in Latin America. Although findings were mixed, most of the interventions had promising results, particularly in reducing homicides. For example, one study that examined an intervention in Brazil reported a reduction in homicides by more than 60%. Although this review was rated strong for quality there were a limited number of studies included, most of which used non-experimental research designs.

Rose-Clarke et al. (2019; rated strong) systematically reviewed community-based peer facilitated interventions to improve health among adolescents (ages 10-19 years) in low and middle-income countries. Only one study examined violence outcomes and met our inclusion criteria. A multi-component intervention involving peer education, community activities and teacher training was found to reduce physical violence among adolescents in India (rural areas OR 0.29, CI 0.15–0.57; urban areas OR 0.59, CI 0.40–0.87).

Shackleton et al. (2016a; rated strong) examined the effects of school-based multi-component interventions on substance use, sexual health and violence among young people (ages 11-18 years). Three out of 11 studies were related to violence and only two met our inclusion criteria with regards to community violence outcomes. A medium quality study found that schools which are more successful in engaging students have lower rates of group fighting. A low quality study found that lower rates of student violence is associated with engaging school environments, a student population that is aware of the rules and thinks they are fair, and physical environments that is not disorderly. No ESs were provided in the review.

Shackleton et al (2016b; rated strong) conducted a review of systematic reviews to examine the effects of multi-component school-based interventions on substance use, sexual health and violence among young people (ages 11-18 years). Four out of 22 studies examined violence as an outcome. A high quality study found benefit in multi-component violence reduction interventions, particularly those that involved positive school ethos, changes to school policies, and cross-sector, multi-agency engagement. This particular study recommended universal multi-component interventions and demonstrated the ineffectiveness or harm of targeting students at risk of violence. While there was some evidence suggesting the promising benefits of simultaneously addressing violence and substance use within multi-component interventions, more research is needed. The authors report that parental involvement in school interventions may be beneficial but the quality of evidence is low. There is insufficient evidence to assess the effectiveness of peer mediation in reducing violence.

Hale et al. (2014; rated moderate) studied the effectiveness of multi-component interventions on multiple health risk behaviours (MHRB) targeting youth (ages 10-19 years). While some evidence suggests that MHRB interventions have some effect on aggressive behavior among adolescents, the ESs were most commonly small or unstated.

Petrosino et al. (2015; rated moderate) conducted a systematic review on cross-sector, multi-agency interventions to reduce firearm violence among youth (ages 14-24). Ten studies reported a large decrease in some violence outcomes, including homicides, gang-related homicides, fatal shootings, non-fatal shootings and calls to police about gun shots. One study, however, did not report any substantial decreases in violence and observed higher rates of violence in a few sections of the treatment area compared to matched control areas. These results should be interpreted with caution because the authors did not rely on meta-analysis, level of statistical significance nor confidence intervals in the individual studies to assess effectiveness.

Positive Youth Development

Melendez-Torres et al. (2016; rated strong) meta-analyzed the effectiveness of community-based positive youth development (PYD) interventions for reducing violence in youth (ages 11-18). PYD did not have statistically significant ESs on violence outcomes across all time points (d- 0.021, 95% CI -0050 0.093). While short-term outcomes yielded statistically significant effects, these were marginal in sensitivity analysis (d- 0,076, 95% CI 0.013–0.140).

Poverty Deconcentration and Urban Upgrading

Cassidy et al. (2014; rated moderate) examined youth violence interventions involving the poverty deconcentration (resettlement and diversification) as well as urban upgrading in the United States. The authors defined diversification as efforts to encourage wealthier people to move into poor areas and resettlement as efforts to encourage poor families to move into less poor neighborhoods. Urban upgrading was defined as changes to the built environment which can affect human behaviour.

Although the evidence was limited, resettlement programs (such as housing vouchers) had the strongest study designs and largest reduction in violence. For example, one standard deviation increase in percentage of neighbourhood residents with a college degree was associated with a 40% reduction of youth homicide mortality. Urban upgrading measures that demonstrated positive effects included improved transport, lighting, buildings, police accessibility, higher vegetation levels and business improvement districts. There was insufficient evidence to support neighborhood diversification as an effective violence prevention strategy.

4.0 Limitations

The main limitations of this rapid review and the studies included in this report are:

- The search strategy focused on systematic reviews written in English which were indexed in MEDLINE, Cochrane Database of Systematic Reviews, ERIC, Child Development & Adolescent Studies and SocINDEX. Reviews listed outside the searched databases and written in languages other than English may have been excluded.

- In order to contain the scope of this project, anti-bullying interventions were not included. The effectiveness of bullying prevention targeting children and youth would need to be the focus of a separate rapid review.

- There was significant heterogeneity between studies within and across the reviews. Heterogeneity stemmed from differences in populations, study designs, type of intervention, location, and outcome measures. All these differences made data synthesis difficult.

- The quantity of high quality evidence was limited. Any conclusions drawn from this rapid review should be considered in light of these limitations.

5.0 Discussion

This rapid review set out to answer the following question: what is the effectiveness of interventions targeting children and youth in preventing community violence? Several reviews identified promising or positive results, albeit with sometimes small to moderate ESs. Given the limited number of studies, significant heterogeneity and a dearth of high quality evidence, no definitive conclusions can be made.

Keeping in mind the limitations of the individual studies within the systematic reviews, there is evidence to support the use of a comprehensive multi-component violence prevention approach to reduce violence-related risk factors and strengthen protective factors for children and youth. CBIs yielded mostly positive results with regards to reducing child and youth aggression, but the ES was small to moderate. It is unclear whether reductions in aggression translate into reduced rates of community violence such as gang violence, shootings and stabbings. A moderate quality review supports the use of developmental prevention programs designed to promote pro-social behaviours and reduce violence among children and youth. Both CBIs and developmental prevention could be beneficial within a multi-component violence prevention framework.

The multi-agency/sectoral collaboration needed for multi-component interventions requires careful long-term commitment, planning and execution (Danaher, 2011). Challenges can emerge when sectors have diverse or conflicting mandates, project leadership changes over time, as well as when budget and/or political pressures direct agency/sector staff toward other priorities. Despite these challenges, comprehensive multi-component interventions may be useful in addressing multiple violence-related risk factors simultaneously. The roots of child and youth violence are manifold and a holistic set of effective interventions would likely be required to make a meaningful difference (McMurtry & Curling, 2008).

The studies included in this report do not define the various strategies related to multi-component interventions (e.g. pastoral care, teaching, discipline, management/organizational structure). Furthermore, there is not enough high quality evidence to guide how best to focus limited resources into a multi-component approach. More research is required and TPH could work with various partners to contribute to the evidence base.

Health units across Ontario are in a good position to leverage existing relationships with school boards and other community partners to support school-based multi-component interventions

aimed at preventing community violence. The Ontario Public Health Standards mandate Ontario health units to use a "comprehensive health promotion approach to improve the health of school-aged children and youth and to offer support to school boards and schools to assist with the implementation of health-related curricula and health needs in schools" including violence (Ontario Ministry of Health and Long-Term Care, 2018). Research has shown that comprehensive school health is an effective way to improve student health and educational outcomes leading to fewer behavioural problems (Joint Consortium for School Health, 2018).

Public health cannot address community violence in isolation. Violence has far-reaching consequences for both mental and physical health. It is strongly associated with the social determinants of health, including employment, socio-economic status, and educational opportunities. Unless significant efforts are made across sectors to address the complexity of these factors, sustained violence prevention gains are difficult to achieve (World Health Organization, 2014).

6.0 Recommendations

Considering the evidence and its limitations, the following recommendations should be considered:

- Explore opportunities to enhance TPH child and youth programming with multi-component, cognitive behavioural and developmental prevention interventions delivered universally rather than in small groups or specifically targeted at young people at risk of violence. Evaluating these interventions could contribute to the evidence base.

- Assess current TPH partnerships related to child and youth violence prevention and consider opportunities for new or enhanced multi-sectoral collaboration.

- To compliment this report, review current evidence to identify the effectiveness of: a) school-based bullying prevention programs, and b) interventions for parents which aim to prevent child and youth violence.

- Share this report with relevant stakeholders.

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Appendix A: Quality Assessment Summary

Quality Appraisal Rating: Strong (Score 8-10); Moderate (Score 5-7); Weak (4 or less)**

Study Details		Quality Assessment Criteria (HE Tool)											
Author	**Year**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total/10**	**Rating**
Atienzo, E., et al	2017	x	x	x	x	x	x	x	x	x	x	10	Strong
Barnes, T., et al	2014	x	x	x	x	x			x	x	x	8	Strong*
Cassidy, T. et al	2014	x	x		x	x			x		x	6	Moderate*
Farrington, D. et al	2017	x	x		x	x			x			5	Moderate
Hale, D. et al	2014	x	x		x	x		x	x		x	7	Moderate*
Melendez-Torres, G. et al	2016	x	x	x	x	x	x		x	x	x	9	Strong*
Petrosino, A. et al	2015	x	x	x	x	x			x			6	Moderate
Rose-Clarke, K. et al	2019	x	x	x	x	x	x	x	x		x	9	Strong
Shackleton, N. et al	2016a	x	x		x	x	x	x	x	x		8	Strong
Shackleton, N., et al	2016b	x	x		x	x	x	x		x	x	8	Strong*

x - Scored 'yes' for criterion
* - Health Evidence Rating

****Criteria for quality assessment:**
(1) clearly focused question; (2) appropriate inclusion criteria to select primary studies; (3) comprehensive search strategy described; (4) search strategy covered adequate number of years; (5) description of level of evidence; (6) assessment of methodological quality; (7) results transparent (two independent reviewers quality assessed); (8) appropriate to combine/compare studies; (9) appropriate methods for combining results; (10) author's interpretations are supported by the data.

Appendix B: Data Extraction Table

General Information	Details of Review	Outcomes	Results	Comments/Limitations
Author: Atienzo, et. al **Year:** 2016 **Title:** Interventions to prevent youth violence in Latin America: A systematic review **Quality Score:** 10/10	**Purpose:** To summarize the evidence on the effectiveness of interventions to prevent youth violence in Latin America **Population:** Youth ages 10-24 years **Types of Interventions**: • Community based – multi-component • School based – multi-component • Family based **Intervention setting:** Latin American schools and or communities **Number of studies:** 9	**Primary outcomes:** Interpersonal community violence	**Main Results:** Results for studies that reported statistically significant results: • Two studies reported a decrease in youth homicides based on official records (ES -52% to -69%) or perception of occurrence ((ES -40%). • One study reported a decrease in youth violent crimes, including but not limited to homicides. • Three studies measured youth violent behaviour (fights, bullying, anti-social behaviours) based on self-report data; two studies reported decreases and one study reported an increase in violence. • Two studies measured youth crime, deviant behaviours, vandalism, etc based on self-reported data; one study reported no change in violence, the other reported an increase. • Six studies measured youth violence within the school/community as reported by others; six studies reported decreases in violence and one reported an increase. **Key Message:** Most of the interventions were shown to reduce youth violence, particularly homicides. In additions, most interventions reduced community perceptions of the presence of youth violence. Multi-component community-based interventions provided the most promising findings with a reduction in homicides.	**Comments:** Measures of violence and/or crime included murders, fighting, aggression, robbery or bullying at the individual or community/group level. Five studies were conducted in Chile, and the others were in Brazil, Peru, El Salvador and in the Mexico-US border, mostly in school settings. **Limitations:** A limited number of studies met the inclusion criteria for this Systematic Review. Most studies used non-experimental designs. Heterogeneity amongst studies and programmes made it impractical to compare the results across studies. Therefore, the authors could not accurately state which youth violence prevention programmes work best. Studies were limited to settings in Latin America.

Author: Barnes et al. **Year:** 2014 **Title:** School-based cognitive behavioural interventions in the treatment of aggression in the United States: A meta-analysis **Quality Score:** 8/10	**Purpose:** • to examine the effectiveness of school-based cognitive behavioural interventions (CBIs) to ameliorate or reduce aggression in children and youth • to explore the effects of studies that use school personnel (i.e. teachers, guidance counselors, school social workers) compared to those that used study personnel (i.e. research staff, or others not employed by the school) as implementers • to determine the effects of CBIs delivered universally compared to those that are delivered in small group settings **Population:** Elementary Students in grades 1-8 **Types of Interventions**: Cognitive behavioural interventions (e.g. interventions that use behavioural principles, behavior therapy, and cognitive mediation through self-talk) **Intervention setting:** Elementary schools **Number of studies:**25	**Primary outcomes:** Aggressive behaviour	**Main Results:** In the majority of the studies, treatment participants had lower levels of aggression following intervention. Of the effect size (ES) scores, 74% were negative (aggression in the treatment group was lower after intervention) and 26% were positive (aggression in the treatment group was higher after intervention). CBIs delivered universally had significantly larger effect sizes than studies that used small group delivery. **Key Message:** This meta-analysis found support for the use of school-based CBI in ameliorating aggression in children and youth, though the study ES was small to moderate when compared to results of previous meta-analyses referenced.	**Comments:** Universally delivered interventions are often more practical and feasible because they are provided in the classroom by school staff, and require no additional staff/personnel to conduct students screening, or provide dedicated space for behavioural programming. Over the last 15-20 years, there has been an increase in school-wide violence prevention programming. Such an increase in school wide violence prevention programming may mean that students in the business as usual control conditions are exposed to broad based interventions throughout the school, some of which may have the same components found in CBI. Consequently, the treatment effects of classroom or small group preventative and intervention programming (e.g. CBI) may be lower than expected. **Limitations:** The reviewers encountered limitations in the reporting of study effects across the 25 studies. No comment from the author as to whether the person/people delivering the treatment influenced effect of treatment.

Author: Cassidy, et. al. **Year:** 2014 **Title:** A systematic review of the effects of poverty deconstruction and urban upgrading **Quality Score:** 6/10	**Purpose:** To examine the existing evidence for youth violence interventions involving the deconstruction of poverty and urban upgrading. **Population:** Youth ages 10-29 years **Types of Interventions**: • Poverty deconcentration (resettlement, diversification) • Urban upgrading (improvements to the build or physical environment of an area) (page 80, 2.1.3 Descriptions of Interventions) **Intervention setting:** Urban communities **Number of studies:** 10	**Primary outcomes:** Interpersonal violence	**Main Results:** Urban upgrading interventions that reduced youth violence included: improved transport, lighting, buildings, police accessibility, higher vegetation levels and business improvement districts Among resettlement interventions, housing vouchers were found to have a large reduction in youth violence exposure. Prevalence to college degree exposure was found to have a significant effect on reducing youth homicide mortality; one standard deviation increase in percent with college degree led to 40% lower mortality rates Diversification interventions included having teachers and police officers incentivized to move into selected revitalization areas. **Key Message:** The strongest study designs and demonstrated positive effects were shown for resettlement interventions. Some evidence supported a variety of urban upgrading interventions. No strong evidence was available to support diversification as an intervention.	**Comments:** Interpersonal violence is measured by: • # of violence incidents, homicides or assaults in a given area or group • Hospital records (if the hospital or clinic had complete coverage of the geographical area of interest) • Police records The ten included studies describe 5 urban upgrading interventions. Youth violence is defined as the intentional use of physical force or power, threatened or actual, against another person resulting in injury, death, psychological harm, maldevelopment or deprivation, perpetrated by or against people 10 – 29 years. **Limitations:** The strongest evidence was found among resettlement interventions that are more amenable to experimental design (RCTs) than urban upgrading because the difficulty of imposing controls in the latter and due to the presence of confounding variables affecting outcomes. Resettlement interventions run the risk of self-selection bias. Causation cannot be implied from the evaluations included in this review due to low the number of included studies and their complexity.

Author: Farrington, D. et. al. **Year:** 2017 **Title:** Systematic Reviews of the effectiveness of developmental prevention programs in reducing delinquency, aggression and bullying **Quality Score:** 5/10	**Purpose:** to identify systematic reviews of the effects of developmental prevention programs on offending outcomes. **Population:** Children and adolescents up to age 21 **Types of Interventions**: Developmental prevention programs are defined be the authors as community-based programs designed to prevent antisocial behaviour in children and adolescents, and aim to change individual, family or school risk factors. **Intervention setting:** Community **Number of studies:** 50	**Primary outcomes:** Anti-social behaviours including: • Delinquency • Offending • Violence • Aggression • Bullying	**Main Results:** Effect sizes were calculated for 33 reviews; all types of programs were effective; effect size was statistically significant in all except four cases. Median effect size was 1.46 to decrease aggression of about one-quarter. Family-based programs reduced child and youth delinquency, particularly with young people under the age of 15 (OR 1.44, CI 1.19–1.75). School-based programs reduced violence, with significant efficacy when delivered universally and targeted on multiple risk factors (OR 1.20, CI 1.06–1.37). School based results may be effected by a larger proportion of universal programs in school-based prevention programs, which often show smaller effects than risk-based selective or indicated interventions. Reviews of 25 experimental and quasi-experimental evaluations of school-based cognitive-behavioral interventions yielded a mean effect size of d- 0.23 (OR 1.52) indicating that these types of interventions are effective in reducing aggressive behaviour. Reviews of 22 experimental and quasi-experimental studies with assessments before and after multi-systematic therapy (MST) yielded an overall effect size of d= 0.21 (OR 1.44, CI 1.19-1.75). Effects were greater with offenders and juveniles aged under 15. One review of 24 evaluations of school-based violence prevention programs yielded significant desirable effect of violence effect on aggression (d=0.261, CI = 0.037 to 0.485) but not on delinquent behaviour (d= 0.080, CI = 0.039 to 0.199).	**Comments**: This SR aims to update a previous assessment of systematic reviews of developmental prevention by Farrington[1]. Systematic reviews included: • Individually focused interventions (n=11) such as training in social competencies, interpersonal problem solving and other behavioural or cognitive skills • Family-based programs (n=9) including training in parenting skills, counseling on child-rearing or coping with family stress • School-based programs (n=25) including strategies to address school and class climate, bullying and authoritative teacher behaviour • Need for long-term follow-ups **Limitations:** More systematic reviews of developmental prevention are needed with stronger methodological quality.

			For individually focused intervention, programs delivered universally were more effective than programs delivered in small groups. For family programs, multi-systemic therapy is more effective with offenders and juveniles 15 years and younger. **Key Message:** For the 33 studies where mean effect sizes were calculated, individually-focused, family-based, and school-based interventions were effective in reducing youth aggression.	

Author: Hale et.al. **Year:** 2014 **Title:** A systematic review of effective interventions for reducing multiple health risk behaviours in adolescence **Quality Score:** 5/10	**Purpose:** To identify randomized controlled trials that reported significant universal or selective intervention effects for at least two health risk behaviours among adolescents. **Population:** Adolescents ages 10-19 years **Types of Interventions**: Universal or selective (i.e. targeting at risk populations) interventions on multiple health risk behaviours (MHRB) including multi-component programs **Intervention setting:** School Community Family/Home Web/online **Number of studies:** 55	**Primary outcomes:** • Tobacco, alcohol or illicit drug use • Sexual risk behaviour • Aggressive behaviour	**Main Results:** Effect size for interventions related to aggressive behavior ranged from small to medium, with some effect sizes not reported in the systematic review. Where a medium effect size was reported, carried a bat as a weapon (OR 2.50 CI 1.39-4.35, the study quality was weak. **Key Message:** While there is evidence that MHRB interventions have some effect on aggressive behavior among adolescents, the effect size within reviewed studies is most commonly small or unstated.	**Comments**: The 55 RCTs studies focused on 44 interventions. The majority (78%) of the studies examined school based interventions. Of the 44 interventions, 14 targeted problem behaviours or aimed to increase healthy behaviours, and only 4 aimed to reduce at least one type of substance use and violence or delinquent behaviour. The age group for included studies were children and youth 10 to 21 years with the majority of the interventions targeting youth ages 11-13 years. **Limitations:** Interpret with caution as this systematic review only included studies in which the intervention was effective for two or more risk behaviours. Therefore, the data synthesis does not take into account MHRB interventions that were ineffective and/or increased aggressive behavior. The high degree of heterogeneity in both the studies and the reporting outcomes preclude a meta-analysis. The studies varied considerably in quality, methodology, intervention techniques, and results, making cohesive data synthesis difficult.

Author: Melendez-Torres et al. **Year:** 2016 **Title:** Systematic review and meta-analysis of effects of community-delivered positive youth development interventions on violence outcomes **Quality Score:** 9/10	**Purpose:** To test the effectiveness of positive youth development (PYD) interventions for reducing violence in young people **Population:** 11 – 18 year olds **Types of Interventions**: Positive Youth Development (PYD) PYD is defined by the authors as: "voluntary education outside of school hours aiming to promote generalised (beyond health) and positive (beyond avoiding risk) development of assets (bonding, resilience, social, emotional, cognitive, behaviour or moral competence, self-determination, spirituality, self-efficacy, clear and positive identity, belief in the future, recognition for positive behaviour, opportunities for prosocial involvement and/or prosocial norms)." **Intervention setting:** Community-delivered, community –based outside school hours. **Number of studies:** 3	**Primary Outcomes:** Prevention of violence (e.g. perpetration of violence, victimization)	**Main Results:** PYD did not have statistically significant effect on violence outcomes across all time points (d-0.021, 95% CI -0050 0.093). Short-term outcomes yielded statistically significant effects but marginally in sensitivity analysis (d- 0,076, 95% CI 0.013 to 0.140). **Key Message:** The evidence suggests that PYD interventions do not have a significant effect in reducing youth violence.	**Comments:** Meta-analysis of included studies: 10 effect sizes from 3 studies in an overall meta and 7 effect sizes from 3 distinct studies of short-term outcomes (measured at post-intervention). Three studies met the criterion Big Brothers Big Sisters (BBBS) Quantum Opportunity Project (QOP), and National Guard Youth Challenge Program (NGYCP). Participants were randomized in all three evaluations. Interventions occurred across multiple sites in the USA. **Limitations:** There was no meaningful program-level heterogeneity in this finding (I^{2}=0%) None of the included studies reported outcomes related to violence victimization Evaluations did not consistently report theories of change or implementation fidelity. Unclear if meta-analysis provides evidence that PYD theory of change is ineffective in reducing violence among young people. The scarcity of published evidence suggests that additional research is necessary before funding to these programs is increased.

Author: Petrosino et. al. **Year:** 2015 **Title:** Cross-sector, multi-agency interventions to address urban youth firearms violence: A rapid evidence assessment **Quality Score:** 6/10	**Purpose:** To identify effective cross-sector, multi-agency urban youth firearms violence reduction strategies **Population:** High risk urban youth (ages 14-24) **Types of Interventions**: • multi-component • focus solely on incarcerated persons • offer a school-based violence prevention curriculum **Intervention setting:** Urban neighbourhoods in the US **Number of studies:** 11	**Primary outcomes:** Firearm violence	**Main Results:** Ten evaluations report large decreases in some violence outcomes, including homicides, gang-related homicide incidents, shooting, non-fatal shooting and calls to police about gun shots. One evaluation reported no substantial decreases in violence in parts of the treatment area. In other areas, higher rates of violence were reported in the treatment area compared to the matched control areas. **Key Message:** 10 of 11 studies on cross-sector, multi-agency interventions show positive impacts in reducing firearm violence among youth.	**Comments:** All of the evaluations were focused on a single city, or neighborhood/area/ youth within the city. Most of the initiatives included multi-agency efforts, community mobilization, and the use of street outreach workers. The reviewers indicate that comparisons to similar cities in the same state, region or nation generally supported that the decline observed after the start of the initiative was unique and not part of any overall trend. At least three evaluations targeted suppression and social service strategies to specifically identify high-risk individuals. **Limitations:** The results should be interpreted with caution because the reviewers did not rely on statistical significance or confidence intervals to assess success. The authors report on the effectiveness of interventions individually. They do not provide a meta-analysis or comparison of findings.

Author: Rose-Clarke et. al. **Year:** 2019 **Title:** Peer-facilitated community based interventions for adolescent health in low and middle-income countries: A systematic review **Quality Score:** 9/10	**Purpose:** To conduct a systematic review of community-based peer facilitated interventions in low and middle-income countries (LMICs) adolescent health. **Population:** Adolescents ages 10-19 **Types of Interventions**: Peer-facilitated interventions – e.g. Peer education (delivered in whole or in part by peer facilitators) where peers sought to increase adolescents' knowledge or influence their attitudes, 'counselling', defined as peers providing support to help adolescents resolve personal or psychological problems, 'activism' involving peer-led campaigns to change health-related policy, and 'outreach' with peers engaging marginalised adolescents **Intervention setting:** Community-based in LMICs (e.g. schools, youth clubs, primary health care centers) **Number of studies:** 43	**Primary outcomes:** • Infectious and vaccine preventable diseases • Undernutrition • HIV and AIDS • Sexual and reproductive health • Unintentional injuries • Violence • Physical disorders • Mental disorders • Substance use	**Main Results & Key Message:** A single study (Balaji et. al.) found that multi-component interventions involving peer education, community activities, teacher training and dissemination of health materials reduced perpetration of physical violence (rural areas OR 0.29 CI 0.15–0.57; urban areas OR 0.59 CI 0.40–0.87) among adolescents in India.	**Comments:** Of the 43 included articles describing 20 randomized controlled studies and 3 studies were related to violence. Only one study (Balaji et al) examined violence outcomes that met our inclusion criteria. **Limitations:** Several trials only included specific health outcomes as secondary indicators. For example, some were powered to detect differences in sexual and reproductive health outcomes but also included outcomes related to violence and mental health. Such trials may have been under-powered to detect significant differences between intervention and control arms for secondary indicators, and prone to false positives.

Author: Shackleton et. al **Year:** 2016a **Title:** Systematic review of reviews of observational studies of school-level effects on sexual health, violence and substance use **Quality Score:** 8/10	**Purpose:** To report a systematic review of reviews to examine observational studies of school-level effects on substance use, violence and sexual health **Population:** Youth ages 11-18 (reviews included children and young people ages 4-24, most reviews focus on ages 10-18) **Types of Interventions**: Multi-component Intervention include the following: • School level exposures related to physical and social environments • Management/organization • Teaching • Pastoral care • Discipline • School health services • Whole school health promotion activities & policies • Extra-curricular activities **Intervention setting:** Schools **Number of studies:** 11	**Primary outcomes:** Prevention of: • Substance use • Sexual Health • Violence, including: • Victimization • Perpetration of violence • Perceived safety • Carrying weapons	**Main Results:** A medium quality study suggests that schools which are more successful in engaging students have lower rates of group fighting. A low quality review concluded lower rates of student violence were associated with: • engaging school environments • a student population that is aware of the rules and thinks they are fair • physical environments that were not disorderly **Key Message:** There is good evidence that a positive school ethos is associated with a range of health outcomes. The following school effects had limited evidence of benefits related to violence outcomes: • Student connections to school/teacher • School rules/policies • Physical environment	**Comments:** Although the primary outcomes include substance use, sexual health and violence, only three reviews report outcomes for violence. Among these three studies, two met our inclusion criteria. **Limitations:** Reviews of reviews are only as good as the reviews included. There was heterogeneity between and within the observational reviews. Methodological or conceptual biases may exist. Included reviews may not represent the most up-to-date research.

Author: Shackleton et. al. **Year:** 2016b **Title:** School-based interventions going beyond health education to promote adolescent health: A systematic review of reviews **Quality Score:** 8/10	**Purpose:** This systematic review of reviews examines the effects of school-based interventions on young people's substance use, violence and sexual health, such as: - school policies - improving how schools respond to bullying - parent outreach **Population:** Students ages 11-18 years **Types of Interventions**: Multi-component school based including:: • school based interventions addressing social or physical environment • management/organization • teaching • pastoral care • discipline • school health services • whole-school health promotion activities • policies • extra-curricular activities **Intervention setting:** Schools **Number of studies:** 22	**Primary outcomes:** • Sexual health • Substance use • Violence	**Main Results:** A high quality review reported that multicomponent interventions (i.e. Health promoting school interventions: input into the curriculum, changes to the school's ethos or environment or both, and engagement with families or communities or both) appear to reduce bullying victimization. There is some evidence that multicomponent interventions simultaneously addressing violence and substance use show promise in tackling violence. However, more research is needed. There is little evidence that targeted interventions involving social-skills training, school based mentoring, or most forms of therapeutic intervention are effective in reducing violence. There is insufficient review evidence to assess the effectiveness of peer mediation in reducing violence. A low-quality review narratively synthesized four RCTs of whole-school interventions that included parent-training/education. The review did not conclude whether those interventions were effective but reviewers suggested that parental involvement in whole-school interventions may be beneficial. **Key Message:** Multi-component interventions reduce youth violence. Targeted interventions to reduce violence outcomes are ineffective or harmful.	**Comments**: The 22 reviews included: • High quality = 4 • Medium quality = 11 • Low quality = 7 Four reviews examined the effects of multi-component interventions on violence (one high quality review with only high quality evaluations; one low quality review, but included high quality evaluations; and two low quality reviews with limited information on the effectiveness of interventions). Most studies were conducted in the US with African-American populations. Reviews including only classroom based health education interventions were excluded **Limitations:** Since reviews of reviews (RoRs) are still in development and there is no agreed upon method of synthesis. RoRs are only as good as the reviews included. There is a lack of high quality reviews of sexual health clinics and peer mediation. RoRs may not represent the most recent research in the field.