Many interventions have been developed to try and tackle the rise in youth and gang related violence and it has been suggested that more could be done to reduce violence in this area. However, it is important to understand whether there is evidence of effectiveness of these interventions in the UK context. This rapid review aims to evaluate the evidence for interventions aimed at reducing youth or gang violence across the UK.

A Rapid Review of Interventions to Reduce Youth and Gang Violence in the United Kingdom

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1. Introduction

Globally, around 200,000 homicides occur among youth aged 10-29 annually, which accounts for 43% of the total number of homicide each year [1]. This makes homicide the fourth leading cause of death in this age group. Not only does it contribute to the global burden of premature death in youth, it also hugely increases the costs to the health, justice and welfare systems.

In Europe, there has been a general downward trend in homicide since 2008 [2]. However, in recent years, the number of homicides in France, Germany and United Kingdom (UK) has risen. The annual amount of intentional homicides varies even within the UK: Among EU member states, Northern Ireland ranked 17th, Scotland ranked 13th and England and Wales ranked 10th in terms of homicide rates [2].

The UK and Scottish governments have put great emphasis on reducing violence [3]. Scotland adopted a public health approach to violence prevention [4]. This approach works across individual, community and societal levels to understand the root causes of violence and offer solutions that will reach the maximum number in the population. The success of this approach can be seen in the reduction in violence in Scotland in recent years: the number of homicides is now at its lowest level since 1976 [5]. In England and Wales, although overall levels of violence have not changed in the past year [6], there has been a significant increase in recorded offences involving a knife or sharp instrument and an increase in homicide [7][8]. The phenomenon is also supported by National Health Service (NHS) statistics: hospital admissions for assault by a sharp object increased from 3676 in 2013 to 4986 in 2018 [9]. The increase in knife crime is particularly concerning as it tends to impact disproportionately on young people [7].

Many interventions have been developed to try and tackle the rise in youth and gang related violence and it has been suggested that more could be done to reduce violence in this area [10]. However, it is important to understand whether there is evidence of effectiveness of these interventions in the UK context. This rapid review aims to evaluate the evidence for interventions aimed at reducing youth or gang violence across the UK.

1. Methods

1.1 Definition

Prior to embarking on the rapid review it was important to define some of the main search terms to be included.

2.1.1 Youth violence

The United Nation (UN) defines youth as "persons between the ages of 15 and 24" [11], however younger teenagers are also included here to allow inclusion of some interventions covering younger age groups.

2.1.2 Gang

The Centre of Social Justice defines a gang as [12]:

"A relatively durable, predominantly street-based group of young people who (1) see themselves (and are seen by others) as a discernible group, (2) engage in a range of criminal activity and violence, (3) identify with or lay claim over territory, (4) have some form of identifying structural feature, and (5) are in conflict with other, similar, gangs."

2.2 General Literature review

An initial broad literature search was carried out to give an overview of violence in the UK and globally. Crime statistics, government reports and previous reviews on violence reduction were included to provide contextual information [4][10][13].

2.3 Rapid Review

The WHO defines a rapid review as [14]:

"A type of knowledge synthesis in which systematic review processes are accelerated and methods are streamlined to complete the review more quickly than is the case for typical systematic reviews."

In general terms, search criteria included youth or gang violence, male participants, interventions and studies from or about the UK.

Search criteria were agreed by CAG and CWS and applied. Studies were limited to English language only (Table 1).

Table 1. Inclusion criteria and corresponding search terms

Inclusion criteria	Search terms
Youth/gang	youth OR young OR teenage OR child OR children OR adolescent OR juvenile delinquency OR gang
Violence	violen* OR aggress* OR murder OR assault OR homicide OR grievous bodily harm OR actual bodily harm OR injury OR threats to kill
UK	UK OR United Kingdom OR Great Britain OR England OR Scotland OR Wales OR Northern Ireland

Intervention	*(Not applicable: done manually)*

Exclusion criteria were also implemented (Table 2).

Table 2. Exclusion criteria

- Other types of violence such as gender-based violence, sexual violence, domestic violence, terrorism, sectarian violence, political violence and self-directed violence
- Studies outside UK
- Studies on older adults
- Researches related to forensic mental health or psychiatric patients
- Female participants
- Policy paper without an actual intervention

The rapid review was carried out between February and March 2019. A search was carried out of three databases, Web of Science, PsycInfo and Medline. English language articles published between 2009 and 2019 were retrieved. Titles, abstracts and full text of articles were further screened based on their relevance to the inclusion and exclusion criteria.

Study characteristics, including sample size, intervention, outcome measures, and effectiveness (Table 3). The level of evidence of the studies were evaluated based on the framework from Melnyk & Fineout-Overholt (2011) [15] (Table 3). An additional hierarchy [16] was used to provide additional information on the level of evidence of studies with a qualitative component. The frameworks can be seen in Figures 2 and 3. Papers were grouped into key theme areas for analysis and discussion.

Table 3. Summary of study characteristics

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
Before and after quasi experiment -tal study	Williams, Currie, Linden & Donnelly (2014) East end of Glasgow, Scotland (CIRV)	n=334, young men with a mean age of 17.8 (range 16-29)	Type: Multiagency, group intervention, case management Description: Needs analysis, services by third-sector parties e.g diversionary services, personal development / existing statutory service Utilise the established gang structure and social relationship as a positive tool to reduce gang violence	Rate of offending evaluated through police data	A multi-agency, community-centred approach can reduce rate of knife carrying and rate of physical violence	Effectiveness of the program proven by helping gang-related youth to address their violent lifestyle	Study design: selection bias Susceptible to maturation effect Criminal-justice instead of emergency department data is used for evaluation of violence prevention Observer bias Probability of over-generalisation of effectiveness	III
Exploratory review	Densley (2016) Group Violence	515 gang related arrest, 30 people invited for call-in	Type: Group, brief intervention Description:	Compares and contrast the group violence intervention in London and	Problem leading to failure of GVI in London: Perceived policing injustice		Low level of evidence: expert opinions	VII

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
	Intervention (GVI)		Focused deterrence Engage violent gang group directly by police and community representatives Social service offered to group members that wish to escape their gang lifestyle	St. Paul, Minnesota	Lack of balance between offers from social service and punishment Only worked on individuals instead of groups in some borough			
RCT	Butler et al. (2011) London Multisystemic therapy (MST)	n=108, age 13-17	Multi-systemic therapy (MST), family, home and community based intervention Description: 3-5 months Targeting: - Family relationship - Social network - Parenting skills	Rate of youth offending Improvement of youth sociality, family function Potential mediators of change	MST adds value to statutory youth offending service Significantly greater reduction in self-reported aggressive and delinquent behaviour No statistical significance on rate of offending	First RCT on effectiveness on MST	Small sample size Absence of no-treatment condition as control Does not indicate the most beneficial aspect of MST on youths and families problems	II

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
			- Personal achievement		MST is best used to facilitate statutory service.			
Qualitative study	Butler et al. (2012) London MST	n=21, families of participants aged 13-17	*(see above)*	Expectations and experiences on MST Factors lead to and process of change	Therapeutic relationship is important for engagement in the programme Effect of MST: - Improved parental confidence - Improved family relationship - Greater reflection and aspiration of the young people	Process of change explored, in supplement to the above RCT	Positive bias in the sample	VII, descriptive
RCT	Humayun et al. (2017) England Family Functional Therapy (FFT)	n=111, age range 10-17	Type: family intervention Description: Systemic, cognitive and behavioural intervention Address behavioural	Self-report delinquency	Failed to show greater reduction of antisocial behaviour in the FFT group	Study design Experienced therapists	Adequate but less than self-defined programme fidelity threshold	II

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
			problems through increasing family support					
RCT, along with process evaluation	Bonell et al. (2018) Southeast England INCLUSIVE trial	n=6667, secondary school student	Type: School-based risk factor intervention Description: Modify the school environment to reduce bullying and aggression, and promote student health Staff were trained on the execution of restorative approaches and were provided with lesson materials on social and emotional skills for students	Self-reported experience of bullying victimization and perpetration of aggression	Intervention worked on reducing bullying, but fail to demonstrate an effect on reduction of aggression	High retention rate of studied schools Sufficient length of follow up	Problem of multiple testing Absence of students at follow up	II
Evidence synthesis	Healey et al. (2013)	/	Type: Risk factor intervention	Trend of underage youth drinking	Strong association between alcohol consumption and violent offending	Provide timely evidence	Less rigorous than systematic review	V

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
	Alcohol intervention		Description: Alcohol interventions can be categorized into (1) universal (2) selective (3) indicated	The link between violent offending and underage drinking Evidence base for effective alcohol harm reduction interventions aimed at youth	Lack of evidence on effectiveness of alcohol brief intervention specifically targeting youth		No concrete framework/ definition for evidence synthesis	
Clustered-RCT	Obsuth et al. (2017) London Education and Inclusion Project (LEIP) Engage in Education – London (EiE-L)	n=738, secondary school students	Type: Risk factor, brief intervention Description: One hour long individual and group sessions over 12 weeks. Materials of intervention was developed to address participants' communication, social and behavioural issues	School exclusion	Short-term school-based interventions are unlikely to lead to change in students' behaviour	Study design High retention rate Sufficient power to detect small to medium effect	Low attendance of intervention session Low family contact utilization Difficulties in baseline data collection due to scheduling problem	II

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
Mixed method study	Blagden & Perrin (2017) England and Wales Man-up programme	n=10 age range 13-18	Type: Risk factor, brief intervention Description: Active learning, Delivered over 6 sessions Aim to challenge gender stereotype	Attitude Masculine identity Self-esteem Risk taking behaviour Beliefs about offending	Intervention leads to increase in awareness of risk-taking behaviour Importance of relational dynamic within interventions in the change process	Mixed method allows both outcome and process evaluation	Small sample size Small scope of generalisabili-ty	V, descriptive
Mixed method study	Down, Willner, Watts & Griffiths (2011) Cognitive Behavioural Therapy (CBT) Personal Development (PD)	n=33, adolescent with mean age of 13.7	Type: Risk factor intervention, group-based counselling and psychotherapy Description: 10 90-minute session CBT: "Hassle logs" Role plays Aim to improve: Communication, self-esteem, social and	Quantitative: Anger control Use of behavioural and cognitive skill to cope with anger Improvement of self-image Qualitative: expectations and thoughts on efficacy and process	Both CBT and PD were effective when compared to waiting list control PD more suitable for younger children, CBT more suitable for adolescent PD more suitable for proactive aggression, CBT more suitable for reactive aggression	Mixed method allows both outcome and process evaluation	Small sample size Similar content shared in two comparison groups	V, descriptive

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
			problem-solving skills PD: Creative and projective exercises, group discussions Aim to improve: motivation for controlling anger, identity and self-esteem					
Qualitative case study	Parker, Meek & Lewis (2013) South of England Sports-Based Intervention (SBI)	n=12 age range 15-17 years old	Type: Diversionary, brief intervention Description: Sports sessions Classroom sessions on theory Custodial setting	Participants' motivation on intervention and perceived impact	Sports-based intervention for young offenders bring significant psychosocial benefits Multi-agency support is important	Able to describe the unique contribution of sports intervention	Small sample size Generalisabili-ty	VI, conceptual
Qualitative study	Kelly (2012) England Sports-Based Intervention	n=88, participating young people, managers, staff	Type: Diversionary, brief intervention Description:	Explore the understanding of stakeholders on purposes, strengths and	Sports as tool for attracting participation of youths to the programme		Lack of evaluation on whether SBI can be independent from state-led	VI, descriptive

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
	(SBI): Positive Future		Sports-based activity sessions in deprived areas Nationally funded, locally managed	weaknesses of SBI	Relationship approach: programme workers as role model SBI as diversionary activities		crime reduction strategies	
Mixed method study	Daykin et al. (2017) England and Wales Music programmes	n=118, aged 13-21	Type: diversionary, brief intervention Description: Weekly group sessions of 90 minutes to 3 hours Active learning Music production techniques Instrument learning	Participants' experiences of the sessions Views on music and its relevance to health and wellbeing	Music as double-edged sword on behaviour of participants Group dynamics, programme delivery, social inequalities and contextual factors influence effects of music	Detailed examination on potentials and challenges of music as social intervention	Lack of follow up to investigate long-term impact	V, conceptual
Qualitative study	Hemingway et al. (2015)	n=20, age 18 to 21, incarcerated male	Type: Diversionary, brief intervention Description:	Participants change of Behaviour and attitude of participants	EFL positively affects the behaviour of the participants through developing their	Study design allows exploration of effects of EFL	Small sample size Limited scope of	VI, conceptual

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
	Equine-Facilitated Learning (EFL)		Seven 2.5 hours sessions in 4 days Learning of natural horsemanship skills Custodial setting		calm assertiveness, focus and confidence. Practical interventions with immediate feedback are essential in bringing about changes		generalisabili-ty	
Quasi-experimental study	Biehal et al. (2011) England Intensive Fostering (IF)	n=47, young people mean age 14.9 and 15.5 for intervention and control group respectively	Type: Community-based, diversionary intervention Description: Short term foster placement Short term follow-up care Positive behaviours were encouraged via a system of points	Reconviction rate Entry of custody	Effective in reduction of reconviction and offenses and increase in education reintegration of persistent offender IF has a protective effect, but change of environment and longer term follow up is necessary to sustain the effects	Highly statistically significant result	Small sample size	III
Qualitative study	Deuchar (2012)	n=20, aged 16-21	Type: Enforcement Description:	Impact of EM and curfew on social strain and support of	Limited success of EM and curfews on anti-social	Have the potential to inform	Small sample size	VI, conceptual

Study design	Author. program and location	Sample size	Intervention type and description	Primary outcomes/ aims of study	Key themes	Strength	Limitations	Level of evidence
	West of Scotland Electronic monitoring (EM) and curfew		Wearing of Personal Identification Device (PID) Part of correctional system Aim of reducing likelihood of reoffending through sanctioning.	youth and their parents	behaviours of young people	government policy		

2. Results:

3.1 Flow diagram:

The screening process is shown in Figure 1. Initial searches yielded 386 titles, of which 320 remained after removing duplicates. Article titles were screened individually by CWS and CAG, 56 consensual records remained. Further abstract screening by CWS left 19 studies. A further 2 studies were excluded due to their specific psychiatric setting. 1 intervention programme with 2 publications of which only 1 was selected, leaving 16 full articles in the rapid review.

3.2 Study characteristics

Characteristics of the extracted intervention studies were summarised (Table 3). The 16 studies were all from different programs. There was significant heterogeneity in study design: 4 randomized control trials (RCT), 3 mixed method studies, 3 quasi-experimental studies, 3 qualitative studies and 2 qualitative literature reviews. Sample size of the studies ranged from 10 [17] to 6667 [18]. The studies were done in either community or custodial settings. The studies were grouped into five themes based on their main objectives (Table 3).

3.2.1 Family interventions

Three studies by Butler et al. (2011 &2012) [19][20] and Humayun et al. (2017) [21] fell under this theme.

Butler et al. (2011) [19] established that Multisystemic Therapy (MST) led to improvements in broader social behaviour compared with usual services with an RCT of high level of evidence (Table 3). However, the study failed to reach statistical significance on rates of violent offending because of small sample size. The process of change was further explained by Butler et al. (2012) [20]. The positive changes in antisocial behaviour were mainly mediated by, first, the development of prosocial aspirations and then by reflection on the negative consequences of their behaviours on their parents and prospects.

Humayun et al. (2017) [21] found that there was no significant difference between Functional Family Therapy (FFT) and standard services at any time point of the study on any ASB measure. The lack of effect of FFT was explained by the better management as usual (MAU) in England than in United States. 23% of cases in the study failed to reach the fidelity threshold determined by the researchers, which may also limit the power of the study. It was also argued that family therapy may be less effective than interventions specifically targeting offending individuals.

3.2.2 Diversionary interventions

There was huge heterogeneity in intervention design in this theme (Table 3) [22][23][24][25][26].

However, despite this, interventions in this theme shared similar approaches to divert youth from their antisocial behaviour through offering encouraging and non-judgemental environments with proper supervision often within custodial settings.

Equine-Facilitated Learning (EFL) [25] aimed to improve the communication skills of the participants (Table 3). The authors concluded that the programme was helpful in facilitating temper control and interpersonal skills development. It should be noted that this study had a

small sample size and only included young people in custody with high risk of offending. As such this study may not be applicable to a more general population

Daykin et al. (2017) [23] pointed towards the positive value of music in complex custodial settings for youths, despite programmes being too short to be able to generate positive health outcomes. The programme seemed to offer a non-stigmatizing space for youth in custody to explore their identities and abilities and to engage in group learning. However, some of the participants showed feelings of exclusion and loss of confidence during music-making. The role of contextual factors, such as peer group dynamics, on the effect of the intervention requires further investigation.

Intensive Fostering (IF) consisted of foster placements with follow up (Table 3). Biehal et al. (2011)[22] stated that IF provided a reinforcing environment where young people were properly mentored, with a clear boundary limiting their behaviours, diverting them from anti-social peers and helping to build up social skills. The highly significant reduction in reconviction rate and number of offences within the duration of programme suggested that IF may be effective in managing juvenile delinquents in community settings. The author has however pointed out that the positive effect of the programme dissipated after the termination of the programme signifying the difficulty of sustaining the changes when the young people were re-exposed to their previous environment.

Parker et al. (2013)[26] stated that sporting activity has the potential to engage vulnerable youth in custodial settings. Young people seemed to have increased self-esteem and better developed social skills through participation in sport, which facilitated their desistance from re-offending. Kelly (2012)[24] has reported similar findings on the "promotion of prosocial attitudes" (P.270) and another positive funding was the provision of space for young people to communicate freely without police interference. Kelly's study (2012) also found that the partnership formed between agencies in delivering their SBI led to more effective delivery of youth services. Both studies were however qualitative in nature with small sample size and concentrated on individual programmes. The positive outcomes in both custodial and community settings suggest a larger study may be of value.

3.2.3 Risk factor interventions

Interventions under this theme targeted youth and gang violence indirectly. They aimed to tackle the major risk factors for violence (Table 3) [17][18][27][[28][29].

An intervention, Engage in Education – London (EiE-L), which aimed to reduce school exclusion and associated behaviours was designed and evaluated using an RCT (Table 3) [27]. However, the intervention was shown to be ineffective, with students in the treatment group more likely to report exclusion than those in the control. Obsuth et al. (2017) [27] concluded that short-term school based interventions delivered by external providers alone may not be effective in reducing school exclusion and subsequent disruptive and aggressive behaviours. The authors suggested instead that a whole-school approach should be taken to build an inclusive climate to produce a positive and lasting change.

The INCLUSIVE trial [18] aimed to reduce bullying and aggressive behaviours at school (Table 3). The RCT failed to establish a significant overall reduction in student-reported

aggression, but there were significant effects in schools with higher baseline bullying and aggression, as well as improvement in other secondary outcomes, such as psychological function, quality of life and reduction of police contact. The authors stated that the lack of effect on aggressive behaviour could be explained by the consistently stronger effect on victimisation than perpetration of school-based prevention programmes.

The Man-Up programme [17] was designed to support young men exploring how masculinity affects the construction of their personal identity (Table 3). Masculinity was thought to be a risk factor for violence and ASB. There was a statistically significant change in masculinity indicators suggesting a decrease in their perception of male 'toughness' as part of their identity and an increase in awareness of consequences of risk-taking behaviours and in self-esteem. It was also suggested that the intervention assisted participants in considering their future and making changes to their current self. The study took a mixed-method approach which highlighted both the magnitude and process of identity reconstruction but it should be noted that all the results were drawn from only 10 participants.

Down et al. (2011) [28] compared the efficacy of Cognitive Behavioural Therapy (CBT) and Personal Development (PD) on anger management. The content and aims of the interventions were summarised in Table 3. The quantitative outcomes of the study suggested a decrease in anger expression in both experimental and control groups. The difference between CBT and PD on their anger management approach affects their application (Table 3). For example, the creative approach of PD may be more suitable for children who are less sociable, less motivated and have lower confidence, while adolescents may benefit more from CBT. Further research was needed to understand how characteristics of adolescents affect the effectiveness of the interventions as the current study was not powered to address that.

Healey et al. (2014) [29] reviewed underage drinking in the UK context (Table 3). The review suggested that despite the high prevalence of underage drinking in UK, the majority of emergency departments do not have a harm reduction strategy for alcohol that specifically targets young people. The review stated that there was a lack of evidence on the effectiveness of alcohol reduction interventions for adolescents under 18 years of age. Besides, there was a general lack of engagement in various alcohol harm reduction programmes. This may also suggest that such strategy was ineffective, which warranted investigations on the underlying reasons.

3.2.4 Enforcement

Electronic monitoring (EM) and curfews [30] (Table 3) fell under this theme.

Deuchar (2012) [30] suggested that EM led to a self-perceived criminal labelling and hence additional social strains. The author concluded that EM and curfews, when used as a stand-alone measure, failed to help marginalized youths to build pro-social capital. The punitive nature of the measure may function as "a social strain conducive to crime" (P.125) leading to

anger and frustration and subsequently worsening family relationships. The findings of the study suggested that the positive effect of community-based sanctions, such as EM and curfews, were more likely to occur under a multi-agency approach, in combination with rehabilitation services.

3.2.5 Group intervention

Group violence interventions (GVI) reduce violence through sharing responsibility among group members. The consequence of individual offences would lead to entire group being held accountable. This strategy takes a multi-agency approach with the cooperation of law enforcement, local community and social service providers. The Call-in, a meeting between the involved group and the aforementioned agencies, is an important feature of GVI.

Williams et al. (2014)[31] evaluated CIRV with two specific benchmarks, which were the reduction of physical violence and possession of weapon. The quantitative data of the study suggested that the intervention significantly reduced knife carrying. It also demonstrated that there was a decrease in physical violence committed by gang-related youth after their engagement with CIRV.

GVI in London (Table 3) was deemed to be a failure. Densley (2016)[32] suggested that the implementation of GVI in London did not adhere to the core principles of the strategy. For example, there was a lack of focus in deterrence. Emphasis was placed on "personal transformation" (P.6) instead of group violence reduction. In addition, the hostile relationship between the police and the community disrupted the implementation of the intervention.

Discussion

This rapid review aimed to investigate the effectiveness of violence prevention programmes in the UK context. Interventions were further categorized based on their effectiveness and compared with programmes with similar approaches in other countries.

1. Potentially effective approaches

1.1 Group Interventions

Group based interventions have demonstrated their effectiveness in reducing group based crime in both UK and US studies [31][33]. Pioneered in Boston [34], they have been used in Massachusetts, Cincinnati [35] in the USA and in Glasgow [31] in the UK. In a meta-analysis based on 24 quasi-experimental evaluations of group interventions in US and UK, Braga (2018)[36] stated that there was an overall significant effect of these focussed deterrence strategies on crime reduction. Group based strategies were recommended to be added to the existing portfolio of prevention and control interventions.

The importance of other complementary mechanisms of the strategies on crime reduction should also be noted. Braga (2012)[33] suggested that the group intervention approach, involved multiple foci, such as increasing the legitimacy of police actions, increasing communities' ability to support offenders and deflecting youth from crime. Further research should be placed on isolating their impacts on crime reduction.

1.2 Diversionary interventions – IF

The findings of IF in the United States setting were consistent with those in the UK. IF was also found to be effective in reducing violent behaviour and rates of incarceration among youth with histories of chronic delinquency in US [37][38]. An RCT in Sweden has also shown that intensive fostering has lower breakdown rate compared to traditional treatment with significant improvement in participants' behaviour [39].

1.3 Diversionary interventions – EFL

The positive benefits of EFL were consistent with the findings in other countries. An RCT from the US [40] showed a significant increase in social competence of child participants after an 11-week EFL program. A systematic review by Kendall et al. (2015)[41] has also demonstrated the psychological benefits of EFL for at-risk youth, however, it was said that well-designed RCTs are greatly needed to further establish the efficacy of these interventions.

1.4 Risk factor interventions – CBT

A review of meta-analyses [42] showed that CBT is moderately effective at reducing anger and aggression. In the USA, Sukhodolsky et al. (2003)[43] have shown that adolescents may benefit more from this intervention than younger elementary school children. Their findings supported the qualitative results of the UK study by Down et al. (2011)[28], in which the authors suggested that participants aged 14 or above benefitted most from CBT. More research is required on interventions such as PD anger management to demonstrate its effectiveness.

1.5 Risk factor interventions – alcohol interventions

Links between underage drinking and violence were well established in literature [44][45]. Heavy alcohol use can lead to loss of self-control, ability to process information and an increase in impulsivity, which in turn makes drinkers more likely to be involved in violence. In contrary to Healey et al.'s (2014)[29] claim of lack of evidence on the effectiveness of brief interventions on youth, a RCT [46] has established the positive effects of a brief intervention on self-reported aggression and alcohol consequences. The efficacy of brief intervention for reducing peer violence and alcohol use was also established in a large scale one-year follow-up study by Cunningham (2012) [47]. Modifying drinking settings was another effective approach in reducing general alcohol-related violence [48][49][50].

2. Potentially ineffective approaches

2.1 Enforcement

Whilst a multi-agency or partnership approach has been recognized as effective [10], the effectiveness of the criminal-justice element was reviewed individually in different reports [51][52][53][54]. A Canadian study [51] showed that juvenile court interventions were unlikely to prevent reconviction and violent crimes .They suggested that the deterrent and rehabilitative effect of judicial contact may be limited, and cited reduced pro-social opportunities and stigmatisation. Similarly, juvenile awareness programmes, such as Scared Straight in the US, were found to be ineffective in deterring crime as a stand-alone strategy[55].

Specific measures such as curfew and electronic monitoring (EM) yielded mixed evidence but seemed to be ineffective as stand-alone measures. The US Department of Justice (2011)[54] has shown that EM significantly reduced recidivism. A systematic review by Grossman (2015)[53] suggested the broad impact of curfew on the reduction in criminality among young people, but pointed out that conclusions were limited by the number and quality of studies. Wilson et al. (2016)[56] suggested that curfew had no effect on youth criminal behaviour and victimization in the USA. Various studies [54][56][30], including those pointing to positive deterrent effects, pointed out the negative effect of curfew and EM on personal relationships and note that they led to anger, frustration and a feeling of stigmatization. Deuchar (2012)[30] recommended a multi-agency approach to increase the likelihood of positive outcomes. Wilson et al. (2016) and Grossman (2015) suggest more research is needed to explore the impact, as well as the corresponding mechanism of action of EM and curfew on the reduction in offending [53][56].

2.2 Family interventions

Family therapy is recognised internationally in prevention of youth violence and [57]. FFT and MST, included in this study, were said to be the two most well-known and widely implemented programmes [57].

While their effectiveness was demonstrated in the USA, it has not been replicated in a UK setting. A high quality meta-analysis done by Stouwe (2014) [58] demonstrated a significant effect on reduction of juvenile delinquency in USA. Research in both Sweden and UK could not find any difference between MST and normal treatment [59][60].

Similarly, FFT was found to significantly reduce violent crime and felony by 30% [61]. Yet, a null effect has been established in the European counterpart. The small scale RCT included in this review has shown that FFT has no added effect to management as usual (MAU) [21]. Various studies have attempted to explain this. Stouwe (2014)[58] pointed out that studies conducted in USA showed a significant moderating effect on the outcome of MST. Humayun (2017) [21] explained the lack of result of FFT + MAU with the superior effectiveness of MAU in England compared with US, as MAU in UK has already included help on multiple aspects such as education, employment, social skills and anger management. Similarly, heterogeneity in fidelity, quality of MAU and the rigor and transparency of trials were also said to be a possible mediator of the difference in effect of family therapies [62].

2.3 Risk factor interventions – short-term school-based intervention

In the evaluation of INCLUSIVE and LEIP, both studies showed no effect of the interventions in reducing youth violence. The findings were not consistent with studies conducted in the USA.

A meta-analysis demonstrated an effect of both universal and selected-format school programmes on aggressive behaviour [63]. The author also mentioned programmes that are more intensive were more effective, while modalities of interventions were not found to affect the reduction of aggressive behaviour. DuBois et al. (2011)[64] showed that school-based interventions involving mentoring had a small positive effect on youths' attitude, behaviour and academic performance. School-based secondary prevention programmes were also shown to be effective in violence prevention [65] in the USA.

Programme duration may be a possible explanation of the negative effect of LEIP, as LEIP was a short intervention that lasted 12 weeks only [27]. Grossman & Rhodes (2002) [66] have shown the moderating effect of programme duration on outcomes. It was reported that mentoring programmes of less than 3 months duration led to negative outcomes on the self-confidence of participants.

3. Approaches that require more evidence of effectiveness

While the above interventions would still benefit from further evidence support on effectiveness, there was a lack of high level review on the effectiveness of sports- and arts-based interventions and masculinity programmes on youth and gang violence.

3.1 Diversionary interventions – sports- and arts-based interventions

Sports interventions such as Positive Future [24] and Oracle Project [67] seemed to be prominent in the UK. The Australian government has done a multiple-case studies on SBI and suggested that SBI can indirectly influence ASB through positively impacting on personal and social development [68]. This was consistent with the findings of Parker et al. (2014)[26] in the UK. A systematic review has demonstrated the positive impact of SBI on psychological well-being but there was no mention about violence [69]. Another study by Harwood et al. (2017) [70] demonstrated the relationship between martial arts and aggression reduction in youth populations in the Netherlands. The authors however suggested the lack of research on this subject matter. Similar gaps were also suggested by UK Centre for Social Justice

(2011)[71], stating that sports projects even with best resources had difficulty in establishing robust evidence of effectiveness.

Similar lack of specific evidence was found in music therapy. A single-programme evaluation [72] showed improvement in self-esteem and reduced aggression on children with music therapy. However, the study was not randomized and unblinded and so may be prone to bias.

3.2 Risk factor interventions – masculinity programme

There was only theoretical support from other countries on preventing violence through reshaping concepts of masculinity. Deuchar et al. (2016)[73] suggested that a proper view on masculinity could fuel young men's desistance from crime, hence encouraging the construction of "what it means to be a man" at early stage with assistance from interventions. Carlsson (2013) [74] established the connection between masculinity, persistence and desistance from crime, while Honkatukia (2007)[75] described the important role of violence in construction of hegemonic masculinity in young boys. However, none of the studies include an actual intervention to address masculinity in adolescents. While Blagden & Perrin (2017)[17] have provided insight into the effectiveness of such programmes in UK, the small sample size of their study limits its broader generalisation.

Conclusion

The paper reported a rapid review of literature examining various types of interventions for youth and gang violence. The initial 386 papers yielded with pre-determined inclusion and exclusion criteria were reduced to 56 based on their relevance. 16 interventions were identified and grouped into 5 categories: family interventions, diversionary interventions, risk factor interventions, enforcement and group interventions. Evidence of the interventions were evaluated and compared under different country contexts. Group interventions, diversionary interventions (EFL, IF) and risk factor interventions (CBT, alcohol interventions) have shown potential effectiveness in UK and this was consistent in other countries. Enforcement was shown to be ineffective as a stand-alone measure to reduce youth and gang violence. While being effective in US, family interventions and short-term school-based interventions included in this review did not offer any evidence of effectiveness, which may be explained by the difference in country context or programme settings. More evidence of effectiveness was required to evaluate the sports and arts-based interventions and masculinity programme. The result of this review have summarized and informed the characteristics of an effective youth and gang violence intervention.

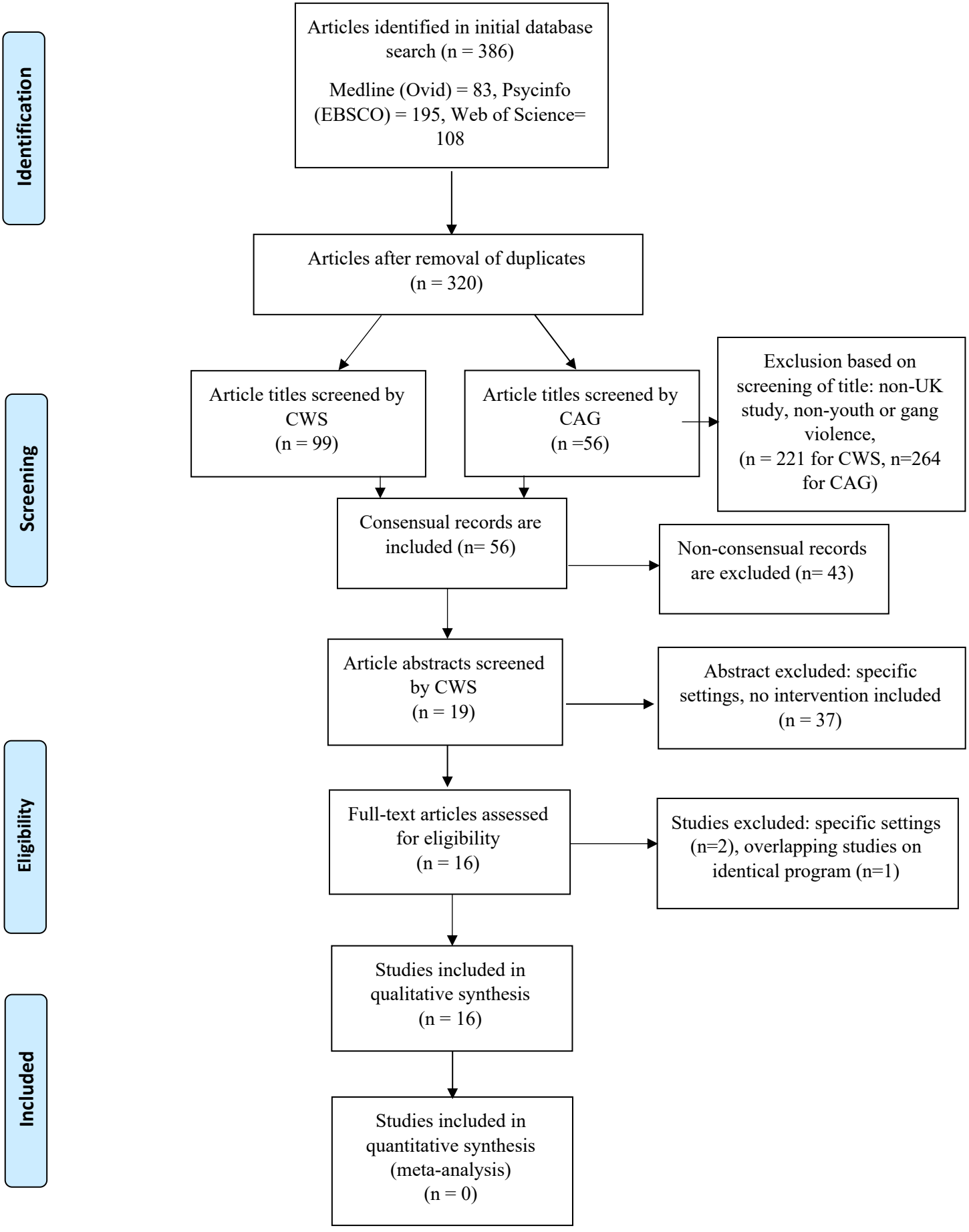


Figure 1. Study selection flow diagram.

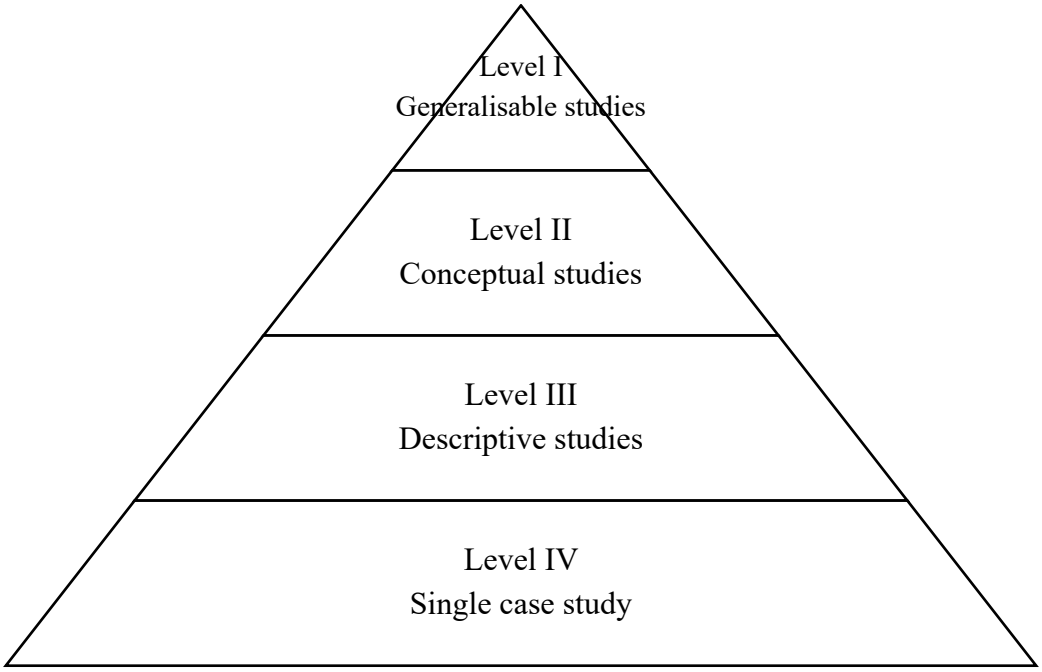
Figure 2:

A hierarchy of evidence. Adapted from 'Evidence-based Practice in Nursing and Healthcare: A Guide to Best Practice' (p. 12), by Melnyk & Fineout-Overholt, 2011. Copyright 2011 by Wolters Kluwer Health | Lippincott Williams & Wilkins.

Level I: Evidence from a systematic review or meta-analysis of all relevant RCTs
Level II: Evidence obtained from well-designed RCTs
Level III: Evidence obtained from well-designed controlled trials without randomization
Level IV: Evidence from well-designed case-control and cohort studies
Level V: Evidence from systematic reviews of descriptive and qualitative studies
Level VI: Evidence from single descriptive or qualitative studies
Level VII: Evidence from the opinion of authorities and/or reports of expert committees

Figure 3:

A hierarchy of evidence of qualitative study. Adapted from 'A hierarchy of evidence for assessing qualitative health research', by Daly et al., 2007, Journal of Clinical Epidemiology, p.45.



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