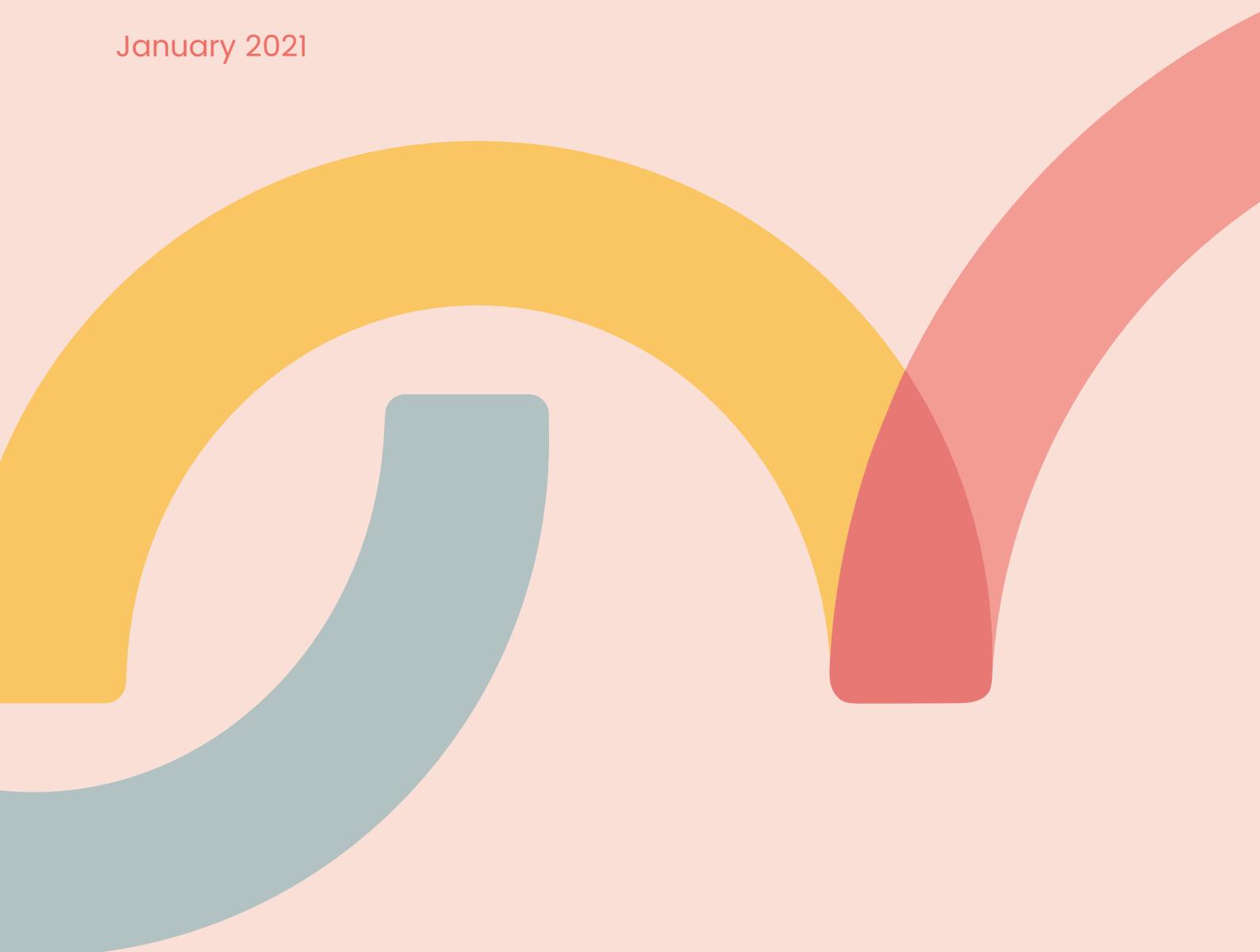


# **Evidence and Gap Map of Interventions to Prevent Children Getting Involved in Violence:**

Technical Report on the First Edition

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## 1. Key takeaways

- ◆ The Evidence and Gap Map (EGM) is a free online tool that collates and assesses evidence related to preventing youth violence. It organises this knowledge thematically, by intervention and outcome types, and enables users to see the quantity and strength of the evidence, and click through to the individual studies
- ◆ The EGM includes more than 2,000 studies, making it the largest map of studies on this topic in the world
- ◆ The EGM has identified that there is extensive evidence across several approaches to preventing children from getting involved in violence especially from:
  - Interventions to support positive behaviours (e.g. mental health and therapeutic interventions on mental health, internalising and self-regulation outcomes)
  - Interventions focused on parents/main carers (e.g. parenting training interventions on child's externalising and risk-taking behaviour)
- ◆ The EGM has identified that there is less evidence in some other areas:
  - Systems-based approaches to prevent violence involving children and young people (e.g. Public Health and Multi agency approaches)
  - Interventions targeted at reducing child exploitation (e.g. contextual safeguarding approaches)
  - Interventions targeted specifically at over-represented groups in the criminal justice system (for example, Black, Asian and minority ethnic children and young people or children with experience of the care system)
  - Studies that report offending specific outcomes (e.g. serious violent crime)
- ◆ There is a general need for more high quality UK-based impact evaluations
- ◆ The YEF will use this EGM strategically for two main purposes:
  - As the foundation for the YEF's forthcoming Toolkit, which will translate the evidence in to accessible and actionable summaries for practitioners and commissioners
  - To help focus the YEF's future grant-making on areas of promise and knowledge gaps: funding rigorous evaluations and reviews to improve the quality of UK evidence on youth violence.

## 2. Background

### The problem

When children become involved in violence, it is devastating to individuals, families and communities. Worryingly, the last few years have seen a significant increase in serious violence and the number of offences committed by children involving knives has risen. As violent crime has grown, so too has the number of children and young people being recorded as victims.

### The response

Children becoming involved in violence is not inevitable – it is preventable. As a society we have a duty to protect all children and young people from harm, especially those most at risk. Recognising this need, in October 2018 the then UK Home Secretary announced the creation of the Youth Endowment Fund (YEF). YEF has been provided with a ten-year investment of £200m to fight youth violence and offending, with a purpose to: *“prevent children and young people becoming involved in violence... by finding out what works and building a movement to put this knowledge into practice”*.

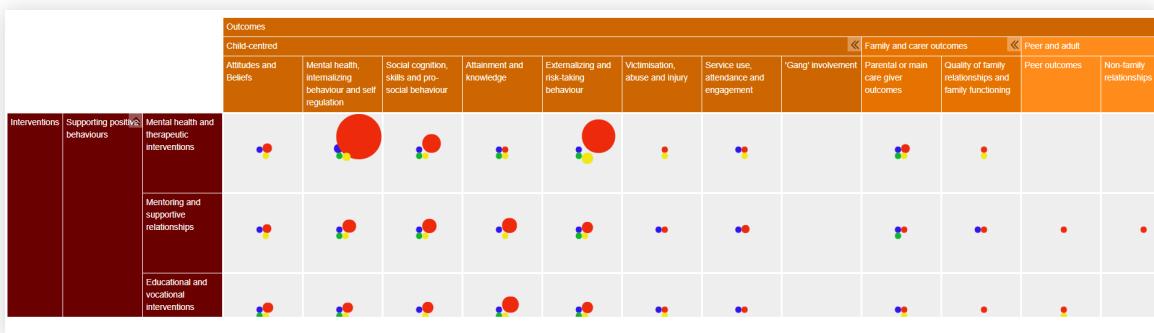
To effectively build this movement and understand what works, we need to start by assessing the current evidence base. This means being able to understand what kind of research has been done, on what topics, and the quality of the research conducted (i.e. how confident we can be in the findings). We also need to identify gaps in knowledge, so that researchers and commissioners (including the YEF) can begin to address them.

### 3. The YEF Evidence and Gap Map

#### The role and importance of an evidence and gap map (EGM)

Evidence and gap maps (EGMs) are a way of gathering, organising and assessing research, and presenting it in an interactive and accessible way. This helps us to (i) find existing evidence contained in studies; (ii) understand the strengths and weaknesses of the current evidence base; (iii) see where the gaps and areas of promise lie, and (iv) develop evidence tools based on the underlying studies. While an EGM does not directly tell us what the studies it maps say or mean, by bringing relevant studies together it plays an important role in helping us to find out what works. A snapshot of the YEF EGM can be viewed below in Snapshot 1.

#### Snapshot 1: Introducing the YEF EGM



#### Finding existing evidence

EGMs make existing evidence more easily accessible. They use an interactive map that allows users to find, sort and explore a wealth of evidence on a given topic. Historically, finding relevant evidence has been a difficult and technical exercise because there are so many different places to search, and sometimes different studies use different language to refer to the same concept. By bringing evidence together, organising it in an understandable way and enabling filtering and searching options, EGMS help users find relevant research more easily. This matters, because being able to find relevant research easily can ultimately help decision-makers make better choices, informed by the best available evidence on a topic.

#### Understanding the current evidence base

Studies contained in an EGM undergo a 'critical appraisal' to assess the quality of the research conducted. This allows us to see both how much evidence there is in any given area, and whether it is of high, medium or low quality.

While EGMS do contain a brief abstract-style summary of each mapped study, they do not discuss the studies in detail. The full text of each study is linked, but not contained directly in EGMS, for copyright reasons.

## Seeing where gaps and promise lie

EGMs help us to identify where there are important gaps in research and what types of new research might be most useful. EGMs point to outright gaps where there is no relevant evidence, where it might be most useful to conduct individual studies (primary studies). It also points to areas where there are lots of primary studies that could benefit from a summary piece of research (e.g. a systematic review). Organisations that commission research can therefore use EGMs to identify gaps in knowledge that they can usefully fill.

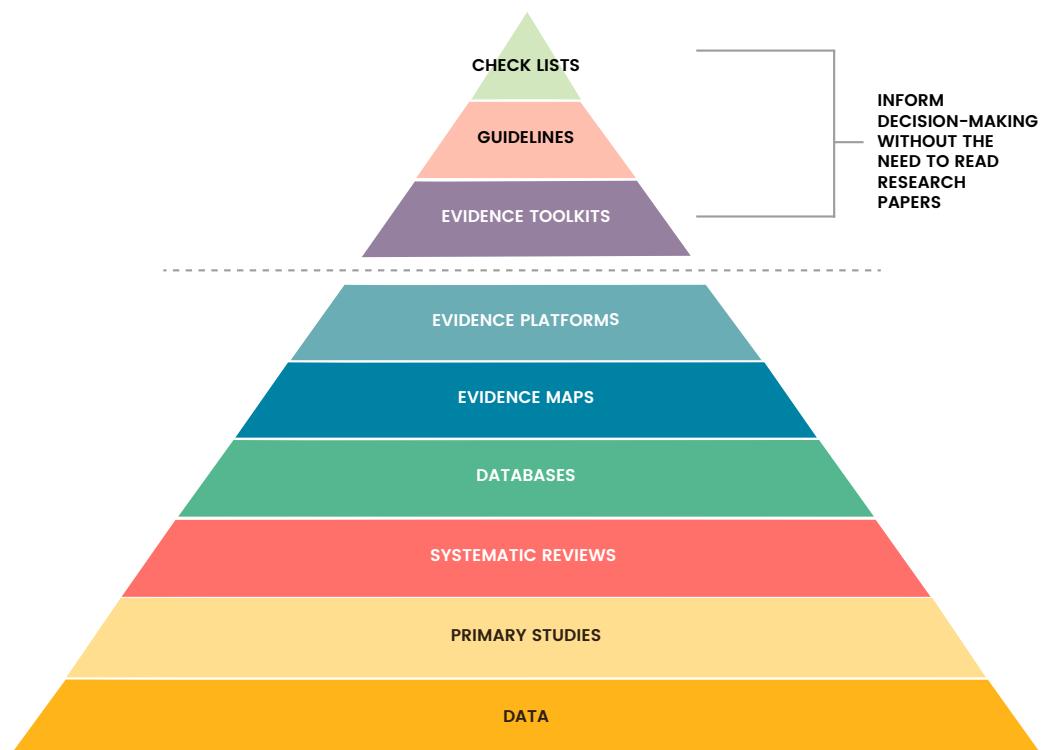
## Developing evidence tools

EGMs also show us where higher quality evidence already exists. This can support the development of resources like evidence ‘toolkits’, as illustrated in Figure 1. Toolkits provide accessible information to decision-makers on what works (drawing on data contained in primary studies, systematic reviews and databases).

By using the YEF EGM, we will be producing our own Toolkit so that our stakeholders can find out what interventions are the most likely to prevent children and young people becoming involved in violence, without having to read the full text of the underlying academic studies.

For a detailed commentary on toolkits and the use of evidence in decision-making please see [Annex 1](#). [The evidence revolution](#).

Figure 1: Where an evidence map fits with other types of evidence and products<sup>2,3</sup>



2 See glossary for a definition of each term

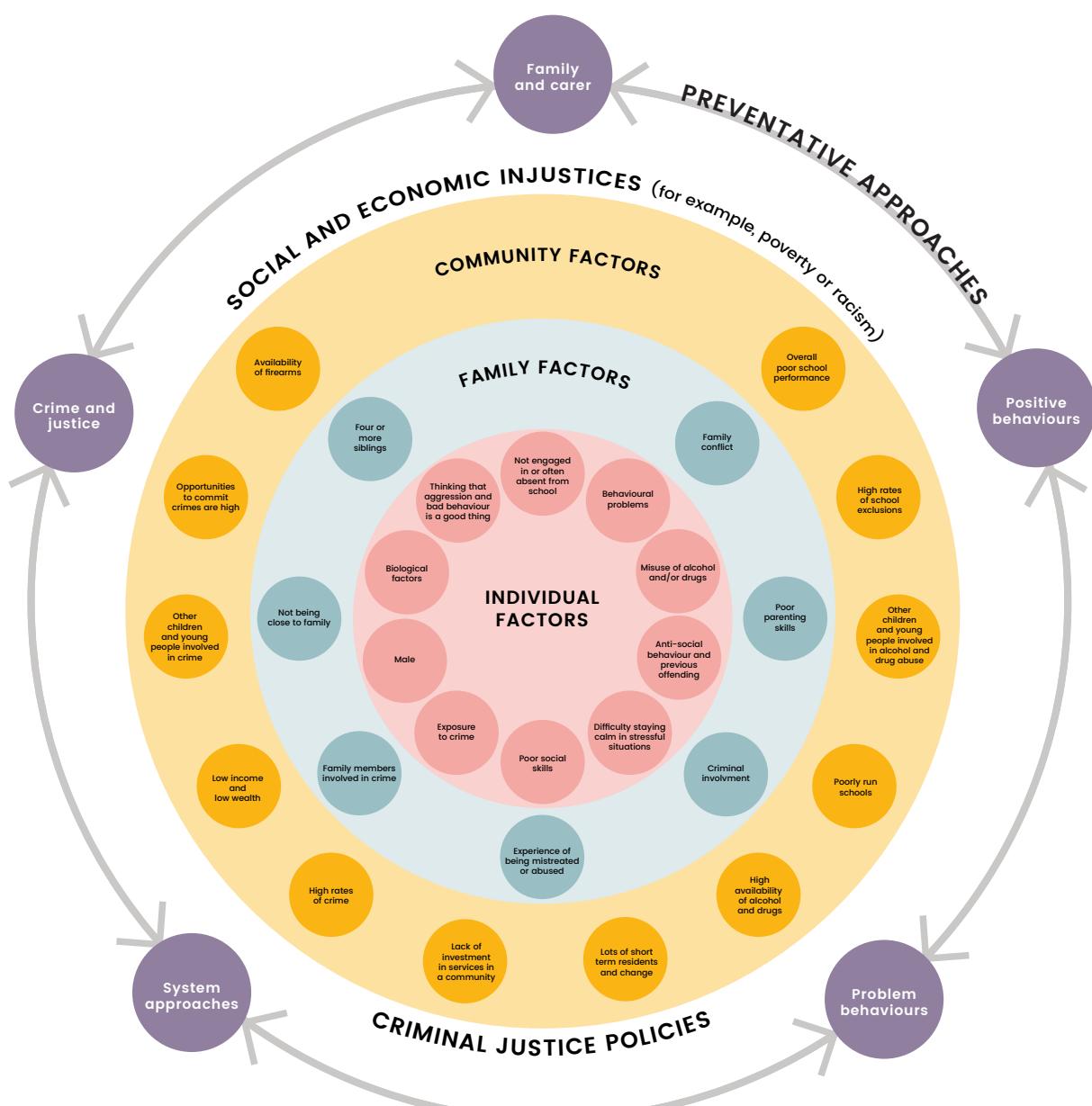
3 This pyramid illustrates how different types of evidence and ‘evidence products’ build on each other to be more distilled and ultimately inform decision-making in an increasingly more succinct way.

## Understanding the YEF EGM

The YEF EGM is organised to capture different interventions and outcomes that are relevant to preventing children from getting involved in violence. These include intermediate outcomes (e.g. attitudes to violence) and final outcomes (involvement in violent crime).

The categories and sub-categories of the EGM are based on the idea that a number of different risk factors can increase a child's chances of becoming involved in violence, and that these factors are present at a range of different levels (e.g. individual or community-level risk factors). Equally, there are a number of different preventative approaches that can also be categorised at different levels. Figure 2 is a graphic representing this interaction between different types of interventions and the risk factors they aim to influence, which ultimately reduces a child's chances of getting involved in violence.

Figure 2: General framework for reducing a child's chances of getting involved in violence



## Who is the YEF EGM for?

The EGM is primarily intended to help the YEF to understand the current evidence base. We will use it to identify gaps and areas of promise when we commission research, and it will support the development of our Toolkit.

It will also be of wider interest to researchers, policymakers and commissioners focused on prevention of youth violence and related topics. It was developed for a UK audience, though as the largest resource of its type available, it is likely to be useful to international audiences.

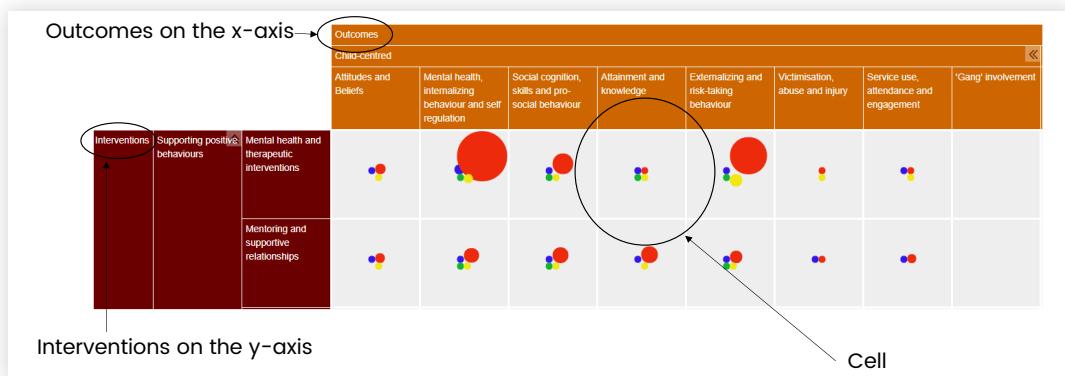
## How to use the EGM

The EGM is an interactive tool that allows users to search for specific studies in a number of different ways. The presentation of the EGM can also be changed according to the user's preferences.

At first glance the EGM looks like a table with outcomes on the x-axis (horizontally) and interventions on the y-axis (vertically).

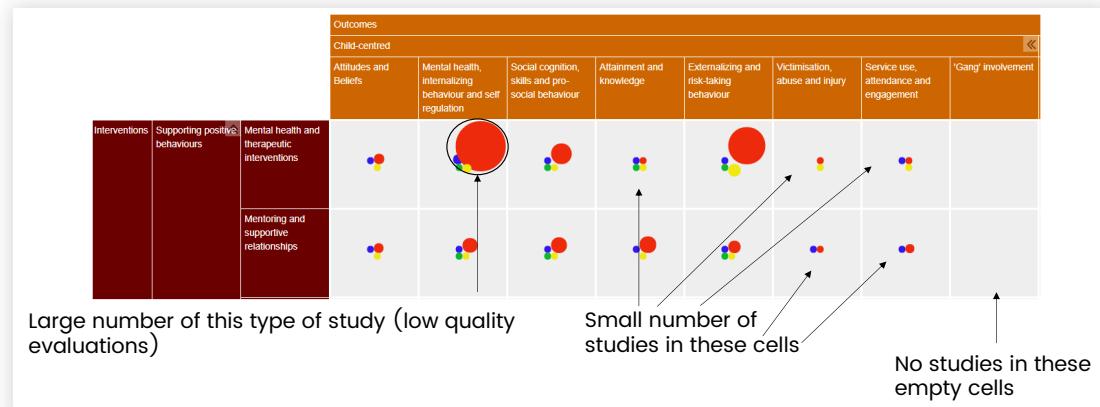
Each study is categorised under at least one outcome and intervention 'box' known as a 'cell'. These can be viewed below in Snapshot 2.

### Snapshot 2: EGM axis labels and cells



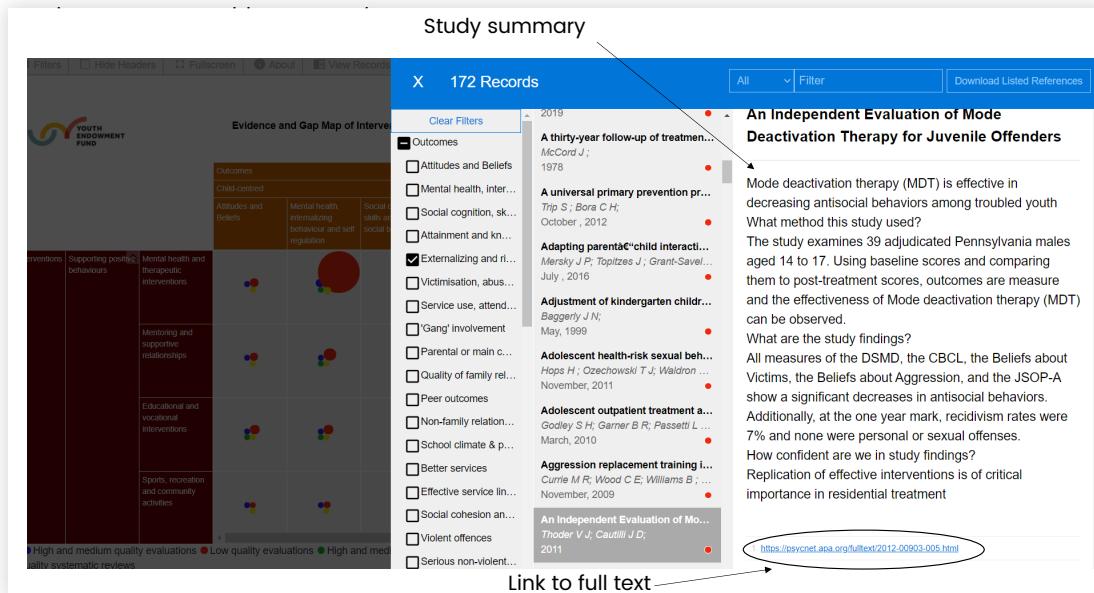
The default EGM view is known as a 'bubble map' where the size of the circle in each cell represents how many studies have been found. For example, an empty box means there are no studies looking at a particular type of intervention and outcome combination. A small circle means there might be a few studies, while large circles mean there are many studies. This can be seen in Snapshot 3.

### Snapshot 3: How to interpret bubbles in the cells



When a 'bubble' is clicked on, a text box appears, which lists the individual studies included about that particular type of intervention and outcome combination. In the text box there is a brief description of each study (similar to, but not identical to the abstract) and a link which takes the user to the website containing the full study. This can be seen in Snapshot 4.

#### Snapshot 4: What happens when you click on a bubble



#### Quality/study design coding presentation

Each study included in the EGM is also critically assessed to provide an indication of the quality of the study. This helps us get a sense of how confident we can be in the study's findings. Studies were all rated against specified criteria using a quality assessment tool. For more information about this tool and criteria please see the 'Data extraction and coding' subsection below and Annex 2 Critical Appraisal Tool.

In the EGM, high and medium quality studies are presented together, while low quality studies are presented separately. High and medium quality studies are combined for technical reasons.

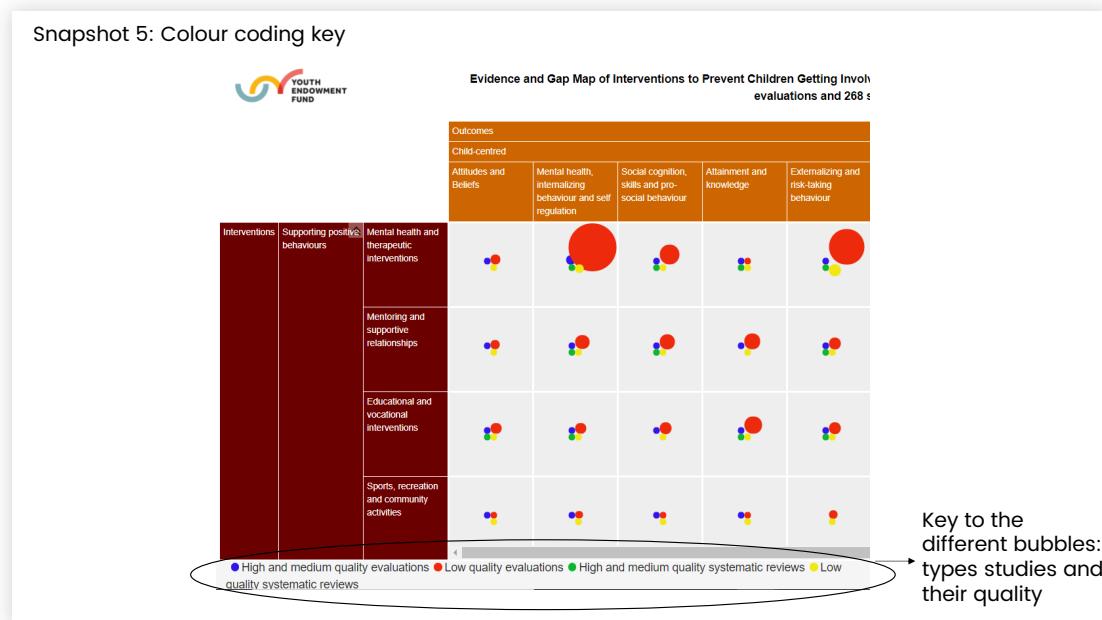
Different types of studies are also colour-coded separately. Impact and process evaluations are grouped together in the default EGM view, while systematic reviews are presented separately (for definitions please see Glossary or Study Design sections below). Again, impact and process evaluations are combined for technical reasons. Systematic reviews are deliberately presented separately so that EGM users can find them more easily.

The following colour-coding is used in the EGM and can also be seen in Snapshot 5:

- ◆ *High and medium quality evaluations (Blue)*: These are studies about an intervention (i.e. a programme or activity) including both impact and process evaluations. High quality evaluations are those that meet certain criteria (e.g., for impact evaluations the use of comparison groups and validated measures); medium quality evaluations partially meet the criteria.
- ◆ *Low quality evaluations (Red)*: Studies that are rated as low on at least one criterion included in the quality assessment tool. One common reason that an evaluation might score as 'low' is because the description of the study is not clear. For impact evaluations, a low rating is used when a comparison group is absent.

- ♦ *High and medium quality systematic reviews (Green)*: High quality reviews met all the criteria to a high standard<sup>4</sup>, while medium quality reviews generally met the criteria but less well.
- ♦ *Low quality systematic reviews (Yellow)*: These reviews typically contain critical flaws. Common flaws include failing to account for risk of bias in primary studies or not using satisfactory techniques for assessing risk of bias.

### Snapshot 5: Colour-coding key



Additional details on the features of the EGM and how to use them can be found in Annex 3 Details about how to use the EGM and features available.

<sup>4</sup> Systematic reviews are critically assessed using the A Measurement Tool to Assess Systematic Reviews 2 (AMSTAR-2).

## 4. How the EGM was created

### Overview

The YEF EGM was developed in partnership with The Campbell Collaboration through a number of steps, which we describe in detail below under the relevant sub-heading. In summary, the steps included:

1. *Development of the EGM's specification:* This section describes how we decided to name the row and column headings in the EGM (which included categorising different interventions and outcomes to create an EGM typology) and what types of studies should be included or excluded
2. *Searches for relevant studies:* This section outlines where we looked for studies
3. *Data extraction, coding and management:* This section describes how studies were added to the EGM
4. *Quality assurance:* This section describes how we checked and tested the EGM.

At each step of development we consulted various stakeholders to gather their views and adapted our plans for the EGM accordingly. We consulted stakeholders most extensively during the development of the specification of the EGM, to help shape the EGM typology and our inclusion and exclusion criteria (see [Annex 4 Developing the categories and subcategories of the EGM](#)).

We consulted a wide range of stakeholders, including representatives from various local authority departments, Violence Reduction Units, Police and Crime Commissioners, education, central government, the voluntary and community sector, police and the justice system, as well as a wide range of academics and subject specialists. Consultation methods ranged from workshops, to in-depth interviews and requests for comments through email. The box below provides a brief explanation for some of the terminology used in the EGM.

### Terminology

Some of the language used in the EGM reflects dated terminology used in the underlying literature. Terms such as 'delinquent' behaviour are widely used, particularly in older studies, to describe behaviour associated with offending. Although the YEF does not endorse these terms, they are included in the EGM to reflect the existing literature and to help people to find relevant studies more reliably.

### Step 1: Development of the EGM's specification

The first step when we created the EGM was to decide what sort of evidence it should include, and in what areas. We did this by specifying what the EGM will include across five key areas: Population, Intervention type, Comparison, Outcome and Study design (PICOS, defined on the next page)<sup>5</sup>, and then outlining criteria for the inclusion or exclusion of studies.

<sup>5</sup> PICOS is a widely used framework for ensuring that studies are clear. It is recommended by guidelines such as The Cochrane Handbook for Systematic Reviews of Interventions, Version 5.1.0., The Cochrane Collaboration, 2013.

## PICOS

- ◆ **Population:** who is receiving the intervention
- ◆ **Intervention type:** what kind of programme/activity/approach is being implemented
- ◆ **Comparison:** if there is a comparison group who did not receive the intervention
- ◆ **Outcome:** what changes in the population are being measured
- ◆ **Study design:** the kind of research taking place (as described in the inclusion/exclusion criteria).

## Population

While YEF's focus is on children aged 10 – 14, this EGM is not restricted to interventions aimed at that age range. That's because we recognise earlier interventions are associated with preventing later involvement in crime. The EGM also includes studies of interventions for children up to age 17, because these may include interventions suitable for 10–14 year olds, but where studies have, to date, only been conducted with older age groups.

The populations featured in studies included in the EGM are therefore:

- ◆ Children aged 0-17
- ◆ Their parents, carers and other family members of children aged 0-17
- ◆ Professionals involved in delivering support and services to children aged 0-17.

Various sub-populations are also identified in the EGM to help us explore and interpret it. These are discussed in Section 5 (What the EGM contains).

## Intervention

An intervention is an activity, approach or programme aimed at achieving a desired change in an individual or group. Intervention categories form the y-axis of the EGM. The intervention categories, their respective sub-categories and example programmes are given in Table 1. A brief description of each intervention sub-category is given in Annex 5 Interventions, outcomes and process insights definition and the development history of each category is outlined in Annex 4 Development of the categories and sub-categories of the EGM.

Table 1: Intervention categories, sub-categories and examples

| INTERVENTION CATEGORY                            | INTERVENTION SUB-CATEGORY   |
|--|---|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b>            | Mental health and therapeutic interventions (e.g. counselling)<br>Mentoring and supportive relationships (e.g. Big Brothers, Big Sisters)<br>Educational and vocational interventions (e.g. tutoring)<br>Sports, recreation and community activities (e.g. sports clubs)<br>Social and emotional interventions (e.g. social and emotional learning (SEL) programmes)<br>Practical life skills (e.g. lessons in managing finances) |
| <b>ADDRESSING PROBLEM BEHAVIOURS<sup>6</sup></b> | 'Gang' and criminal network interventions (e.g. the Growing Against Gangs and Violence programme)<br>Child exploitation and contextual safeguarding (e.g. contextual safeguarding interventions)<br>Alcohol and drug interventions (e.g. brief alcohol treatment)<br>Anti-bullying interventions (e.g. the All Stars Prevention Programme)<br>Direct violence prevention (e.g. dating violence programmes)                        |
| <b>FAMILY AND CARER INTERVENTIONS</b>            | Parents/main care giver(s) focused (e.g. parental education programmes)<br>Family members focused (e.g. whole family programmes)  |
| <b>SYSTEM APPROACHES</b>                         | Schools and service coordination and improvements (e.g. mental health services in school)<br>Public health and multi-agency working approaches (e.g. information sharing approaches)  |
| <b>CRIME AND JUSTICE</b>                         | Justice system interventions (e.g. diversion programmes)<br>Opportunity-based crime prevention (e.g. environmental interventions such as increased street lighting)   |

## Comparison

The YEF EGM contains studies that have a comparison group (e.g. comparing those that have received a programme to those that have not), as well as those without a comparison group (e.g. studies that measure changes before and after an intervention).

## Outcomes

The x-axis of the EGM categorises studies by their outcomes. The EGM includes studies examining the impact of interventions (e.g. what impact the intervention has on individuals or systems – known as impact evaluations). Studies reporting the impact of an intervention are categorised by the type of impact they have (e.g. on attitudes and beliefs), and at which level (e.g. child or family and carer). The categories and sub-categories can be found in Table 2 on the next page.

<sup>6</sup> It is important to note that for our purpose 'problem behaviour' does not always refer directly to the behaviour of a child. It also captures the 'problem behaviour' of adults associated with children (for example, child exploitation)

Definitions of each sub-categories are available in Annex 5 Intervention, outcomes and process insights definitions, and a detailed development history of each of the categories and sub-categories can be found in Annex 4 Developing the categories and sub-categories of the EGM.

Table 2: Outcome domains and sub-domains

| OUTCOME DOMAIN                             | OUTCOME SUB-DOMAIN   |
|--|--|
| <b>CHILD-CENTRED</b>                       | Attitudes and Beliefs (e.g. beliefs about violence)<br>Mental health, internalising behaviour and self-regulation (e.g. mood ratings)<br>Social cognition, skills and pro-social behaviour (e.g. helpful behaviour)<br>Attainment and knowledge (e.g. school grades)<br>Externalising and risk-taking behaviour (e.g. fighting)<br>Victimisation, abuse and injury (e.g. experiencing bullying)<br>Service use, attendance and engagement (e.g. school attendance) |
| <b>FAMILY AND CARER OUTCOMES</b>           | Parental or main care giver outcomes (e.g. parental stress levels)<br>Quality of family relationships and family functioning (e.g. measures of bonding)  |
| <b>PEER AND ADULT</b>                      | Peer outcomes (e.g. peer beliefs)<br>Non-family relationships (e.g. adult mentor bonding)  |
| <b>SCHOOL, PROFESSIONALS AND COMMUNITY</b> | School climate & performance (e.g. measures of feeling safe at school)<br>Better services (e.g. improved service rating)<br>Effective service linkage (e.g. increasing number of referrals between services)<br>Social cohesion and neighbourhood perceptions (e.g. measures of feeling safe in the neighbourhood)   |
| <b>OFFENDING AND CRIME</b>                 | Violent offences (e.g. charges of assault)<br>Serious non-violent offences (e.g. drug offences)<br>Other offences (e.g. unspecified offences)<br>Anti-social and 'delinquent' behaviour (e.g. obtaining an Anti-Social Behaviour Order (ASBO))<br>Contact with custody services or justice system (e.g. number of arrests)   |
| <b>PROCESS INSIGHTS</b>                    | Intervention details (e.g. what activities are involved)<br>Theory of change (e.g. how an intervention works theoretically)<br>Implementation (e.g. potential barriers to running an intervention)<br>Cost (e.g. cost of an intervention per participant)  |

Additionally, the EGM provides insights about *how* interventions work both theoretically (i.e. their theory of change) and practically (design, cost, implementation). These are known as process insights and can be found either in studies examining the impact of interventions, or more commonly, in descriptive studies of interventions conducted without an analysis of impact (in both cases they may be known as process evaluations). Studies containing process insights are categorised under the relevant heading and users are directed to the page numbers in the study where the relevant content appears (e.g. for studies featuring a cost analysis, the study is also coded under 'cost' and users are directed to the relevant page number that describes the costs in the study summary).

Studies that only contain qualitative descriptions will only be categorised under the type of intervention featured and the type of process insights they report on (i.e. theory of change, design, cost, implementation). A full description of the different categories can be found in Annex 5 Intervention outcomes and process insight definitions.<sup>7</sup>

## Study design

The EGM includes impact studies, systematic reviews and process evaluations. A description of each of these types of studies can be found below:

- ♦ *Impact evaluations*: These studies examine how effective an intervention is (i.e. how well it achieves its intended outcomes). This is done by measuring an outcome of interest, (e.g. a reduction in violence, ideally in relation to a comparison group that did not receive the intervention). Higher quality designs typically involve randomly allocating participants to an intervention or a comparison group (Randomised Controlled Trials, RCTs), or creating statistically similar comparison groups (Quasi Experimental Designs, QEDs). In both cases, the aim is to try and understand what impact the intervention had relative to what would have happened otherwise. In addition to RCTs and QEDs, the EGM also includes 'pre/post' studies, which look at a group's change in outcomes before and after an intervention, but without a comparison group. These types of studies are less rigorous. However, they do provide information on the extent of evaluation in different intervention areas, showing where more rigorous studies could be beneficial.
- ♦ *Process evaluations*: These studies examine how interventions work both theoretically (e.g. theory of change) and practically (design, cost, implementation issues). Such insights can be found either alongside studies examining the impact of interventions, or more commonly, in descriptive studies of interventions conducted without an analysis of the intervention's impact.
- ♦ *Systematic reviews*: These studies find, collate and evaluate the results of relevant research in response to a pre-defined question (typically assessing the effect of an intervention).<sup>8</sup> Some of the systematic reviews also include meta-analyses, which calculate an average estimate of the effect of the intervention(s) on outcomes of interest.

## Inclusion and exclusion for all study types

We use a PICOS to decide what sorts of studies we are interested in. To help ensure we only include relevant studies in the EGM, we also use a brief set of inclusion and exclusion criteria to help filter out studies that are not associated with our core outcomes or cohort (i.e. young people), where there are additional quality concerns, or where we cannot practically include them in the EGM at this stage.

<sup>7</sup> To note, no development history is available for process insights as they were selected by YEF and Campbell. Only one subcategory had a minor change of label.

<sup>8</sup> See here for additional information: <https://campbellcollaboration.org/what-is-a-systematic-review.html>

To be eligible for inclusion in the EGM all studies must be:

- ◆ A study of an intervention intended to modify the behaviour (e.g. anti-social behaviour) or attitudes of children up to the age of 17<sup>9</sup>, either directly (interventions for children themselves) or indirectly (e.g. interventions for their parents/caregivers or family members, or the professionals they interact with)
- ◆ In English
- ◆ Conducted at any time and in any country (filters can be used to narrow these criteria in the EGM)
- ◆ Both ongoing and completed studies are captured (status of studies is included as a filter).

### **Additional criteria for impact evaluations and systematic reviews**

Impact evaluations and systematic reviews are included in the EGM if they also meet the following criteria. They must:

- ◆ Be a quantitative evaluation reporting on relevant, youth crime-related outcomes (with or without a comparison group) or a systematic review of such studies
- ◆ Look at outcomes that include measures of attitudes, beliefs or behaviour of children, professionals or parents

For systematic reviews they must also have<sup>10</sup>:

- ◆ a clearly stated PICOS
- ◆ a comprehensive search strategy
- ◆ explicit inclusion and exclusion criteria for screening
- ◆ systematic coding and reporting of all outcomes covered by the PICOS.

### **What studies are excluded?**

Studies are excluded if they are universal interventions not directly affecting outcomes related to disruptive and anti-social behaviour of children aged up to 17 years. For example, studies of the effects after school programmes on physical activity and obesity are not included, whereas studies of the effects of such programmes on anti-social behaviour are included. Similarly, studies of the effects of universal social and emotional learning interventions on academic achievement are not included, but such studies are included if the programme is targeted to children at risk of problem behaviour or if the programme is universal and reports these behavioural outcomes.

In addition, many place-based interventions (i.e. interventions focused on a geographic location rather than a group of people, such as street lighting or alley-gating), are not included in the EGM. We have only included place-based interventions that satisfy our population requirements (i.e. interventions that target mainly children aged 0-17). We estimate this could have excluded in the region of 1,000 place-based studies. For details about the kind of interventions the EGM has not included please see [Annex 6](#) Types of studies which the EGM may not have captured. For the full screening tool please see [Annex 7](#) Screening Tool. We may revisit these criteria in future updates to the EGM.

9 The age of the child is recorded at the time the intervention took place, not when the intended outcome of the intervention was measured

10 This additional criteria was added to ensure that included reviews are truly systematic in nature. Therefore, it would exclude reviews labeled 'systematic reviews' if they did not meet above criteria. Conversely even if a review was not labeled a 'systemic review', it would be included if it met the above criteria.

## Step 2: Searches for relevant studies

Studies can be found in lots of different places including scientific databases, journals and websites. The scientific databases that were searched included the following: Medline, Embase, PsycInfo, ERIC (education), Scopus, SSCI, Social Policy & Practice, Public Affairs Information Service, and National Criminal Justice Reference Service, Ebsco Discovery, Criminal Justice Abstracts and the Global Policing Database. Sample search strings are given in [Annex 8 Sample Search Strings](#).

In addition to a traditional, manual database search we conducted a machine-learning assisted search. The results from the two approaches to database searching were combined and de-duplicated.

Websites and journals were also searched. Details of these searches can be found in [Annex 9 Details of additional searches](#).

Reference lists contained in reviews were also screened for inclusion in the EGM<sup>11</sup>. Furthermore, selected literature reviews that were not themselves included the EGM (e.g. did not contain an intervention) were also searched for relevant studies.

## Step 3: Data extraction and coding

Once relevant studies were found, the next step was to include them in the EGM and draw out the key information from the studies. This process is known as data extraction and coding. The following information was coded:

- ◆ the type of intervention in the study
- ◆ the types of outcomes in the study (including process insights)
- ◆ the quality of the studies included
- ◆ the information featured in the EGM's filters (e.g. target group of interventions).

For more information about data extraction and coding please see the coding form in [Annex 10 Coding form](#).

## Study quality review (critical appraisal)

In order to code the quality of different studies, each study was assessed using a critical appraisal tool. For primary studies, the critical appraisal tool was constructed to cover both quantitative and qualitative designs. It is included in [Annex 2 Critical Appraisal Tool](#), along with a description of how the tool was developed.

The quality of the included systematic reviews was assessed using a gold standard industry tool: A Measurement Tool to Assess Systematic Reviews 2 (AMSTAR-2). Studies were rated as having high, medium or low quality (the latter including those rated as critically low by the AMSTAR approach).<sup>12</sup>

<sup>11</sup> This does not apply to the most recent reviews

<sup>12</sup> For more information about the AMSTAR 2 please see <https://amstar.ca/Amstar-2.php> or <https://www.bmjjournals.org/content/358/bmj.j4008>

## Step 4: Quality assurance

The final step in the process was to ensure the EGM was completed to a high standard and that users found it as useful as possible. All studies were coded independently by two coders, with a third-party arbitrator in the event of disagreement. Additionally, members of the YEF team also independently coded a subset of studies. This was done as an additional layer of quality assurance to the coding process.

To check that the EGM is as useful as possible we sent early versions of it to various stakeholders to test and provide feedback. We also conducted internal tests with various YEF teams to find out how they plan to use the EGM and what would be most useful for them. We then made adaptions based on the feedback we received, though it was not always possible to act upon suggestions due to technical limitations.

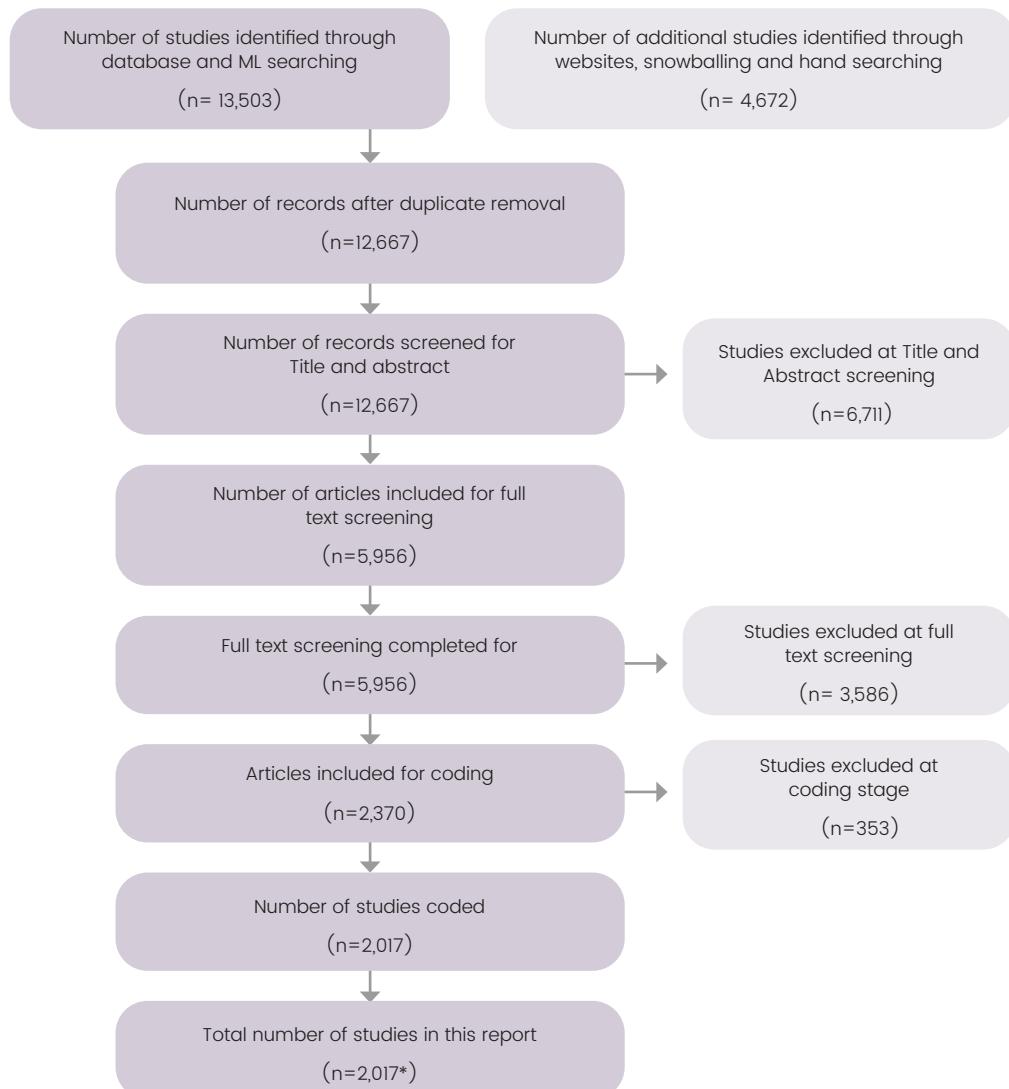
## 5. What the EGM contains

### Number of included studies

The full database searches and machine learning combined retrieved 13,503 studies, and an additional 4,672 studies were identified through website search and grey literature (e.g. programme websites, smaller research databases or government reports). No studies were removed at the de-duplication stage, therefore a total of 18,175 studies remained. These were screened for title and abstract and 5,956 were included for full text screening. 3,586 studies were excluded at full text screening. The remaining 2,370 studies were coded, and an additional 353 studies were excluded after careful validation checks.

See Figure 3 below for an overview of this process. This report is based on findings with respect to the remaining 2,017 studies.

Figure 3: Preferred Reporting Items for Systematic Reviews (PRISMA<sup>13</sup>) flow chart<sup>14</sup>



<sup>13</sup> PRISMA is a 27-item checklist, which includes items that are essential for transparent reporting of a systematic review.

<sup>14</sup> The flow diagram shows the flow of information through the different phases of a systematic review. It maps out the number of records identified, included and excluded, and the reasons for exclusions.

## Interventions and outcomes: an overview

Table 3 below is a summary table which provides an aggregated view of all the studies included in the EGM. The Table shows the number of studies in each broad intervention and outcome category, but individual sub-categories are not shown. All tables and figures are based on coding of the studies screened for inclusion.

The intervention types and outcomes are colour-coded across three categories. Where there are over 200 studies relating to an intervention type and outcome, the area is defined as 'extensively evidenced' and is coded green. Where there are over 100 studies but less than 200, the area is defined as 'moderately evidenced' and is coded yellow. Finally, where there are fewer than 100 studies, the area is defined as 'limited evidenced' and is coded red. These definitions are not an indication of the quality of the studies themselves, rather the number of studies that exist in the area.

The most extensively evidenced areas are interventions supporting better behaviours, addressing problem behaviours and family interventions, with evidence related to child-centred outcomes particularly prevalent. Family and carer outcomes are extensively evidenced with family and carer interventions. Systems approaches and crime and justice approaches are the least evidenced.

Table 3: Aggregated view of all studies in the EGM, by intervention type and outcome<sup>15</sup>

|                                | CHILD-CENTRED OUTCOMES | FAMILY AND CARER OUTCOMES | PEER AND ADULT OUTCOMES | SCHOOL, PROFESSIONALS AND COMMUNITY OUTCOMES | OFFENDING AND CRIME-RELATED OUTCOMES | TOTAL       | % OF STUDIES |
|--------------------------------|------------------------|---------------------------|-------------------------|--|--------------------------------------|-------------|--------------|
| SUPPORTING POSITIVE BEHAVIOURS | 773                    | 115                       | 36                      | 116  | 226                                  | 917         | 45%          |
| ADDRESSING PROBLEM BEHAVIOURS  | 510                    | 46                        | 36                      | 120  | 162                                  | 605         | 30%          |
| FAMILY AND CARER INTERVENTION  | 358                    | 306                       | 15                      | 42   | 144                                  | 519         | 26%          |
| SYSTEM APPROACHES              | 102                    | 13                        | 9                       | 87   | 37                                   | 166         | 8%           |
| CRIME AND JUSTICE              | 40                     | 5                         | 3                       | 9  | 127                                  | 147         | 7%           |
| <b>TOTAL</b>                   | <b>1510</b>            | <b>375</b>                | <b>88</b>               | <b>308</b>                                   | <b>566</b>                           | <b>2017</b> | <b>100%</b>  |
| <b>% OF STUDIES</b>            | <b>75%</b>             | <b>19%</b>                | <b>4%</b>               | <b>15%</b>                                   | <b>28%</b>                           | <b>100%</b> | <b>100%</b>  |

Child-centred outcomes make up two-thirds of the studies in the EGM, and the evidence is mainly focused on preventative (primary or secondary) approaches, as shown in Table 4 on the next page.

<sup>15</sup> Rows and column totals do not sum to cell contents as a single study may be coded for multiple interventions and outcomes.

Table 4: Primary, second, tertiary: Public health classification of interventions being studied<sup>16</sup>

| POINT OF INTERVENTION | DESCRIPTION   | NUMBER OF STUDIES | % OF STUDIES |
|-----------------------|---|-------------------|--------------|
| <b>PRIMARY</b>        | Preventive measures which are universally delivered                               | 970               | 48%          |
| <b>SECONDARY</b>      | Interventions for children (or parents of children) at risk of problem behaviours | 540               | 27%          |
| <b>TERTIARY</b>       | Interventions for children (or parents of children) with problem behaviours       | 454               | 22%          |
| <b>MULTIPLE</b>       | Any combination of the above  | 77                | 4%           |

## Country and study design

Table 5 shows study designs by country. A study may contain both an impact evaluation and a process evaluation – or less commonly different types of impact evaluation – and so appear in more than one place in the table.

Over half of all studies come from the USA, with the UK being the next most represented country. With 330 studies, UK-based research accounts for around 16% of studies in the EGM.

<sup>16</sup> Number of studies do not sum to the total number of studies as a single study may be coded for more than one point of interventions.

Table 5: Study design by country or region<sup>17</sup>

|                     | RANDOMISED CONTROL TRIAL | MATCHED COMPARISON | INTERRUPTED TIME SERIES | IV/OTHER REGRESSION | PRE /POST | SYSTEMATIC REVIEW/ MTA-ANALYSIS | PROCESS EVALUATION | TOTAL |
|---------------------|--------------------------|--------------------|-------------------------|---------------------|-----------|---------------------------------|--------------------|-------|
| <b>AUSTRALIA</b>    | 38                       | 10                 | 0                       | 5                   | 13        | 65                              | 20                 | 141   |
| <b>CANADA</b>       | 25                       | 18                 | 2                       | 3                   | 8         | 68                              | 9                  | 128   |
| <b>CHINA</b>        | 11                       | 1                  | 1                       | 0                   | 2         | 16                              | 0                  | 31    |
| <b>FINLAND</b>      | 14                       | 1                  | 0                       | 0                   | 1         | 22                              | 1                  | 38    |
| <b>GERMANY</b>      | 17                       | 0                  | 1                       | 0                   | 3         | 18                              | 0                  | 39    |
| <b>HONG KONG</b>    | 14                       | 2                  | 0                       | 0                   | 3         | 5                               | 0                  | 24    |
| <b>INDIA</b>        | 1                        | 2                  | 0                       | 0                   | 1         | 1                               | 0                  | 5     |
| <b>INDONESIA</b>    | 4                        | 1                  | 0                       | 0                   | 0         | 0                               | 0                  | 5     |
| <b>IRELAND</b>      | 1                        | 1                  | 0                       | 0                   | 1         | 9                               | 1                  | 13    |
| <b>ITALY</b>        | 5                        | 3                  | 0                       | 0                   | 2         | 20                              | 0                  | 30    |
| <b>MEXICO</b>       | 2                        | 3                  | 0                       | 0                   | 1         | 3                               | 0                  | 9     |
| <b>NETHER-LANDS</b> | 40                       | 11                 | 0                       | 2                   | 2         | 29                              | 3                  | 87    |
| <b>NEW ZEALAND</b>  | 4                        | 2                  | 0                       | 1                   | 7         | 11                              | 12                 | 30    |
| <b>NIGERIA</b>      | 1                        | 2                  | 0                       | 1                   | 1         | 0                               | 0                  | 5     |
| <b>NORWAY</b>       | 7                        | 0                  | 0                       | 0                   | 1         | 24                              | 1                  | 33    |
| <b>SOUTH AFRICA</b> | 6                        | 0                  | 0                       | 0                   | 1         | 6                               | 1                  | 14    |
| <b>SWEDEN</b>       | 6                        | 6                  | 0                       | 0                   | 2         | 17                              | 3                  | 33    |
| <b>TURKEY</b>       | 3                        | 5                  | 0                       | 0                   | 1         | 8                               | 0                  | 17    |
| <b>UK</b>           | 61                       | 35                 | 12                      | 4                   | 51        | 70                              | 149                | 330   |
| <b>USA</b>          | 559                      | 228                | 17                      | 34                  | 121       | 241                             | 99                 | 1250  |
| <b>OTHERS</b>       | 85                       | 38                 | 2                       | 5                   | 10        | 35                              | 11                 | 182   |
| <b>TOTAL</b>        | 886                      | 366                | 35                      | 55                  | 229       | 268                             | 302                | 2017  |

As shown in Table 5, three quarters of the included impact evaluations are Randomised Control Trials (RCTs). This finding is related to the high proportion of studies from the USA in the EGM, where there is a much stronger tradition of RCTs of social programmes. Just under a quarter of primary studies from the UK are RCTs compared to over half of those from the USA.

<sup>17</sup> A study may contain both an impact evaluation and a process evaluation – or less commonly different effectiveness designs – and so appears in more than one place in the table.

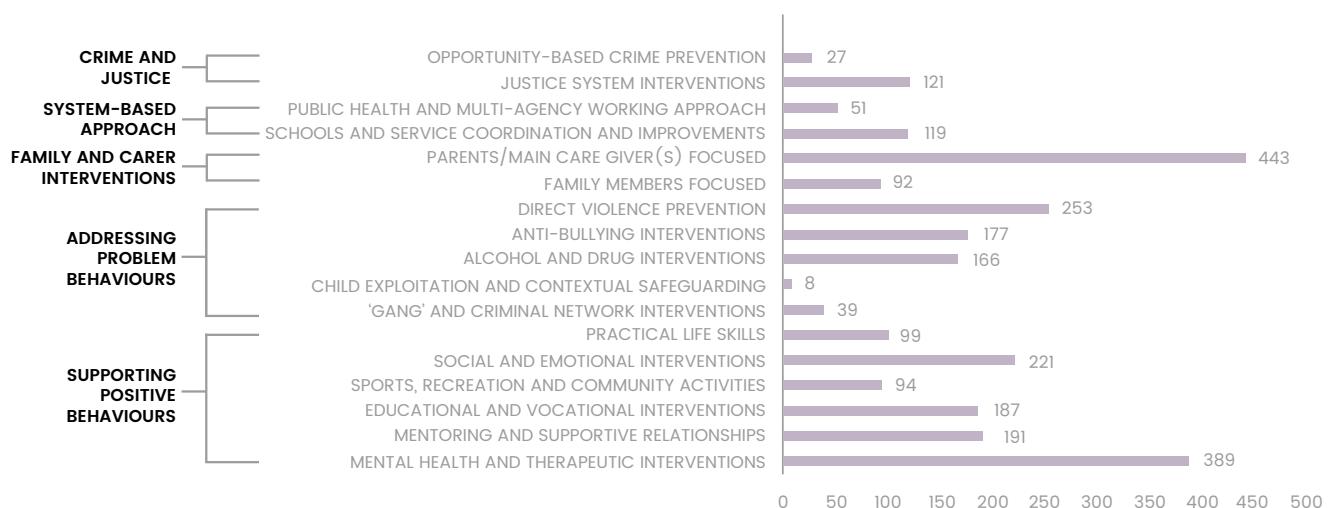
There are over 300 studies in the EGM related to the UK, of which about a quarter are reviews, leaving approximately 260 UK primary studies. Nearly half of these studies are qualitative process evaluations examining how an intervention works (rather than the impact it is having).

## Looking at interventions in more detail: sub-category analysis

Chart 1 shows the number of studies in each intervention sub-category. The predominant intervention category is that for parents and caregivers. These interventions include both parenting classes and child-focused interventions, especially those for younger children, which include activities that engage parents.

The interventions to support better behaviours are reasonably spread over all intervention categories, with the exception of sports, recreation and community groups and practical life skills. Since these activities are fairly common among young people – more so than, say, engaging in cognitive behavioural therapy – this reflects a potential bias in the academic literature to study ‘interventions’ rather than everyday activities children could be encouraged to do, even if those activities could have important therapeutic effects. For example, an encouragement design study (where participants are randomly assigned to receiving an ‘incentive’ to take part in an intervention) could be set up to encourage children in the UK to participate in Parkrun.

Chart 1: Number of studies in each intervention sub-category<sup>18</sup>

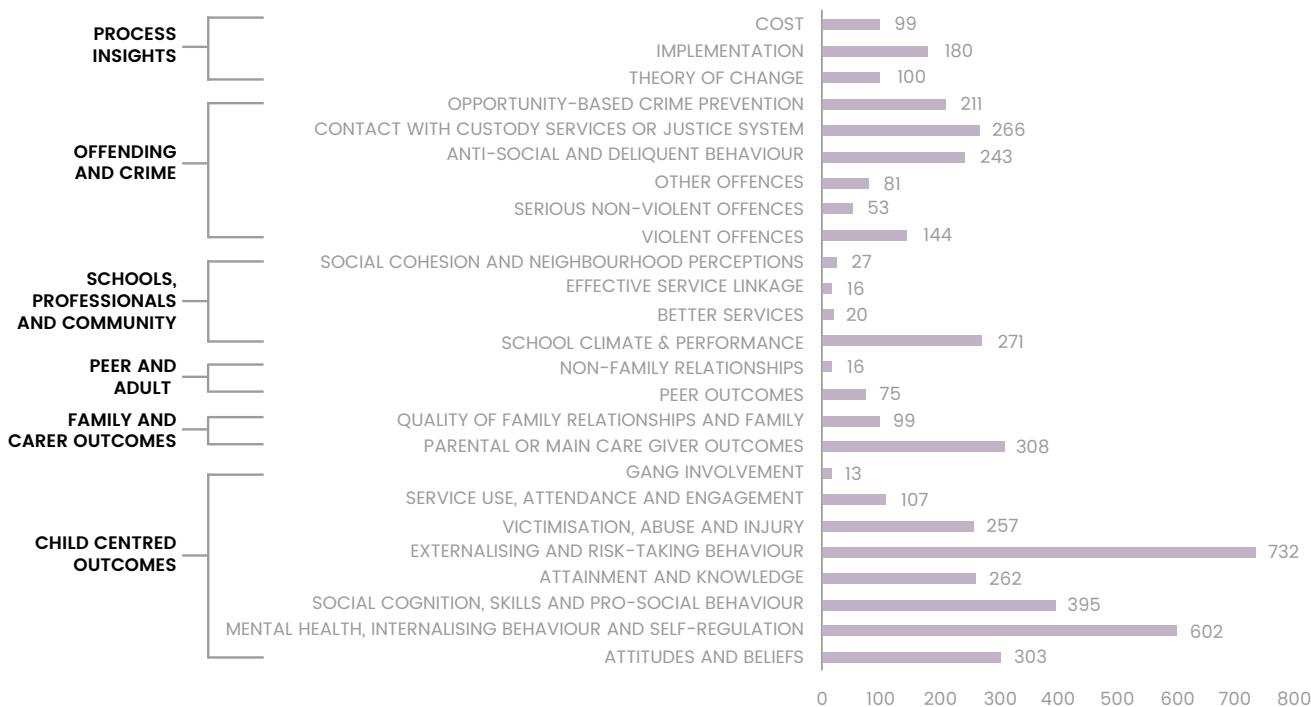


A particularly notable gap is that related to child exploitation and contextual safeguarding. Given the interest in contextual safeguarding amongst practitioners, this is an area that could benefit from further study.

<sup>18</sup> Number of studies do not sum to the total number of studies as a single study may be coded for multiple outcomes and sub-outcomes.

Chart 2 below shows the number of studies in each outcome sub-category. The most common outcome sub-categories relate to supporting children and young people to express themselves and manage emotions. A large number of studies also fell into parent and carer sub-categories.

**Chart 2: Outcome sub-categories: Number of studies<sup>19</sup>**



### Areas with the most evidence available

The EGM shows that certain areas have significant amounts of evidence, will help us to develop evidence tools, including our Toolkit (see Conclusion for more information on this).

Two of the supporting better behaviour sub-categories have intervention types with more than 200 studies, with another intervention sub-category following closely behind:

- ◆ Mental health and therapeutic interventions: effect on (i) mental health, internalising behaviour and self-worth, (ii) externalising and risk-taking behaviour
- ◆ Social and emotional interventions: effects on (i) mental health, internalising behaviour and self-worth, (ii) social cognition, skills and pro-social behaviour, and (iii) externalising and risk-taking behaviour
- ◆ Educational and vocational interventions: (i) effects on externalising and risk-taking behaviour, (ii) attainment and knowledge.

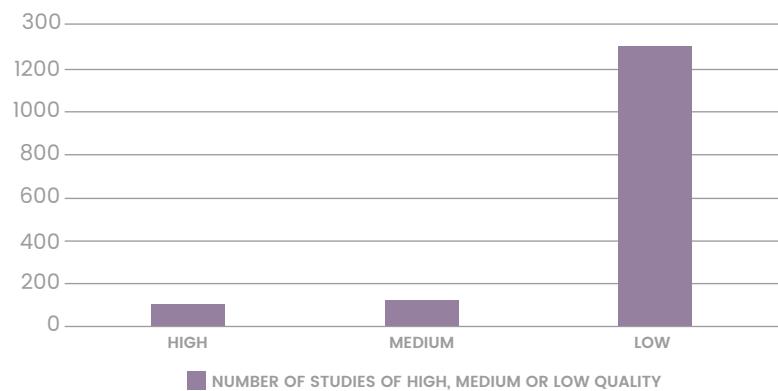
Parent/caregiver interventions are extensively evidenced across a number of outcome areas. These are: (i) mental health, internalising behaviour and self-regulation, (ii) social cognition, skills and pro-social behaviour, and (iii) externalising and risk-taking behaviour, and (iv) parental or main giver outcomes.

<sup>19</sup> Number of studies do not sum to the total number of studies as a single study may be coded for multiple outcomes and sub-outcomes.

## **Impact evaluations**

Chart 3 below shows the quality of evidence from the impact evaluations in the EGM, following critical appraisal.

**Chart 3: Quality of evidence of impact evaluations<sup>20</sup>**

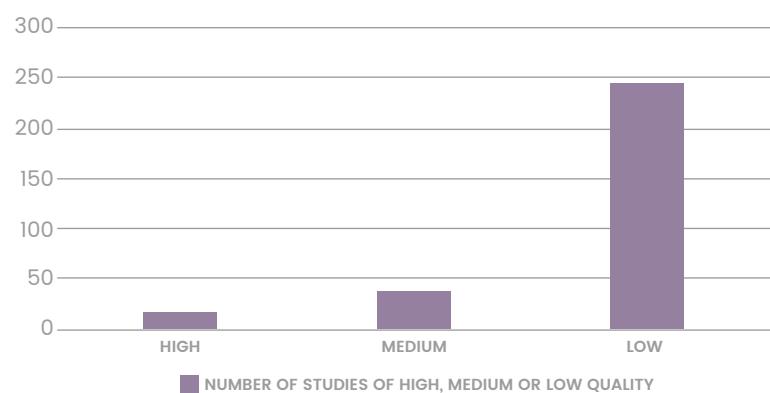


Most of the impact evaluations included were ranked as 'low quality'. This is based on the study design, which included an assessment of the number of participants who dropped out of the study, outcome description and power calculation in the sampling. The low quality rating is mostly due to the lack of power calculation in the sampling, which means that studies often failed to estimate the minimum sample size needed in order to detect an effect, if one exists. It is worth noting that is a relatively strict criteria for 'low quality', given that most studies included here are still using experimental or quasi-experimental designs (i.e. RCTs and QEDs).

## **Process evaluations**

Chart 4 below shows the quality of evidence from the process evaluations in the EGM, following critical appraisal.

**Chart 4: Quality of evidence of process evaluations<sup>21</sup>**



<sup>20</sup> There are 1,569 impact evaluations included in the EGM; of these 32 are ongoing impact evaluations that are not critically appraised.

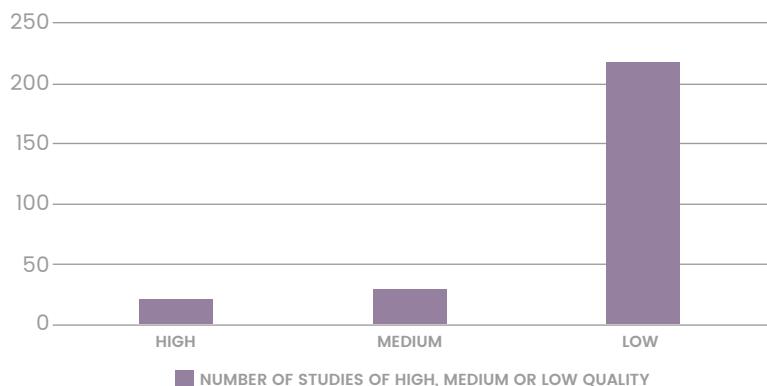
Most process evaluations are rated as low-quality. Quality was evaluated based on study characteristics such as qualitative and quantitative methodology and description, sampling strategy, assumptions, ethical considerations, data analysis and its approach, implications and evaluation questions. Low-quality ratings are mainly due lack of consideration of ethical issues and failure to adequately describe the methods used in the studies.

### **Systematic reviews**

Chart 5 below shows the quality of evidence from the systematic reviews in the EGM, following critical appraisal.

Systematic reviews and meta-analyses were critically appraised with AMSTAR-2.<sup>22</sup> The majority of systematic reviews are rated as being low-quality. This was mainly due to some critical flaws, such as accounting for risk of bias in primary studies, not using satisfactory techniques for assessing risk of bias or not providing the source of funding for the studies included in the review.

**Chart 5: Quality of evidence of systematic reviews<sup>23</sup>**



Figures for all other filter categories are provided in [Annex II Other filter tables](#).

<sup>21</sup> There are 302 process evaluations included in the EGM; of these 2 are ongoing process evaluations that are not critically appraised.

<sup>22</sup> AMSTAR-2 is a critical appraisal tool specifically designed for systematic reviews

## What does the EGM tell us about the gaps?

There are some significant evidence gaps in the EGM, where we have not found a significant body of evidence. These gaps are set out below by intervention type, outcome and population:

### **Intervention type**

- ◆ System approaches, such as public health and multi-agency working approaches
- ◆ Opportunity-based crime prevention interventions
- ◆ Gang or criminal network-related interventions
- ◆ Interventions protecting against child exploitation
- ◆ Contextual safeguarding.

### **Outcomes**

- ◆ Peer and other adult outcomes
- ◆ Service use, attendance and engagement
- ◆ Attainment and knowledge
- ◆ Victimisation and abuse
- ◆ Gang involvement
- ◆ Schools, professionals and community related outcomes
- ◆ Service linkage
  - Attitudes and skills of social care professionals
  - Serious non-violent offences.

### **Population**

- ◆ People from Black, Asian, and Minority Ethnic backgrounds
- ◆ Vulnerable populations, including, 'gangs', looked-after children, and children with disabilities.
- ◆ Professionals (e.g. teachers)
- ◆ Families (including wider families).

23 There are 268 systematic reviews included in the EGM; of these 2 are ongoing systematic reviews that are not critically appraised.

## 6. Conclusion

The EGM contains over 2,000 studies, making it the largest repository of studies on youth violence in the world. It organises this knowledge in a way that helps users to:

- ◆ find evidence linked to intervention types and outcomes of interest
- ◆ see how strong the evidence is in a given area
- ◆ click through to find the individual underlying studies.

The EGM shows that there is an extensive evidence base, but it is unevenly distributed geographically and by topic area. It also shows that the quality of studies is promising but could be improved.

- ◆ The majority of evidence is from North America. The UK is also key contributor conducting almost half all of qualitative process evaluations. However, under 20% of the total studies in the EGM are from the UK.
- ◆ There is a good amount of evidence available on interventions supporting positive behaviour and those focused on parent/main carers, but evidence for interventions in crime and justice and system approaches is relatively less common.
- ◆ Child-centred outcomes are common in this EGM. However, there is scant evidence on outcomes including better services, effective services linkage, gang involvement, social cohesion and neighbourhood perception.
- ◆ Very few studies focus on specific interventions for some key groups: looked after children, Black, Asian and Minority Ethnic people, 'gangs' or criminal networks and children with disabilities.
- ◆ While there is a significant body of evidence assessed as 'medium' or 'high quality' (over 250 studies), the significant majority of studies are assessed as 'low quality' for a range of reporting and methodological reasons. It is worth noting that 'low quality' here still represents quite a good level of evidence, e.g. mostly still RCTs and QEDs.

### Implications and next steps for YEF

The EGM is a relatively technical resource, and does not tell users what the evidence says – for that they need to review the individual studies that are linked from the EGM.

To make the underlying evidence more accessible and useful to a wider audience, we are developing our Toolkit (see below). To address the gaps and areas of promise identified above, we will also fund rigorous intervention studies and systematic reviews. We will continue to review and update the EGM to add studies and identify potential areas of promise.

#### 1. Building the Toolkit

The EGM provides the foundation for the YEF's forthcoming Toolkit, which will translate the underlying evidence into accessible and actionable summaries for practitioners and commissioners. The Toolkit will be a free, interactive tool on the YEF website. In its first version due to be published in June 2021, the Toolkit will focus on around 15 approaches that are underpinned by high quality reviews identified by the EGM. For each of these it will summarise the average impact, cost and evidence quality of each approach, and provide insights from process evaluations about how the approach can be implemented effectively. It will be regularly updated as a 'live' resource over the life of the Fund, incorporating further approaches and new studies as they are published. Supporting tools and resources will also be added to help practitioners and commissioners apply the findings in their own contexts.

## **2. Funding evaluations and reviews to build better UK evidence**

We will also use the EGM to focus our future grant-making on areas of promise, to fill important gaps and improve the quality of UK evidence on youth violence. In particular, we have committed to: (i) using experimental designs (RCTs and QEDs); (ii) appointing independent evaluators; (iii) publishing everything we fund; and (iv) conducting trials to the highest possible standards. This will help to address gaps identified above, making sure the quality, coverage, and UK-relevance of the evidence base improves. For example:

- ◆ The EGM shows that there are few evaluations of system approaches, such as public health and multi-agency working approaches. We plan to address this gap by funding evaluations focused on agency collaboration and system change.
- ◆ The EGM also identifies a key gap in the lack of studies specifically focusing on criminal justice interventions and/or reporting on offending outcomes. We intend to launch a funding round focusing on diversion from the criminal justice system and track offending outcomes longitudinally, which should improve the body of evidence in this area.
- ◆ A particularly notable gap is evidence related to child exploitation and contextual safeguarding. Given the interest in contextual safeguarding among practitioners, this is an area that would benefit from further study, for example, through a high quality systematic review, subsequent Toolkit summary, and evaluation.

## **3. Updating the EGM**

Updating and improving the EGM at regular intervals will ensure the YEF and other stakeholders have the best overview of the evidence base for interventions relevant to preventing children and young people's involvement in crime. Biennial updates are currently planned beginning in 2022, which will incorporate new studies, and further analysis and feedback following the launch of the EGM. For example, an update to the EGM relaxing the age criteria for a subset of approaches (such as crime and justice and place-based interventions) may reveal that there are more relevant studies that could be applicable to children and young people than is currently shown.

### **Final word**

The EGM provides a unique resource: collating over 2,000 studies, and organising and assessing them in an interactive tool that will support further understanding and investigation of the evidence base on preventing youth violence. It is primarily aimed at supporting the YEF's future decision-making and prioritisation, though we believe it will be of interest to a wider audience of researchers and policymakers. Most crucially, it will also support the development of key evidence tools, such as the Toolkit, which will bring the evidence to life for practitioners and commissioners making everyday decisions on what are the most effective strategies for preventing youth violence. We welcome users' feedback on the EGM, and suggestions as we develop and update it further in the coming years.

## 7. Glossary

**AMSTAR-2:** This stands for A Measurement Tool to Assess Systematic Reviews 2.

This is a gold standard assessment tool for systematic reviews. For more information please see: <https://amstar.ca/Amstar-2.php>.

**Approaches:** An approach is a set of interventions with similar theories of change. It is not a manualised or precisely described activity. For example, the 'police in schools' approach covers a range of activities which aim to reduce youth violence by having a police officer visit schools. The police officer might use assemblies, small-group sessions or PSHE lessons to teach young people about policing and the law, personal safety, and local issues. These activities all share the expectation that police officers working directly with young people in schools will reduce youth crime.

**Critical appraisal tool:** This refers to the document used to help the project teams decide how to rate the quality of the studies included. For more details on this tool please see [Annex 2 Critical Appraisal Tool](#).

**Data:** Data is the information collected in a study (i.e. the answers to surveys).

**Databases:** These are places that store data and can be physical (e.g. filing cabinets or archives). However, in most cases they are digital stores of information).

**Evidence and Gap Map (EGM):** A evidence and gap map is an interactive tool directing users to relevant studies within a specified area of interest (e.g. mentoring programmes aimed at young people at risk of involvement in violent crime).

**EGM typology:** This refers to the labels of the EGM present horizontally (on the x-axis) and vertically (on the y-axis).

**Evidence map:** Any evidence map is a product that systematically searches for and presents evidence on a certain topic. Evidence maps highlight the gaps in research in a user-friendly way. An EGM is a type of map, but not all evidence maps are called EGMs.

**Evidence platforms:** Sites that contain collections of evidence, though not necessarily organised into standardised formats like evidence portals or toolkits (see below).

**Evidence portals:** Also known as 'evidence toolkits,' these are set of tools to help decision-makers or practitioners interpret evidence more easily. They usually do this by providing a summary of key information. For more information about Toolkits please see the 'Toolkit' section in [Annex 1 The evidence revolution](#).

**Evidence products:** Any tool or resource (e.g. a report) that is based on research or aims to help people use research.

**Exclusion criteria:** This is a list of items that, if featured in a study, disqualify it from inclusion, in this case within the EGM. In the YEF EGM a study will be excluded if it does not feature any YEF relevant outcomes, for example studies looking only at reducing obesity.

**Filter terms:** These are words or phrases that EGM users can select in the 'filter' section of the EGM to narrow their search. These include items such as 'country'.

**Final outcomes:** Also sometimes called 'ultimate outcomes' these are the changes in a population that we most hope to achieve but might occur in the longer term (rather than immediately following the intervention). For YEF our final outcome is reduced violence.

**Inclusion criteria:** this is a list of requirements that a study has to meet in order to be added, in this case to the EGM. An example of one of our criteria is that the study must be written in English.

**Impact evaluations:** These studies examine how effective an intervention is (i.e. how well it achieves its intended outcomes). This is done by measuring an outcome of interest, (e.g. a reduction in violence, ideally in relation to a comparison group that did not receive the intervention). Higher quality designs typically involve randomly allocating participants to an intervention or a comparison group (e.g. RCTs), or creating statistically similar comparison groups (e.g. QEDs). In both cases, the aim is to try and understand what impact the intervention had relative to what would have happened otherwise. In addition to RCTs and QEDs, the EGM also includes 'pre/post' studies, which look at a group's change in outcomes before and after an intervention, but without a comparison group. These types of studies are less rigorous, though provide information on the extent of evaluation in different intervention areas, and potential areas of promise where more rigorous studies could be beneficial.

**Implementation:** This refers to how an intervention runs in practice. This is a sub-category in our 'process insights' category and points to details about what helps and hinders the running of an intervention in practice.

**Intervention:** An intervention is an activity, approach or programme aimed at achieving a desired change in an individual or group.

**Intermediate outcomes:** These are the changes in the population which are being measured that occur earlier than the final change that we might be interested in. For example, if reduced violence is our desired outcomes, an intermediate outcome that might occur before could be less aggression.

**Interrupted time series:** This is a type of study design that compares data collected at multiple points over an extended period of time, both before and after an intervention, to help assess the effect of the intervention (which 'interrupts' the time series). This is one of the types of QED designs that does not feature a comparison group, however it takes into account the fluctuations that can occur before and after an intervention, unlike 'pre/post' studies.

**Instrumental variable/other regression:** This is a type of statistical analysis that is used to estimate the relationship between interventions and outcomes.

**Level of targeting:** This refers to how specific the group receiving an intervention is. There are two levels: universal (available to all children or young people) or targeted (only available to certain children or young people).

**Matched comparison:** This is a type of study in which one group of participants who receive an intervention are compared to another group of participants who do not receive the intervention. Comparing outcomes across the groups is best done if participants are similar. The process of ensuring participants are similar is called 'matching'. Good quality studies 'match' participants on a number of different criteria that could affect the outcomes, for example demographic factors such as age or factors that are particularly relevant to the intervention (e.g. previous school grade might be important for an educational intervention). Matched comparison studies are an example of a QED.

**Outcomes:** These are the changes in the population which are being measured (i.e. the result, or effect, of an intervention). These are usually what an intervention intends to change (and therefore measures) and could be intermediate or final outcomes.

**PICOS:** Stands for Population, Intervention, Comparison, Outcomes and Study design. PICOS is a widely framework for ensuring that studies are clear it is recommended by guidelines such The Cochrane Handbook for Systematic Reviews of Interventions. The PICOS of the YEF EGM is discussed in [Section 3](#) above.

**Place-based intervention:** Interventions that are focused on a geographic location rather than on a specific person or group of people. Examples of place-based interventions include street lighting and alley-gating, as well as targeted policing of specific crime hotspots, at a street or other small geographic area.

**Point of intervention:** This refers to when an activity, programme or approach takes place during an individual's potential journey through services and is an option for filtering the EGM. There are three options featured in this EGM which are based on the medical organisation of services. They are primary (available to everyone, usually through universal services like a GP), secondary (available to some individuals who need more support than is available at the primary level) and tertiary (these are specialist services available to those most in need).

**Population:** When we refer to population we mean the people involved in a study.

**'Pre/post' studies:** These types of studies look at a change in outcomes before and after an intervention, but without a comparison group. They are less rigorous than studies with comparison groups, though provide information on the extent of evaluation in different intervention areas, and potential areas of promise where more rigorous studies could be beneficial.

**Primary studies:** Studies of individual interventions.

**Process evaluations:** These are studies about how interventions work both theoretically (e.g. theory of change) and practically (design, cost, implementation issues). Such insights and can be found either alongside studies examining the effect of interventions, or more commonly, in descriptive studies of interventions conducted without an analysis of effect (qualitative process evaluations).

**Programmes:** A collection of clearly defined ('manualised') activities, training, and/or resources. There is an expectation that a core set of activities happen in the same way across different contexts. The precise details of implementation can vary across contexts, but the aim is that core activities are delivered consistently. These are often associated with a brand name (e.g. Becoming a Man).

**Quasi Experimental Designs (QEDs):** Is an evaluation of an intervention that does not involve randomisation, though attempts to find other ways of inferring that the intervention led to the change in the outcome, for example, by creating matched comparison groups that have similar characteristics to the intervention group.

**Qualitative research or studies:** Research or studies that explore themes and effects using words rather than numbers. Analysis can be conducted (e.g. thematic analysis which looks for patterns in people's written or verbal answers), but these do not provide a numerical value.

**Quality:** When we discuss quality, this refers to how confident we can be in a study's findings, based on specific criteria for rating studies.

**Quantitative research or studies:** Research or studies that feature a statistical analysis of items measured with a numerical value. For example, questionnaires that convert someone's answer into a score.

**Randomised control trials (RCTs):** Sometimes referred to as randomised controlled trials, these studies feature at least one group that do not receive an intervention (control group) and participants are assigned to either the intervention group or control groups by chance (randomisation). These studies are rigorous and considered the gold standard in research trials.

**Systematics reviews:** These studies find, collate and evaluate the results of relevant primary research in response to a pre-defined question (typically assessing the effect of an intervention).<sup>24</sup> Some of the systematic reviews also include meta-analyses, which also calculate an average estimate of the effect of the intervention(s) on outcomes of interest.

**Theory of change:** A theory of change explains the rationale for why an intervention is needed and explains how it links to its intended outcomes. A good theory of change will identify short and long-term goals that are important link them to research literature.

**Unit of delivery:** This refers to how an intervention is implemented and is a filter option available in the EGM. The options are individuals or groups (including couples).

24 See here for additional information: <https://campbellcollaboration.org/what-is-a-systematic-review.html>

## **ANNEXES**



## Annex 1: The evidence revolution

Recent decades have witnessed an evidence revolution in social policy. The foundation of this revolution has been the use of impact evaluations – notably randomised controlled trials (RCTs) – to evaluate what difference interventions make. The field of crime and justice research is one in which there was early use of RCTs, with many studies undertaken, mainly in the United States, in the 1970s.

The rapidly growing number of studies can help decision-makers understand which interventions are most likely to support those children who are at risk of becoming involved in violence. But if the number of studies becomes overwhelming, sometimes with apparently conflicting evidence, then decision-makers will require considerable time and resource to effectively draw on this evidence. A solution to this is to provide an overview of the evidence by summarising the findings from a number of studies, as done by reviews. If studies are identified and summarised in a pre-specified and uniform manner, this is called a systematic review. They're different from literature reviews because they follow a careful methodology to account for biases.

### Toolkits

Toolkits offer an ever more succinct way to examine an evidence base than systematic reviews. The best-known example of an evidence toolkit from the What Works Centres is the Education Endowment Foundation's Teaching and Learning Toolkit (Figure 4). The toolkit contains approaches to improving learning outcomes, such as Arts Participation and Feedback, presenting three key pieces of information for every included item: (i) intervention impact (measured in additional months' academic progress), (ii) the strength of evidence on which the assessment is based, and (iii) intervention cost. The user can click through to an additional document containing further information about the intervention and underlying evidence.

Figure 4 A section of the EEF Teaching and Learning Toolkit

| Toolkit Strand ▾  | Cost ▾    | Evidence Strength ▾ | Impact (months) |
|---|-----------|---------------------|-----------------|
| <b>Arts participation</b><br>Low impact for low cost, based on moderate evidence.                           | £ £ £ £ £ | 🔒 🔒 🔒 🔒 🔒           | +2              |
| <b>Aspiration interventions</b><br>Very low or no impact for moderate cost, based on very limited evidence. | £ £ £ £ £ | 🔒 🔒 🔒 🔒 🔒           | 0               |
| <b>Behaviour interventions</b><br>Moderate impact for moderate cost, based on extensive evidence.           | £ £ £ £ £ | 🔒 🔒 🔒 🔒 🔒           | +3              |
| <b>Block scheduling</b><br>Very low or no impact for very low cost, based on limited evidence.              | £ £ £ £ £ | 🔒 🔒 🔒 🔒 🔒           | 0               |

## Annex 2: Critical Appraisal Tool

The critical appraisal tool helped reviewers provide an indication of the quality of the studies included in the EGM. All studies were rated against how clear the intervention and evaluation questions described in the study and overall scores were also calculated in the same way. For more a more detailed look at study quality, separate questions were considered for impact and process evaluations because they have different purposes and therefore different elements that can affect their quality.

The tool can be found below and was developed in conjunction with the Campbell Collaboration and along with our partners at the Early Intervention Foundation (EIF). It was made by consulting other quality tools available (namely the Critical Appraisal Skills Programme (CASP) Checklist<sup>25</sup>), seeking further input from partners at the EIF as well as experts in the field.

### Critical appraisal tool for primary studies:

Question for all studies

| ITEM                        | DESCRIPTION   | KEY  | NOTES |
|-----------------------------|---|--|-------|
| <b>INTERVENTION</b>         | Is the intervention clearly named and described, including all relevant components? See examples below. | High: full and clear description, so that the main components and how they are delivered are clear<br><br>Medium: Partial description<br><br>Low: Little or no description |       |
| <b>EVALUATION QUESTIONS</b> | Are the evaluation questions clearly stated?  | High: full and clear description, so that the main components and how they are delivered are clear<br><br>Medium: Partial description<br><br>Low: Little or no description |       |
| <b>OVERALL SCORE</b>        | Is there a low score on any item (e.g. evaluation questions or study design)?                           | High: High on all items<br><br>Medium: No lower than medium on any item<br><br>Low: At least one low   |       |

25 Please see here for more details about the CASP Check lists <https://casp-uk.net/casp-tools-checklists/>.

Questions for impact evaluations only

| ITEM                                   | DESCRIPTION  | KEY   | NOTES |
|--|--|---|-------|
| <b>STUDY DESIGN</b>                    | What type of study design is used?   | High: Experimental<br>Medium: Non-experimental<br>Low: Pre/post   |       |
| <b>OUTCOMES</b>                        | Are the outcomes clearly defined? Where appropriate do they use an existing, validated measurement tool?   | High: full and clear definition using validated instruments where available (a researcher wishing to use these outcomes would have sufficient information to do so)<br><br>Medium: Partial definition. May use validated instruments but without sufficient references to source.<br><br>Low: Little or no definition |       |
| <b>SAMPLE SIZE (POWER CALCULATION)</b> | Do the authors report a power calculation as the basis for sample size?  | High: Power calculation report and sample size meets necessary sample size<br><br>Medium: Power calculation mentioned and sample size meets necessary sample size<br><br>Low: No mention of power calculation.  |       |
| <b>ATTRITION</b>                       | Reported for endline and longest follow up.<br><br>Calculate overall attrition and differential attrition. It is often necessary to calculate from table of results. If sample size varies by outcome calculate for highest attrition. | High: Attrition within IES conservative standard<br><br>Medium: Attrition within IES liberal standard<br><br>Low: Attrition outside IES liberal standard  |       |
|  | Note IES Attrition Brief<br><a href="https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_brief_attrition_080715.pdf">https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_brief_attrition_080715.pdf</a>                        |   |       |

Questions for process evaluations (used for any study coded as containing process insights)

| QUESTION |   | HIGH | MEDIUM    | LOW |     | LOW                 |
|----------|---|------|-----------|-----|-----|---------------------|
| <b>1</b> | <b>IS THE QUALITATIVE METHODOLOGY DESCRIBED?</b>  | Yes  |           | No  | >>3 |                     |
| <b>2</b> | <b>IS THE QUALITATIVE METHODOLOGY APPROPRIATE TO ADDRESS THE EVALUATION QUESTIONS?</b>          | Yes  | Partially | No  |     | Insufficient detail |
| <b>3</b> | <b>IS THE RECRUITMENT OR SAMPLING STRATEGY DESCRIBED?</b>                                       | Yes  |           | No  | >>5 |                     |
| <b>4</b> | <b>IS THE RECRUITMENT OR SAMPLING STRATEGY APPROPRIATE TO ADDRESS THE EVALUATION QUESTIONS?</b> | Yes  | Partially | No  |     | Insufficient detail |
| <b>5</b> | <b>ARE THE RESEARCHER'S OWN POSITION, ASSUMPTIONS AND POSSIBLE BIASES OUTLINED?</b>             | Yes  |           | No  |     | Insufficient detail |
| <b>7</b> | <b>IS THE DATA ANALYSIS APPROACH ADEQUATELY DESCRIBED?</b>                                      | Yes  |           | No  | >>9 |                     |
| <b>8</b> | <b>IS THE DATA ANALYSIS SUFFICIENTLY RIGOROUS?</b>  | Yes  | Partially | No  |     |                     |
| <b>9</b> | <b>ARE THE IMPLICATIONS OR RECOMMENDATIONS CLEARLY BASED IN THE EVIDENCE FROM THE STUDY?</b>    | Yes  | Partially | No  |     |                     |

## Annex 3: Details about how to use the EGM and features available

As previously mentioned, the EGM is an interactive tool with numerous features available to help identify relevant studies more quickly. Discussed below are how to use some of these features.

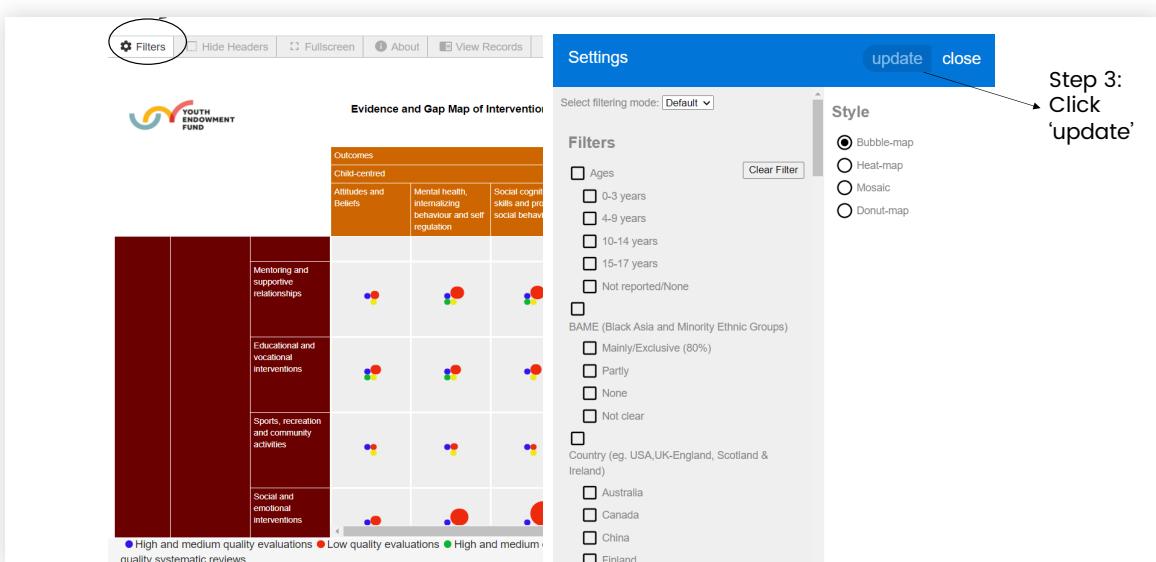
### Using filters

There are numerous filters you can use to refine the results and search for studies, these include:

- ◆ Country
- ◆ Location setting
- ◆ Level of targeting (i.e. universal or targeted)
- ◆ Point of intervention (i.e. primary, secondary, tertiary, multiple)
- ◆ Target group of interventions
- ◆ Unit of delivery (i.e. individual or group)
- ◆ Demographics (i.e. age or ethnicity)
- ◆ Study quality
- ◆ Year of publication
- ◆ Status of study

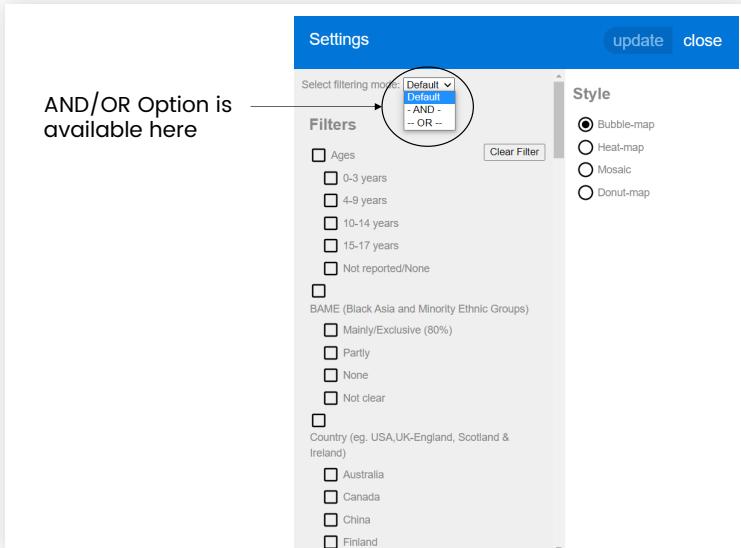
You can access the filters by clicking the 'Filters' tab in the top left-hand corner of the screen, then ticking your chosen options or click on a relevant column/row header on the EGM. These steps can be seen in Snapshot 6. Please note that when filters are added it effectively updates the EGM.

### Snapshot 6: How to use filters



In addition to the filters you can also choose whether each filter option is required for the search (using the AND button), or in addition components of the search (using the OR option). These can be found at the top of the filters option as seen in Snapshot 7.

### Snapshot 7: Using AND/OR



### Other ways to search the EGM

You can also search for studies by other desired search terms. To do this, click the 'View Records' tab at the top of the screen and type in search terms in the 'Filter' box, as per Snapshot 8.

### Snapshot 8: Searching all records

**Step 1: Click View Records**

**Step 2: Type desired search term here and press enter**

The screenshot shows the EGM interface with the following details:

- Top Bar:** Filters, Hide Headers, Fullscreen, About, View Records (circled).
- Left Side:** Evidence and Gap Map of Interventions (SOUTH ENDOWMENT FUND logo). It shows a grid of interventions categorized by type (Interventions, Supporting positive behaviours, Mental health and therapeutic interventions) and outcomes (Outcomes, Child centred, Attitudes and Beliefs, Mental health, internalizing behaviour and self regulation, Social cognition, skills and social behaviour, Externalizing and risk taking, Victimization, abuse and neglect, Service use, attendance, 'Gang' involvement, Parental or main carer, Quality of family relationships, Peer outcome, Non-family relationships, School climate & participation, Better services, Effective service links, Social cohesion and support, Violent offences, Serious non-violent...).
  - Legend: High and medium quality evaluations (blue dot), Low quality evaluations (red dot), High and medium quality systematic reviews (green dot).
- Right Side:**
  - Search Bar:** Filter (circled).
  - Results:** 2017 Records. Group by: None. Search term: "Interventions for children, youth, and parents to prevent and reduce cyber abuse".
  - List of Studies:**
    - "BREAKAWAY": Examining the E...
    - "Being a bully isn't very cool...": Uhlig S, Jansen E, Scherder E; 2018
    - "EspaJoye.net", a school-based i...
    - "One for All and All for One": Ass...
    - "Policing Schools" Strategies: A ...
    - "Positive Attitude": A multilevel m...
    - "Scared Straight" and other juven...
  - Text:** There is some evidence which shows that involvement in psychoeducation Internet safety programs has potential to increase Internet Safety knowledge.
  - Text:** The systematic review evaluates the effectiveness of cyberabuse interventions in augmenting internet safety knowledge and lowering risky online behavior.
  - Text:** What studies are included in this review? The following describes eligible studies: 1) experimental and quasi-experimental studies which includes prevention intervention strategies, 2) target participants are children aged 5 to 9 and/or their parents, 3) with control group, 4) evaluates outcomes relevant to cyber-abuse. There were only 3 studies included in the review. The countries of the included studies are USA and Canada.
  - Text:** What are the study findings? In outcome measures such as management of online risk and identification of online predators, a significant

There is also the option of searching in specific areas of the records and narrowing searching by outcomes/interventions, as seen in Snapshot 9. Please note that when an outcome/intervention is selected (or de-selected) records automatically refresh.

## Snapshot 9: Narrowing all record searches

**Snapshot 9: Narrowing all record searches**

The screenshot shows the EGM interface with a sidebar on the left containing a list of outcomes and interventions. A callout box highlights the filter bar at the top, which includes options for 'All', 'Title', 'Abstract', and 'Author'. Another callout box highlights the search term 'Interventions for children, youth, and parents to prevent and reduce cyber abuse'.

**De-selecting outcomes/interventions can also narrow searches**

**Options to narrow down where terms are searched**

**Study Results:**

- "BREAKAWAY": Examining the E...  
Wu Y C; July, 2018
- "Being a bully isn't very cool...": ...  
Uhlig S; Jansen E; Scherder E; 2018
- "EspaiJove.net": a school-based i...  
Casanas R; Arribalzaga V M; Castellvi P; 2018
- "One for All and All for One": Ass...  
Ward L T; September , 2009
- "Policing Schools" Strategies: A ...  
Petrosino A; Guckenburg S; Fronius S; January, 2012
- "Positive Attitude": A multilevel m...  
Coelho V A; Marchante M; Sousa V; August , 2015
- "Scared Straight" and other juven...  
Petrosino A; Turpin-Petrosino C; B... April, 2002

**Text from study abstract:**

There is some evidence which shows that involvement in psychoeducation Internet safety programs has potential to increase Internet Safety knowledge

The systematic review evaluates the effectiveness of cyberabuse interventions in augmenting internet safety knowledge and lowering risky online behavior.

**What studies are included in this review?**

The following describes eligible studies: 1) experimental and quasi-experimental studies which includes prevention intervention strategies, 2) target participants are children aged 5 to 9 and/or their parents, 3) with control group, 3) evaluates outcomes relevant to cyber-abuse. There were only 3 studies included in the review. The countries of the included studies are USA and Canada.

**What are the study findings?**

In outcome measures such as management of online risk and identification of online predators, a significant

## Other presentation options available

Although the default EGM presentation is the bubble map, the way that studies are displayed in the cells can be changed to suit the user. The additional options are: heat-map, mosaic and donut-map which can be found in the right hand of the filter options (seen in Snapshot 10).

## Snapshot 10: How to change presentation options

**Snapshot 10: How to change presentation options**

The screenshot shows the 'Settings' menu with a 'Style' section. A callout box highlights the 'Bubble-map' option, which is currently selected. Another callout box highlights the 'update' button.

**Step 1: Different presentation option can be selected here**

**Step 2: Click update to see new map presentation option**

**Settings**

Select filtering mode: Default

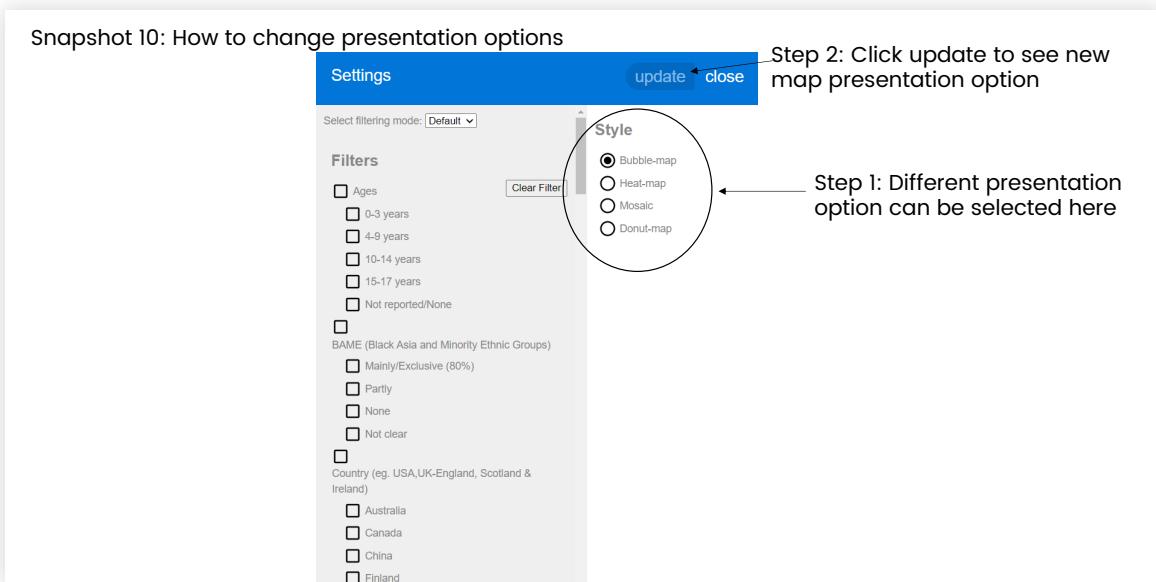
**Filters**

- Ages
  - 0-3 years
  - 4-9 years
  - 10-14 years
  - 15-17 years
  - Not reported/None
- BAME (Black Asia and Minority Ethnic Groups)
  - Mainly/Exclusive (80%)
  - Partly
  - None
  - Not clear
- Country (e.g. USA, UK-England, Scotland & Ireland)
  - Australia
  - Canada
  - China
  - Finland

An example of the each can be found below (see Snapshot 11).

### Snapshot 11: Other presentation examples

#### Snapshot 10: How to change presentation options



### Downloading references

A newly added feature for the EGM is that reference lists can be download. This option can be found in the records view (see Snapshot 12). Please note that your computer needs to be able to download RIS files for this feature to work.

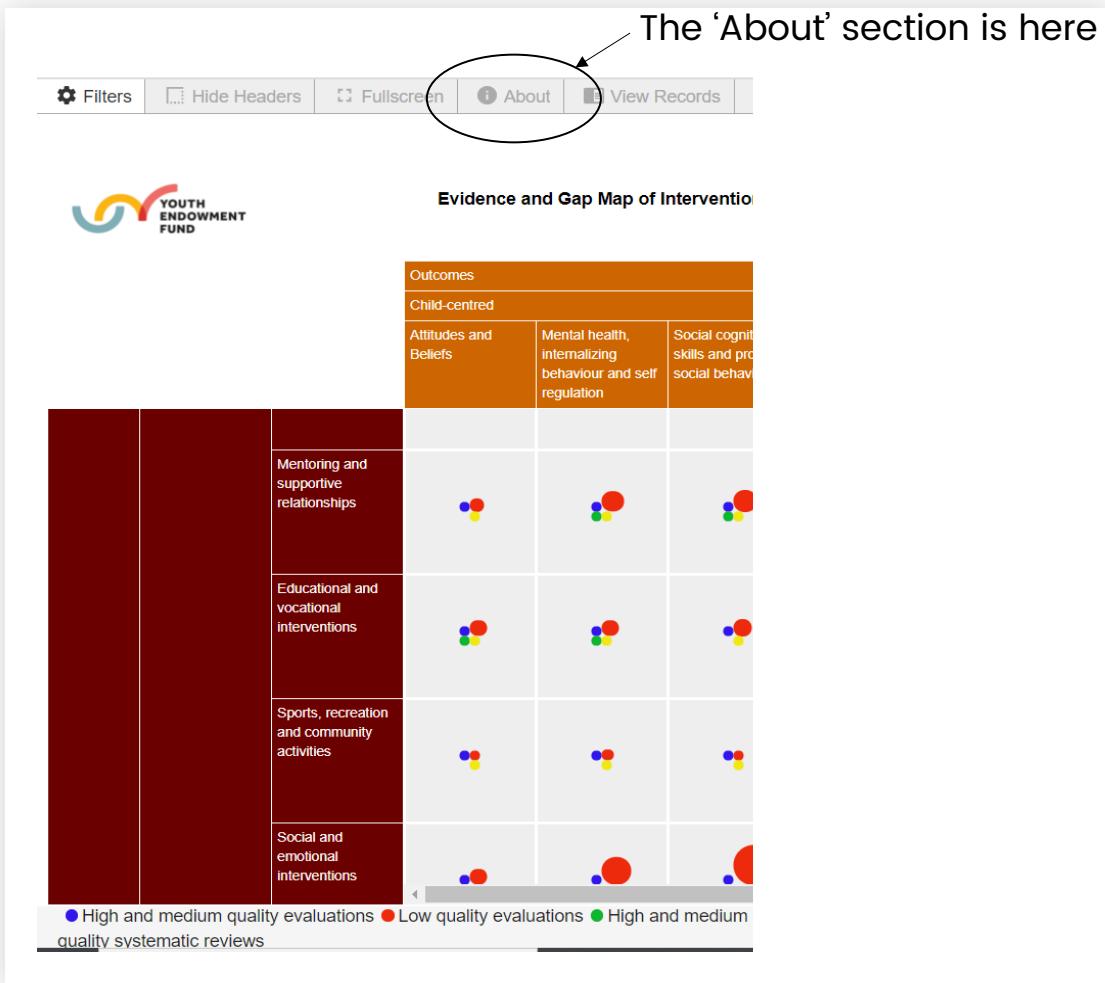
### Snapshot 12: Downloading reference lists

The screenshot shows the 'View Records' screen of the Evidence and Gap Map. At the top, it says 'X 224 Records'. On the right, there's a 'Download Listed References' button. The main area displays a list of studies with their titles, authors, and publication years. At the bottom left, there's a link 'references (3).ris'. Callouts with arrows point from the text descriptions to the corresponding UI elements.

## Other ways to find out about features

Information about how to use the EGM is also available on the 'about' tab of the EGM (see Snapshot 13). Further information is also available directly through Eppi Centre e.g. tutorial available: <https://www.youtube.com/watch?v=wKPNeZFTo8o>.

Snapshot 13: Finding the 'About' section



## Annex 4 Developing the categories and sub-categories of the EGM

The categories and sub-categories of the EGM underwent a number of iterations. Broadly the steps undertaken were as follows:

1. Created a long list of intervention and outcomes (we used the ecological framework as a model for outcomes)
2. Combined items that were similar<sup>26</sup> to produce a first version of the categories
3. Sought feedback from external stakeholders (through workshops, interviews, emails etc)
4. Refined categories
5. Tested categories by coding a selection of studies
6. Refined categories
7. Sought external feedback<sup>27</sup>
8. Repeated steps 3-7 a number of times until the categories exceeded technical capacity of the EGM
9. Combined categories where possible to fit EGM's technical limitations
10. Collated all feedback and considered all feedback together to check nothing was missed.
11. Actioned feedback where it was possible to do so. Where conflicting feedback was received, the action most beneficial to the YEF was selected.
12. Sought feedback from experts on the final categories and updated all stakeholders with the progress.

The final broad categories and their development histories can be found below. For all intervention categories it is important to note that the first iterations conflated delivery details (such as who and where the intervention occurred) and the of intervention offered type. The final categories below are therefore distilled to focus on core aim regardless of *who* the intervention is delivered to and *where* it is delivered (these were added as filters).

<sup>26</sup> Examples of similar in this instance means similar aims for interventions (e.g. both brief alcohol treatment and counselling for addiction aims to reduce alcohol use) and similar effect of interest for outcomes (e.g. both alcohol and drug use could be classified as risk taking behavior)

<sup>27</sup> This did not always occur immediately following an adjust and different stakeholders were consulted at different point throughout the process

| INTERVENTION CATEGORY                                 | DEVELOPMENT HISTORY   |
|---|---|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b>                 | <p>This category was created to identify interventions that were based on the idea of supporting positive development as a way to reduce likelihood of involvement in violence. These are sometimes called 'strength based' approaches and were identified as very important by our stakeholders.</p> <p>Once the category was created it remained broadly unchanged, save for an adjustment of wording (from 'better' to 'positive').</p>  |
| <b>ADDRESSING PROBLEM BEHAVIOURS</b>                  | <p>Addressing problem behaviours is the category reserved for more targeted interventions for children and young people. These interventions focus on children and young people who are already involved in crime, violence and/or related problems such as drugs and alcohol use.</p> <p>It is important to note that for our purpose 'problem behaviour' does not always refer directly to the behaviour of the child. It also captures the 'problem behaviour' of adults associated with children (for example, child exploitation).</p> <p>Once this category was created it remained unchanged, though our stakeholders highlighted that it was important to communicate the note above.</p> |
| <b>FAMILY AND CARER INTERVENTIONS</b>                 | <p>This category was initially 'family' interventions however, in order to make clear that they might also be relevant for non-traditional family structures 'carer' was added to the title. This was based on feedback from our stakeholders.</p>  |
| <b>SYSTEM APPROACHES</b>                              | <p>Systems approaches was created based on feedback from our stakeholders which highlighted the importance of capturing the impact of policies and changes to systems which could also impact child involvement in violence.</p> <p>Once the category was created it remained unchanged.</p>  |
| <b>JUSTICE AND OPPORTUNITY-BASED CRIME PREVENTION</b> | <p>This category was created in order to more easily identify interventions that are specifically relevant to crime, including interventions involving the justice system or environmental interventions designed to reduce crime. This was done both as a response to stakeholder feedback and because it is a useful category for the YEF.</p> <p>In terms of labels, the category underwent several revisions, with the final label simply reflecting the subcategories of interventions captured.</p>   |

| OUTCOME DOMAIN                             | DEVELOPMENT HISTORY  |
|--|--|
| <b>CHILD-CENTRED</b>                       | Based on the 'individual' level factors in the ecological model of crime. The label was adjusted as per stakeholder feedback and captures outcomes of an identified child (or children) who are potentially at risk of involvement in crime and violence.  |
| <b>FAMILY AND CARER OUTCOMES</b>           | This category related to the 'family' level factor in the ecological model of crime but was altered to make clear that it included outcomes of non-traditional family structures (i.e. carers) were included. Again, this was prompted by stakeholder feedback.  |
| <b>PEER AND ADULT</b>                      | Peer and adult outcomes are based on the 'peer' level factors of the ecological model of crime. However, it was widened to include the outcomes from non-family adults e.g. mentors. Our stakeholders pointed to the importance of trusted relationships with adults (and peers), and this category was widened to capture this. |
| <b>SCHOOL, PROFESSIONALS AND COMMUNITY</b> | Based on the 'community' level factors in the ecological model of crime. Initially school interventions were separate, however, due to technical limitations categories were combined and the school (and professional) elements were highlighted in the label for clarity.  |
| <b>OFFENDING AND CRIME</b>                 | This category was not based on the ecological model of crime, but rather added to help us (and other stakeholders specifically interested in crime) more easily identify studies that measured crime outcomes. This was also encouraged by various stakeholders.   |

The final sub-categories and their development can be found below:

| INTERVENTION CATEGORY                 | SUB-CATEGORY                                | DEVELOPMENT HISTORY   |
|---------------------------------------|---|---|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b> | Mental health and therapeutic interventions | This sub-category has remained broadly the same throughout its development, with the word 'therapeutic' added to highlight that this category also contained 'treatments' that were not necessarily labelled as mental health.  |
|                                       | Mentoring and supportive relationships      | Originally this sub-category was just for mentoring interventions. However, it became clear that a number of other interventions relied on the similar mechanism as mentoring (e.g. forming trusting relationships). An example of such interventions includes general youth work. Mentoring was therefore widened to include the formation of supportive relationships due to technical limitations of the EGM.  |
|                                       | Educational and vocational interventions    | Educational and vocational interventions remained broadly the same throughout iterations.   |
|                                       | Sports, recreation and community activities | This sub-category was designed to capture the focus of 'positive' activities and was originally named 'sports and recreation'. The 'community' aspect was added later based on stakeholder recommendations as a way to include other 'positive' activities that were not just sports or recreative such as faith-based activities.  |
|                                       | Social and emotional interventions          | Social and emotional interventions can overlap with 'mental health and therapeutic interventions'. Although this is not ideal, we felt that it was important to distinguish interventions designed to 'treat' problems and those that were more generally designed to enhance skills that are beneficial to all. Social and emotional interventions are interventions designed to be beneficial to all. The majority of our stakeholders also supported the separation of 'Social and emotional learning' from 'mental health and therapeutic'. |

| INTERVENTION CATEGORY                 | SUB-CATEGORY                                   | DEVELOPMENT HISTORY   |
|---------------------------------------|--|---|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b> | Practical life skills                          | <p>This category was made as a distinct place for interventions that target living skills that are not captured in the other categories (e.g. cooking). Since the other categories were already broad we thought it was important to separate out this aspect as far as possible. However, it is important to note that there remains some overlap with 'social and emotional skills' and 'education and vocational' intervention types. One of the reasons for this is that studies often use 'life skills' to mean a wide range of intervention types.</p>                      |
| <b>ADDRESSING PROBLEM BEHAVIOURS</b>  | 'Gang' and criminal network interventions      | <p>Originally this category was called 'gang' interventions. However, some stakeholders noted that the term 'gang' may not be used in other cultures to identify programmes that essentially address the same concern. Therefore, 'criminal networks' was added to the label. Some of our stakeholders were also concerned about the term 'gangs' as it can be stigmatising. Though we understand the concern, we also felt it was important to not miss a key label within the literature. Therefore, quotation marks were added to reflect the label within the literature.</p> |
|                                       | Child exploitation and contextual safeguarding | <p>From meetings with our stakeholders it was evident that exploitation and contextual safeguarding were important types of interventions to include in the EGM. This category remained broadly unchanged throughout different iterations of the EGM axis.</p>  |
|                                       | Alcohol and Drug interventions                 | <p>This sub-category remained broadly unchanged as it refers to a distinct set of interventions that are usually easy to identify.</p>  |
|                                       | Anti-bullying interventions                    | <p>Anti-bullying interventions were identified as a distinct subset of interventions during the practice coding sessions. Once established this category remained unchanged.</p>  |
|                                       | Direct violence prevention                     | <p>During practice coding another distinct subset of interventions specifically addressing violence were identified which were not easily sorted into the other subcategories. This subcategory was therefore created and supported by stakeholders. The labelling of this category underwent a number of revisions, however 'direct violence prevention' was chosen because the programmes themselves identified violence prevention directly, rather than it being targeted indirectly through other approaches.</p>  |
| <b>FAMILY AND CARER INTERVENTIONS</b> | Parent/main care giver(s) focused              | <p>As with the main category, 'main caregiver' was added to the label as a way to be inclusive for families with a non-traditional structure, as per stakeholder feedback.</p>  |
|                                       | Family members focused                         | <p>Initially the subcategory was called 'whole family' to identify interventions that supported the whole family rather than just the main caregivers (as above). Some of our stakeholders suggested that some interventions, rather than targeting whole families, targeted other family members that were not the main caregivers (e.g. siblings). Due to technical limitations 'whole family' and 'other family members' were combined to create this sub-category.</p>  |

| INTERVENTION CATEGORY                                 | SUB-CATEGORY                                      | DEVELOPMENT HISTORY  |
|---|---|--|
| <b>SYSTEM APPROACHES</b>                              | Schools and service coordination and improvements | <p>School and community were initially separate subcategories with further differentiation between systems (processes) and people (professional based) interventions. However, due to technical limitation categories were combined and the key focus was decided to be improving individual services e.g. school, regardless of how this was conducted.</p> <p>During practice coding some interventions (e.g. school transition management programmes), were not individual service improvement, nor inter-agency working. Therefore, we highlighted the service coordination aspect and decided that if coordination was being managed within a sector (e.g. education to education), the intervention will fall under this approach.</p> |
|   | Public health and multi-agency working approaches | <p>This sub-category was created to highlight inter-agency working practices and processes. As above we defined this to be working between different sectors e.g. education and health. Both 'public health' and 'multi-agency working' were preferred terms by different stakeholder groups and therefore the final label incorporated both terms.</p>  |
| <b>JUSTICE AND OPPORTUNITY-BASED CRIME PREVENTION</b> | Justice system interventions                      | <p>The justice systems intervention sub-category was created to be able to locate these types of interventions more quickly as they may be of particular interest to the YEF and other stakeholders. Once this category was created it remained unchanged.</p>   |
|   | Opportunity based crime prevention                | <p>This sub-category underwent a number of name changes including 'crime prevention'. The intention was to have a discrete subcategory for crime prevention through environmental factors and opportunity reduction (e.g. curfews), as recommended by our stakeholders. The label 'opportunity based crime prevention' was borne out of the idea that both environmental factors such as lighting and other interventions such as curfew reduce the opportunity for crime and violence in various ways (e.g. restriction in terms of curfew and increased risk of getting caught with increased lighting).</p>   |

| <b>OUTCOME DOMAIN</b>            | <b>OUTCOME SUB-DOMAIN</b>                                  | <b>DEVELOPMENT HISTORY</b>  |
|----------------------------------|--|---|
| <b>CHILD-CENTRED</b>             | Attitudes and beliefs                                      | Attitudes and beliefs remained unchanged, though through the practice coding sessions, aspirations were also specifically highlighted in the definition.  |
|                                  | Mental health, internalising behaviour and self-regulation | Initially these outcomes were separate. However, it was decided to combine them due to the overlap between them and also due to technical limitations of the EGM. During practice coding this subcategory worked well. The final label underwent minor adjustments.   |
|                                  | Social cognition, skills and pro social behaviour          | Again, initially these were separate outcomes, however, social skills and cognition were combined because of their overlap. Feedback from our stakeholder, as well as our own practice coding, revealed that pro social behaviour was an outcome in many studies but not clearly captured in the other subcategories. Due to the shared aspects between social skills, cognition and pro social behaviour it was added to this sub-category and highlighted in the label. |
|                                  | Attainment and knowledge                                   | Originally this sub-category was called 'attainment'. However, during the practice coding sessions it became clear that many interventions included an outcome related to gaining specific knowledge (e.g. knowledge about drugs or patterns of abuse). The sub-category was therefore widened to increase specific gains in knowledge.   |
|                                  | Externalising and risk-taking behaviours                   | Externalising and risk-taking behaviours were initially separate sub-categories (as well as drug and alcohol outcomes). However, both due to technical limitation of the EGM, as well as the overlap in behaviours of these once separate subcategories, this combined subcategory was created.<br><br>Although the label of the EGM remains technical, most of our stakeholders reported being comfortable and familiar with the term 'externalising' behaviour.         |
|                                  | Victimisation, abuse and injury                            | This sub-category represents a combination of 'victimisation' and 'health'. The health category was refined to 'physical health' and later thought too broad from a violence perspective, recognising that health information due to injury or abuse remained the most relevant outcomes for the YEF. This was later combined with victimisation due to the similarity of the categories.   |
|                                  | Service use, attendance and engagement                     | Originally 'engagement' this category was widened to highlight that individual service use, and similarly attendance, were important outcomes noted by our stakeholders.  |
| <b>FAMILY AND CARER OUTCOMES</b> | Parental or main care giver outcomes                       | Apart from the addition of 'main caregiver' to include non-traditional family structures, this outcome label has remained unchanged.  |
|                                  | Quality of family relationships and family functioning     | Quality of relationships was highlighted as an important outcome by our stakeholders, therefore this outcome was highlighting in the label. Originally this label was just 'family functioning'.  |

| <b>OUTCOME DOMAIN</b>                              | <b>OUTCOME SUB-DOMAIN</b>                       | <b>DEVELOPMENT HISTORY</b>  |
|--|---|---|
| <b>PEER AND ADULT</b>                              | Peer outcomes                                   | Peer outcomes remained unchanged from the ecological model of crime 'peer level' factors.   |
|  | Non-family relationships                        | As noted, quality of non-family relationship was seen as a very important factor by our stakeholders and so was included as a distinct sub-category. Initially, peer and other adults were separated but they were later combined due to EGM's technical limitations. |
| <b>SCHOOL,<br/>PROFESSIONALS<br/>AND COMMUNITY</b> | School climate & performance                    | Apart from the addition of 'main caregiver' to include non-traditional family structures, this outcome label has remained unchanged.  |
|  | Better services                                 | Quality of relationships was highlighted as an important outcome by our stakeholders, therefore this outcome was highlighting in the label. Originally this label was just 'family functioning'.  |
|  | Effective service linkage                       | Again, this sub-category was created to capture the outcome of public health/multi-agency approaches.<br>The label underwent minor rephrasing once it was established.  |
|  | Social cohesion and neighbourhood perceptions   | This sub-category remained unchanged in nature, but the wording was tweaked to specifically highlight both the perception and cohesion elements. This was supported by our stakeholders.  |
| <b>OFFENDING<br/>AND CRIME</b>                     | Violent offences                                | Violent offences were felt to be particularly important to highlight for YEF and for other stakeholders. Once established this sub-category remained unchanged.   |
|  | Serious non-violent offences                    | Another category that was felt particularly important to highlight for the YEF are serious non-violent offences. This is to separate out other important outcomes, but that are not violence related.   |
|  | Other offences                                  | This sub-category was designed as a catch-all for other types of offences and unspecified offences. This was because many studies do not differentiate type of offenses, but it is important to capture any offending data.   |
|  | Antisocial and 'delinquent' behaviour           | This sub-category was created for data such as 'Anti-Social Behaviour Orders' or other measures of anti-social behaviour. This was encouraged by our stakeholders.  |
|  | Contact with justice system/any custody service | This sub-category was created because many of our stakeholders highlighted that contact with police/courts/probation etc. was an important outcome within the justice sector.   |

## Annex 5 Interventions, outcomes and process insights definitions

This Annex details definitions for each of the intervention, outcomes sub-categories as well as further details on the process insights components (which appear on the x-axis, after the listed outcomes). Each component (intervention type, outcome type etc) is discussed separately below, with references provided after each list.

### List of intervention categories and sub-categories

Intervention type appears on the y-axis of the EGM. Listed below are the definitions of the sub-categories included.

| INTERVENTION CATEGORY                             | INTERVENTION SUB-CATEGORY                      | DEFINITIONS  |
|---|--|--|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b>             | Mental health and therapeutic interventions    | Any recognised talking therapy, or intervention aimed specially at improving or treating mental health concerns.<br>Includes both individual and group. (Castillo Enrico G., 2019)   |
|   | Mentoring and supportive relationships         | Interventions [that] connect people who have specific skills and knowledge (mentors) with individuals (protégés) who need or want the same skills and advantages to move up in work, skill level, or school performance.' (Community tool box, n.d.)<br>This broadly includes building supportive relationships with key adults. |
|   | Educational and vocational interventions       | Interventions that focus on gaining specific knowledge or that lead to educational or career progressions (Lestrud, 2013) (Mau, 2008)  |
|   | Sports, recreation and community activities    | Interventions that promote the pursuit of positive activities such as sport or creative endeavours. (Khasnabis C, 2010)  |
|   | Social and emotional interventions             | Interventions which aim to improve children's interaction with others and self-management of emotions (2) (Education Endowment foundation, n.d.)   |
|   | Practical life skills                          | Activities that focus on developing skills of daily living and/or planning for adult life. (Prajapati R, 2017)   |
| <b>ADDRESSING PROBLEM BEHAVIOURS<sup>28</sup></b> | 'Gang' and criminal network interventions      | A gang, is defined by the social relationships of its members with each other and with those outside the group. This category, therefore, includes any intervention aiming to reduce gang related outcomes such as gang membership and activities or involvement in organised crime (Michael Sierra-Arevalo, 2017)               |
|   | Child exploitation and contextual safeguarding | Practices and procedures to reduce harm to children outside of the family home (University of Bedfordshire, 2020) , including those specifically related to child exploitation   |
|   | Alcohol and Drug interventions                 | Interventions addressing alcohol and/or drug related outcomes, including but not limited to direct use   |
|   | Anti-bullying interventions                    | Any interventions that identifies as 'anti-bullying' or is aimed at reducing persistent aggressive behaviour that is intended to cause another child harm or discomfort (American Psychological Association, n.d.).  |

28 It is important to note that for our purpose 'problem behaviour' does not always refer directly to the behaviour of the child. It also captures the 'problem behaviour' of adults associated with children (for example, child exploitation)

| INTERVENTION CATEGORY                                 | INTERVENTION SUB-CATEGORY                          | DEFINITIONS   |
|---|--|---|
| <b>ADDRESSING PROBLEM BEHAVIOURS<sup>28</sup></b>     | Direct violence prevention                         | Any intervention specifically aiming to reduce or eliminate violence. Examples would include dating violence programmes or programmes to reduce reactive aggression.  |
| <b>FAMILY AND CARER INTERVENTIONS</b>                 | Parent/main care giver(s) focused                  | Interventions that focus on addressing behaviours/attitudes/ outcomes for parental figures . Parenting skills would be categorised here.  |
|   | Family members focused                             | Interventions that target, or address, whole families and/or family systems, or include familial relationships outside the main carers. This is equivalent in care settings   |
| <b>SYSTEM APPROACHES</b>                              | Schools and service coordination and improvements  | Interventions pertaining any changes in the way services are delivered including developing service personnel or systems or procedures. Co-ordination between services in the same sector are captured here (e.g. transition between schools). Excluding justice system or contextual safeguarding specific activities. |
|   | Public health and multi- agency working approaches | Pertaining to changes in whole systems or multi agency working to promote maximal health for all (Public Health England, 2019). Co-ordination between services across sectors are captured here.  |
| <b>JUSTICE AND OPPORTUNITY-BASED CRIME PREVENTION</b> | Justice system interventions                       | Changes or adjustments to justice processes or interventions targeted at justice professionals and/or are conducted in justice settings such as prisons or police facilities.   |
|   | Opportunity based crime prevention                 | Interventions that increase risk/difficulty of committing a crime (Clarke, 1995). For our purposes this would include behaviour restrictions (e.g. curfews and ABSOs) as well as environmental factors (e.g. lighting and CCTV).  |

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## List of outcome categories and sub-categories

Outcomes are featured on the x-axis of the EGM. Below are the definitions of each subcategories included.

| OUTCOME DOMAIN       | OUTCOME SUB-DOMAIN   | DEFINITIONS   |
|----------------------|--|---|
| <b>CHILD-CENTRED</b> | Attitudes and beliefs                                      | Any attitude or belief relating directly to crime/aggression or identified risk and protective factors (e.g. violence ideation), offending attitudes, moral beliefs, and attitudes to school. For our purposes this includes goals and future aspirations.  |
|                      | Mental health, internalising behaviour and self-regulation | <p>Outcomes relating to managing emotions, impulses such anger management, ability to manage impulsivity and distractability and other mental health components, favorable or encouraging estimate or opinion/belief and attitude among oneself (e.g. self-esteem and self-worth). Mental health status and diagnoses are also included in this category. (Leo Bogee, 1998)</p> <p>Internalising behavior problems are described as inward occurrences, displaying as an inhibited style described as withdrawn, lonely, depressed, and anxious. (Patrick J. McGrath, 2015).</p> <p>Self-regulation refers to skills described above, outside of the mental health context, for example general anger management.</p> |
|                      | Social cognition, skills and pro social behaviour          | <p>Pertaining to understanding and relating to others. Including: empathy, attribution style, conflict resolution style. (Uta Frith, 2006)</p> <p>Outcomes related to improved interactive and communication skills with others in the society and community. Measures of an individual's social network (Maurice Kugler, 2015) and sense of connectedness.</p> <p>Pro-social behaviour are positive behaviours that children can engage in for example assisting with household or classroom tasks.</p>  |
|                      | Attainment and knowledge                                   | Outcomes relating to achievements (academic or extra-curricular), or measures of specific knowledge gained. E.g. Educational attainment, sports achievements or knowledge about knife crime. This includes cognitive outcomes such as memory and task switching, as well as age-dependent developmental measures.   |
|                      | Externalising and risk-taking behaviours                   | Any measure of externalising behaviours including aggression and rule breaking behaviour OR risk-taking behaviour such as gambling, running away, truancy and drug and alcohol use. (Guita Movallali, 2017)   |

| <b>OUTCOME DOMAIN</b>                      | <b>OUTCOME SUB-DOMAIN</b>                              | <b>DEFINITIONS</b>  |
|--|--|---|
| <b>CHILD-CENTRED</b>                       | Victimisation, abuse and injury                        | Any measure of individual victimisation including victim of crime, abuse/neglect, victim of bullying or harassment, an imminent risk of serious harm and/or relevant physical health outcomes such as wound severity or diagnoses (Barajas K., 2017)  |
|  | Service use, attendance and engagement                 | Any measures of participation in activities/services/community, including measures of involvement with activities/service's E.g. Service utilisation, involvement with family/peer activities, use of community activities, employment and classroom behaviour                                      |
| <b>FAMILY AND CARER OUTCOMES</b>           | Parental or main care giver outcomes                   | Measures specifically related to parental figures only e.g. employment, intimate partner violence, parental mental health outcomes (Kuhlthau K, 2010)   |
|  | Quality of family relationships and family functioning | Measures of attachment to/from any family member(s) or equivalent. This could also be related to perception of this bond.<br>Measures of household systems, climate, cohesion and ability to meet all basic needs for example: domestic abuse/witnessing abuse, familial conflict resolution style  |
| <b>PEER AND ADULT</b>                      | Peer outcomes  | Any measures of peer specific outcomes including beliefs, attitudes, behavior (Taheri, Amini , Delavari , Bazrafkan, & MazidiMoradi , 2019)   |
|  | Non-family relationships                               | Measures related to number of relationships, attachment or perception of bond between peers and non-family adults.  |
| <b>SCHOOL, PROFESSIONALS AND COMMUNITY</b> | School climate & performance                           | Measures of factors relating to perception of school environment e.g. School bullying, teacher engagement. OR measures of factors affecting school performance, as well as overall school performance reports including truancy/exclusion levels, school ranking and Ofsted reports. (Loukas, 2007) |
|  | Better services  | Any outcomes specific to any service provided, including access, availability etc.  |
|  | Effective service linkage                              | Any measure of successful referrals including numbers received and processed  |
|  | Social cohesion and neighbourhood perceptions          | Measure of belief/bonds and trust within a community. (Larsen, 2014) And/or any measures of perceived safety, crime levels etc  |
| <b>OFFENDING AND CRIME</b>                 | Violent offences                                       | Any measure or record of recognised violent crimes such as assault, murder/manslaughter, use of weapons, robbery at an individual and community level (NIJ)   |
|  | Serious non-violent offences                           | Any measure or record of recognised serious crime that is not violent like drug dealing. At an individual or community level.   |
|  | Other offences   | Any measure or record of undifferentiated offences, total offences including for individuals and communities, and offences not included above.  |
| <b>CHILD-CENTRED</b>                       | Antisocial and 'delinquent' behaviour                  | Any measure or record of acting/behaviour that is likely to cause alarm or distress over a period of time (Shelter Scotland)  |
|  | Contact with justice system/any custody service        | Any measure or record of contact with any teams of services within the criminal justice or custody service  |

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## Process insights description

Process insights also appear on the x-axis after the outcomes discussed above. Below please find a description sub-categories included in the process insight domains.

### Process insights

| COLUMN HEADING       | DESCRIPTION  |
|----------------------|--|
| Intervention details | Intervention design features (i.e. what details of what is being delivered)  |
| Theory of change     | Theory of change for the intervention (i.e. how the intervention achieves its aim(s) in theory)  |
| Implementation       | Barriers and facilitators (i.e. what helps and/or hinders when delivering an intervention in practice)   |
| Cost                 | Cost analysis (CA), Cost-Benefit-Analysis (CBA) and cost data (i.e. if the study contained any information about the cost of the intervention or featured any types of cost analysis). |

## Annex 6: Types of studies which the EGM may not have captured

Currently the EGM only features studies that measure outcomes for children and young people. However, it is important to note that this means that crime and violence interventions which may also affect children and young people but do not specifically report outcomes for children and young people, have been excluded. A number of current gaps in the EGM may be at least partially impacted by this issue, including opportunity based crime prevention and systems approaches, often collectively called “place-based interventions”. Table 4 below offers a classification of such studies.

Table 4 Types of intervention the current EGM may miss

| TYPE                              | DEFINITION  | EXAMPLES  |
|-----------------------------------|---|---|
| Built environment                 | Reduce the opportunities for crime by physical features of the built environment                | Streetlighting<br>Closing streets and alleys with gates or bollards<br>Closed-circuit television (CCTV) |
| Policing strategies               | Policing approaches which are focused on a particular place, including community policing       | Stop and search<br>Street level drug enforcement  |
| Community and citizen initiatives | Interventions organised by community members  | Neighbourhood watch<br>Guardian Angels  |
| Public health approaches          | Coordinated response from public and social services to provide early, preventive interventions | Glasgow model   |

## Annex 7 Screening tool

Below is the tool that the reviewers looking at the individual studies used to decide whether the study would be featured in the EGM or not. This tool is based on the inclusion and exclusion criteria discussion in the 'developing the specification of the EGM' section.

|     |   |     |                 |
|-----|---|-----|-----------------|
| 1.  | Is the paper in English?  | No  | Exclude         |
|     |   | Yes | Continue to q2  |
| 2.  | Is the paper about an intervention intended to modify the behaviour or attitudes, either directly or indirectly, of children up to the age of 17 <sup>29</sup> or their parents/caregivers or professionals with whom they interact?  | No  | Exclude         |
|     |   | Yes | Continue to q3a |
| 3.a | Is the paper a quantitative evaluation reporting measures of eligible outcomes compared to the outcomes (1) in a comparison group (either with or without baseline outcome measures), (2) before versus after with no comparison group, or (3) a systematic review <sup>30</sup> of such studies? | No  | Continue to q3b |
|     |   | Yes | Continue to q4  |
| 3.b | Is the paper a qualitative process evaluation describing intervention design or implementation, or an analysis of intervention costs?   | No  | Exclude         |
|     |   | Yes | Include (END)   |
| 4.  | Do the outcomes include measures of attitudes, beliefs or behaviour of children, professionals or parents?  | No  | Exclude         |
|     |   | Yes | Include         |

29 Age is at the time of intervention, not outcome measurement (which can occur much later from when the intervention was provided). At least 50% of intervention group aged <= 17. If not clear include if intervention is relevant to 10-14 years of age

30 To qualify as a systematic review the review must have: (i) a clearly stated PICOS, (ii) a comprehensive search strategy, (iii) explicit inclusion and exclusion criteria for screening; and (iv) systematic coding and reporting of all outcomes covered by the PICOS.

## Annex 8 Sample Search Strings

Examples of the times of search terms used to find studies in scientific databases are given below.

### 1. APA PsycInfo (Ovid) <1806 to May Week 4 2020> Draft search 1st June 2020

1. (adolescen\* or boy\* or child\* or girl\* or grader\* or infant\* or junior\* or juvenile\* or kindergarten or minors or paediatric\* or pediatric\* or postpubert\* or postpubescen\* or preadolescen\* or prepubert\* or prepubescen\* or preschool\* or preteen\* or pubert\* or pubescen\* or school\* or teen\* or toddler\* or youngster\* or "young people" or "young person\*" or "young population\*" or youth\*).ti,ab. (1175979)
2. (delinquen\* or violen\* or bully\* or bullies or crime\* or offend\* or recidivis\* or reoffen\* or (law\* adj2 (break\* or breach\* or violat\* or contraven\* or infring\* or transgress\*)) or lawbreaking or unlawful\* or criminality or misdemeanor\*).ti,ab. (165637)
3. 1 and 2 (73037)
4. "Juvenile Delinquency"/ or predelinquent youth/ (17541)
5. 3 or 4 (76903)
6. exp Adolescent Behavior/ or exp Adolescent Psychopathology/ (5698)
7. exp Child Behavior/ or exp Child Psychopathology/ (3357)
8. exp Behavior Change/ or exp Self-Destructive Behavior/ or exp Behavior Modification/ or exp Aggressive Behavior/ or exp Adaptive Behavior Measures/ or exp Disruptive Behavior Disorders/ or exp Criminal Behavior/ or self control/ or antisocial behavior measures/ or antisocial behavior/ or classroom behavior/ (295583)
9. (behavio\* or psychopatholog\* or "mental health" or "self control" or antisocial or (school\* adj3 exclu\*) or "conduct problem\*").ti,ab. (1123170)
10. or/6-9 (1280990)
11. "Prevention"/ or "Crime Prevention"/ or exp Primary Mental Health Prevention/ or exp Drug Abuse Prevention/ or "School Based Intervention"/ or cognitive therapy/ (69505)
12. (prevent\* or mitigat\* or counteract\* or avoid\* or restrain\* or reduc\* or lessen\* or "cognitive behavio\*" or CBT).ti. (109480)
13. 11 or 12 (153456)
14. ("emotional support" or "social support" or mentor\* or "life skill\*" or vocational or sport\* or communit\* or educat\* or school\* or music\* or well-being or "well being").ti,ab. (1088511)
15. Support Groups/ or Social Support/ or mentor/ or role models/ or exp Skill Learning/ or exp Social Skills Training/ or vocational education/ or music/ or athletic participation/ or school environment/ or communities/ or well being/ (159603)
16. 14 or 15 (1114188)
17. 5 and 10 and 13 and 16 (4463)
18. bullying or bully or bullies or gang\* or "crim\* network\*" or exploit\* or safeguard\* or alcohol or drinking or drug or drugs).ti,ab. (350124)
19. bullying/ or cyberbullying/ or emotional abuse/ or physical abuse/ or school violence/ or teasing/ or exp Aggressive Behavior/ or exp Disruptive Behavior Disorders/ (162985)

20. gangs/ or juvenile gangs/ (1730)
21. alcohol abuse/ or "alcohol use disorder"/ or binge drinking/ or underage drinking/ (21799)
22. drug abuse/ or "substance use disorder"/ or inhalant abuse/ or polydrug abuse/ or drug abuse liability/ or drug abuse prevention/ or drug seeking/ (55529)
23. or/18-22 (512453)
24. 5 and 10 and 13 and 23 (4614)
25. family/ or dysfunctional family/ or "family and parenting measures"/ or exp Family Crises/ or exp Family Conflict/ or exp Family Intervention/ (57764)
26. caregivers/ or caregiver burden/ or caring behaviors/ (31800)
27. parenting/ or parental involvement/ or parenting skills/ or parental attitudes/ or parent training/ (40284)
28. (family or families or parent\* or carer\* or caregiver\*).ti,ab. (562872)
29. or/25-28 (572599)
30. 5 and 10 and 13 and 29 (1995)
31. schools/ or school environment/ or college environment/ or integrated services/ or community services/ or community welfare services/ or outreach programs/ or mental health services/ or child guidance clinics/ or community mental health centers/ or social services/ (108947)
32. (((school\* or (integrated or multi-agency or community or "mental health" or social)) adj2 service\*) or outreach or ((child or adolescent) adj2 guidance)).ti,ab. (59342)
33. or/31-32 (142916)
34. 5 and 10 and 13 and 33 (1385)
35. "Juvenile Justice"/ or criminal justice/ or crime prevention/ or "Criminal Rehabilitation"/ (15627)
36. (justice or judicial or court or courts or (law adj3 enforc\*) or prison\* or police or policing or ASBO\* or "antisocial behavio\* order\*" or "electronic tag\*" or curfew\*).ti,ab. (109132)
37. or/35-36 (113129)
38. 5 and 10 and 13 and 37 (1342)
- 39.17 or 24 or 30 or 34 or 38 (**5876**)

## **2. Scopus – Draft search 2nd June 2020**

```
( ( ( TITLE-ABS ( ( adolescen* OR boy* OR child* OR girl* OR grader* OR infant* OR junior*
OR juvenile* OR kindergarten OR minors OR paediatric* OR pediatric* OR postpubert* OR
postpubescent* OR preadolescent* OR prepubert* OR prepubescent* OR preschool* OR
preteen* OR pubert* OR pubescent* OR school* OR teen* OR toddler* OR youngster* OR
"young people" OR "young person*" OR "young population*" OR youth* ) ) ) AND ( TITLE-ABS (
( delinquent* OR violent* OR bully* OR bullies OR crime* OR offend* OR recidivist* OR reoffen*
OR ( law* W/2 ( break* OR breach* OR violat* OR contraven* OR infring* OR transgress*
) ) ) OR lawbreaking OR unlawful* OR criminality OR misdemeanor* ) ) ) ) AND ( TITLE-ABS (
( behavio* OR psychopatholog* OR "mental health" OR "self control" OR antisocial OR (
school* W/3 exclu* ) OR "conduct problem*" ) ) ) AND ( TITLE-ABS ( prevent* OR mitigat* OR
counteract* OR avoid* OR restrain* OR reduc* OR lessen* OR "cognitive behavio*" OR cbt )
```

) ) AND ( ( TITLE-ABS ( ( "emotional support" OR "social support" OR mentor\* OR "life skill\*" OR vocational OR sport\* OR communit\* OR educat\* OR school\* OR music\* OR well-being OR "well being" ) ) ) OR ( TITLE-ABS ( ( bullying OR bully OR bullies OR gang\* OR "crim\* network\*" OR exploit\* OR safeguard\* OR alcohol OR drinking OR drug OR drugs ) ) ) OR ( TITLE-ABS ( family OR families OR parent\* OR carer\* OR caregiver\* ) ) OR ( TITLE-ABS ( ( school\* OR ( integrated OR multi-agency OR community OR "mental health" OR social ) ) W/2 service\* ) ) OR outreach OR ( ( child OR adolescent ) W/2 guidance ) ) ) OR ( TITLE-ABS ( justice OR judicial OR court OR courts OR ( law W/3 enforc\* ) OR prison\* OR police OR policing OR asbo\* OR "antisocial behavio\* order\*" OR "electronic tag\*" OR curfew\* ) ) ) AND ( LIMIT-TO ( SUBJAREA , "PSYC" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) OR LIMIT-TO ( SUBJAREA , "HEAL" ) OR LIMIT-TO ( SUBJAREA , "MULT" ) - 5824

### **3. Social Sciences Citation Index (Web of Science)**

# 13 9,439

#11 AND #5 AND #4 AND #3

Refined by: WEB OF SCIENCE CATEGORIES: ( PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH OR PSYCHIATRY OR SOCIAL ISSUES OR PSYCHOLOGY DEVELOPMENTAL OR CRIMINOLOGY PENOLOGY OR FAMILY STUDIES OR PSYCHOLOGY CLINICAL OR SOCIAL WORK OR PSYCHOLOGY MULTIDISCIPLINARY OR SUBSTANCE ABUSE OR PSYCHOLOGY EDUCATIONAL OR EDUCATION EDUCATIONAL RESEARCH OR PSYCHOLOGY SOCIAL OR PSYCHOLOGY APPLIED OR PSYCHOLOGY OR SOCIAL SCIENCES INTERDISCIPLINARY OR LAW OR SOCIOLOGY OR MULTIDISCIPLINARY SCIENCES OR EDUCATION SCIENTIFIC DISCIPLINES OR EDUCATION SPECIAL OR BEHAVIORAL SCIENCES OR REHABILITATION )

Indexes=SSCI Timespan=1970-2020

# 12 10,709

#11 AND #5 AND #4 AND #3

# 11 1,918,263

#10 OR #9 OR #8 OR #7 OR #6

# 10 187,214

TS=(justice or judicial or court or courts or (law NEAR/3 enforc\*) or prison\* or police or policing or ASBO\* or "antisocial behavio\* order\*" or "electronic tag\*" or curfew\*)

# 9 63,666

TS=(( (school\* or (integrated or multi-agency or community or "mental health" or social) ) NEAR/2 service\*) or outreach or ((child or adolescent) NEAR/2 guidance))

# 8 484,029

TS=(family or families or parent\* or carer\* or caregiver\*)

# 7 339,961

TS=(bullying or bully or bullies or gang\* or "crim\* network\*" or exploit\* or safeguard\* or alcohol or drinking or drug or drugs)

# 6 1,226,593

TS=(“emotional support” or “social support” or mentor\* or “life skill\*” or vocational or sport\* or communit\* or educat\* or school\* or music\* or well-being or “well being”)

# 5 797,590

TS=(prevent\* or mitigat\* or counteract\* or avoid\* or restrain\* or reduc\* or lessen\* or “cognitive behavio\*” or CBT)

# 4 970,740

TS=(behavio\* or psychopatholog\* or “mental health” or “self control” or antisocial or (school\* NEAR/3 exclu\*) or “conduct problem\*”)

# 3 64,307

#2 AND #1

# 2 187,516

TS=(delinquen\* or violen\* or bully\* or bullies or crime\* or offend\* or recidivis\* or reoffen\* or (law\* NEAR/2 (break\* or breach\* or violat\* or contraven\* or infring\* or transgress\*)) ) or lawbreaking or unlawful\* or criminality or misdemeanor\*)

# 1 1,055,735

TS=(adolescen\* or boy\* or child\* or girl\* or grader\* or infant\* or junior\* or juvenile\* or kindergarten or minors or paediatric\* or pediatric\* or postpubert\* or postpubescen\* or preadolescen\* or prepert\* or prepubescent\* or preschool\* or preteen\* or pubert\* or pubescen\* or school\* or teen\* or toddler\* or youngster\* or “young people” or “young person\*” or “young population\*” or youth\*)

## **Annex 9 Details of additional searches**

In addition to scientific databases, searches were conducted on websites and were searched for by hand in a number of journals. Experts were also consulted to reduce the possibility that relevant studies were not featured in the EGM. Further details about this process can be found below, including examples of websites and journals that were consulted.

### **Websites**

In addition to electronic studies, over 50 websites and publications were searched including:

- ◆ Incredible Years Library <http://www.incredibleyears.com/research-library/>
- ◆ National Institute on Drug Abuse (NIDA) <http://www.nida.nih.gov/nidahome.htm>
- ◆ The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)  
<http://www.emcdda.europa.eu/index.cfm>
- ◆ National Council for Crime Prevention (Sweden)  
<https://www.bra.se/bra-in-english/home.html>
- ◆ US Office of Juvenile Justice and Delinquency Prevention
- ◆ UK College of Policing
- ◆ UK Home Office
- ◆ Substance Abuse and Mental Health Services Administration (SAMHSA)  
<http://www.samhsa.gov/>
- ◆ Google
- ◆ Google Scholar

### **Hand-searched journals**

Whilst the database search should identify relevant articles in published journals more recent publications may be not be included on account of indexing delays. Therefore, hand searches were also conducted on the table of contents of the last five years of the following journals:

*Addiction*

*Aggression and Violent Behavior*

*American Journal on Drug & Alcohol Abuse*

*Child Development*

*Child Welfare*

*Criminal Justice and Behavior*

*Criminology*

*Criminology and Public Policy*

*Developmental Psychology*

*Drug and Alcohol Dependence*

*International Journal on Violence and Schools*

*Journal of Child & Adolescent Substance Abuse*  
*Journal of Clinical and Adolescent Psychology*  
*Journal of Consulting and Clinical Psychology*  
*Journal of Drug Education*  
*Journal of Emotional Abuse*  
*Journal of Experimental Criminology*  
*Journal of Gang Research*  
*Journal of Interpersonal Violence and Child Abuse and Neglect*  
*Journal of School Health*  
*Journal of Social Work Practice in the Addictions*  
*Journal of Substance Abuse Treatment*  
*Journal of Youth and Adolescence*  
*Justice Quarterly*  
*Psychology, Crime and Law*  
*Psychology in the Schools*  
*Psychology, Crime and Law*  
*Research on Social Work Practice*  
*South African Crime Quarterly*  
*South African Journal of Criminal Justice*  
*Victims and Offenders*  
*Violence and Victims*

### **Contacting researchers**

We sent copies of a preliminary version of the EGM to selected authors of included studies, which serves both a dissemination purpose and to invite submission of additional studies.

## **Annex 10 Coding form**

After deciding that a study will be featured in the EGM a reviewer will need to identify the key information about the study and put the information in a database (a place that stores information, in this case it is the Eppi Reviewer 4 platform also used to create the EGM). Reviewers would identify bibliographic information, intervention types, outcome types and filter specific information from each study. A list of what information is noted is listed under each section below.

### **Bibliographic information**

The information below was collected for all studies:

**Title**

**Authors**

**Year**

**Journal name/report series**

**URL/DOI**

### **Interventions**

The type of intervention was also noted for each study. The options are presented below. Ideally, each singular intervention would be categorised under one intervention type. This is mainly based on what the most prominent feature of the intervention was i.e. what was most important element is, or what the majority of the time in the intervention was dedicated to. Where there may be multiple components that were key (i.e. equally important or time intensive), multiple interventions were coded for a single intervention, though reviewers did try to avoid this wherever possible to reduce duplication. Sometimes studies featured more than one separate interventions, in this case all interventions featured would be categorised by type again resulting in multiple intervention type codes for a single study.

| INTERVENTION CATEGORY                 | INTERVENTION SUB-CATEGORY                         |
|---------------------------------------|---|
| <b>SUPPORTING POSITIVE BEHAVIOURS</b> | Mental health and therapeutic interventions       |
|                                       | Mentoring programmes                              |
|                                       | Educational and vocational interventions          |
|                                       | Sports, recreation and clubs                      |
|                                       | Social and emotional interventions                |
|                                       | Practical life skills                             |
| <b>ADDRESSING PROBLEM BEHAVIOURS</b>  | 'Gang' and criminal network interventions         |
|                                       | Child exploitation and contextual safeguarding    |
|                                       | Alcohol and Drug interventions                    |
|                                       | Anti-bullying interventions                       |
|                                       | Direct violence prevention                        |
| <b>FAMILY AND CARER INTERVENTIONS</b> | Parents/main care giver(s) focused                |
|                                       | Family members focused                            |
| <b>SYSTEM APPROACHES</b>              | Schools and service coordination and improvements |
|                                       | Public health and multi-agency working approaches |
| <b>CRIME AND JUSTICE</b>              | Justice system interventions                      |
|                                       | Opportunity-based crime prevention                |

## Outcomes

Every study included was also categorised under any outcome(s) that were reported either in the analysis and/or that were intended to be investigated as per the aims of the study. For process insights 'outcomes' users were directed to the page number of the relevant detail intext and coded under that

| OUTCOME DOMAIN                             | OUTCOME SUB-DOMAIN   |
|--|--|
| <b>CHILD-CENTRED</b>                       | Attitudes and Beliefs                                      |
|  | Mental health, internalising behaviour and self-regulation |
|  | Social cognition, skills and connectedness                 |
|  | Attainment and knowledge                                   |
|  | Externalising and risk-taking behaviour                    |
|  | Victimisation, abuse and injury                            |
| <b>FAMILY AND CARER OUTCOMES</b>           | Service use, Attendance and engagement                     |
|  | Parental / main care giver outcomes                        |
| <b>PEER AND ADULT</b>                      | Quality of family relationships and family functioning     |
|  | Peer outcomes  |
| <b>SCHOOL, PROFESSIONALS AND COMMUNITY</b> | Quantity and quality of (non-family) relationships         |
|  | School climate & performance                               |
|  | Better services  |
|  | Effective service linkage                                  |
| <b>OFFENDING AND CRIME</b>                 | Social cohesion and neighbourhood perceptions              |
|  | Violent offences   |
|  | Serious non-violent offences                               |
|  | Other offences   |
|  | Antisocial and 'delinquent' behaviour                      |
| <b>PROCESS INSIGHTS</b>                    | Contact with custody services or justice system            |
|  | Intervention details                                       |
|  | Theory of change   |
|  | Implementation   |
|  | Cost   |

## Filters

Finally, certain additional information was also captured from each study included in the EGM so that users can find relevant studies more quickly (i.e. so that user can filter studies). The filters used in the EGM are listed below.

| FILTER CATEGORY                                   | FILTER SUB-CATEGORIES  |
|---|--|
| <b>UNIT OF DELIVERY</b>                           | Individual, couple or group  |
| <b>LOCATION/SETTING</b>                           | Remote, community, school, secure residence, family or foster home, care home, custody   |
| <b>LEVEL OF TARGETING</b>                         | Universal, targeted  |
| <b>AGES</b>                                       | 0-3, 4-9, 10-14, 15-17   |
| <b>COUNTRY</b>                                    | Any noted  |
| <b>POINT OF INTERVENTION</b>                      | Primary, secondary, tertiary, multiple   |
| <b>TARGET GROUP OF INTERVENTIONS:</b>             | Infants (0-3), Child (4-9), Adolescent (10-14), Child/Youth age not reported, Parents/carers, Family (including wider family and significant adults), Professionals (e.g. teachers), gangs, looked-after children, race-specific targeting, children with disabilities |
| <b>KEY PROFESSIONALS INVOLVED IN INTERVENTION</b> | Health and social care workers, therapist/counsellors, teachers, law enforcement, probation services, prison officers, community voluntary sector (CVS) workers, others  |
| <b>STUDY DESIGN</b>                               | RCT, matched comparison, interrupted time series, IV (instrumental variable)/other regression, systematic review/meta-analysis, pre-post.  |
| <b>DEMOGRAPHICS</b>                               | Male, Female, Non-binary, Both, Gender not reported  |
|   | BAME: Mainly/exclusively (80%), Partly, None, Not clear  |
| <b>REGION</b>                                     | East Asia and pacific, Europe and Central Asia, Latin America and Caribbean, North America, Middle East and North Africa, Sub-Saharan Africa, South Asia   |
| <b>STUDY QUALITY AND TYPE</b>                     | High and medium quality evaluations, low quality evaluations, high and medium quality systematic reviews, low quality systematic review  |
| <b>QUALITY OF IMPACT EVALUATION</b>               | High, medium, low  |
| <b>QUALITY OF PROCESS EVALUATION</b>              | High, medium, low  |
| <b>QUALITY OF SYSTEMATIC REVIEW</b>               | High, medium, low  |
| <b>STATUS OF STUDY</b>                            | Completed, ongoing   |
| <b>DECade OF STUDY</b>                            | 1970-1979, 1980-1989, 1990-1999, 2000-2009, 2010-2020  |

## Annex 11: Other filter tables

In addition to the figures discussed in the main report, data is available on the number of studies for each filter options. The options that are not discussed in the main report can be viewed below.

| <b>UNIT OF DELIVERY</b>   | <b>NUMBER OF STUDIES</b> |
|---------------------------|--------------------------|
| Individual                | 699                      |
| Group (including couples) | 1513                     |

Note: Number of studies do not sum up to the total number of studies as studies/systematic review may be based on both unit of deliveries

| <b>LOCATION/SETTING</b> | <b>NUMBER OF STUDIES</b> |
|-------------------------|--------------------------|
| Remote                  | 72                       |
| Community               | 709                      |
| School                  | 1021                     |
| Secure residence        | 50                       |
| Family or foster home   | 309                      |
| Care home               | 37                       |
| Custody                 | 191                      |

Note: Number of studies do not sum up to the total number of studies as individual study/systematic review may be based on more than one location/setting

| <b>LEVEL OF TARGETING</b> | <b>NUMBER OF STUDIES</b> |
|---------------------------|--------------------------|
| Universal                 | 887                      |
| Targeted                  | 1167                     |

Note: Number of studies do not sum up to the total number of studies/systematic review as studies may be based on both universal and targeted group

| <b>AGES</b> | <b>NUMBER OF STUDIES</b> |
|-------------|--------------------------|
| 0–3 years   | 212                      |
| 4–9 years   | 641                      |
| 10–14 years | 1358                     |
| 15–17 years | 1034                     |

Note: Number of studies do not sum up to the total number of studies as studies may be based on more than one target group of interventions

| <b>KEY PROFESSIONALS INVOLVED IN INTERVENTION</b> | <b>NUMBER OF STUDIES</b> |
|---|--------------------------|
| Health and social care workers                    | 430                      |
| Therapist/counsellors                             | 592                      |
| Teachers  | 588                      |
| Law enforcement                                   | 160                      |
| Probation services                                | 63                       |
| Prison officers                                   | 34                       |
| Community voluntary sector (CVS) workers          | 103                      |
| Others  | 801                      |

| <b>TARGET GROUP OF INTERVENTIONS</b>                   | <b>NUMBER OF STUDIES</b> |
|--|--------------------------|
| Infants (0-3)  | 127                      |
| Child (4-9)  | 538                      |
| Adolescent (10-14)                                     | 1276                     |
| Adolescent (15-17)                                     | 980                      |
| Child/Youth age not reported                           | 195                      |
| Parents/carers   | 545                      |
| Family (including wider family and significant adults) | 124                      |
| Professionals (e.g. teachers)                          | 121                      |
| Gangs  | 17                       |
| Looked-after children                                  | 16                       |
| Race-specific targeting                                | 15                       |
| Children with disabilities                             | 26                       |

| <b>DEMOGRAPHICS</b> | <b>NUMBER OF STUDIES</b> |
|---------------------|--------------------------|
| Male                | 144                      |
| Female              | 99                       |
| Non-binary          | 6                        |
| Both                | 1521                     |
| Gender not reported | 310                      |

Note: Number of studies do not sum up to the total number of studies as studies/systematic reviews may include different combination of gender.

| <b>BAME</b>            | <b>NUMBER OF STUDIES</b> |
|------------------------|--------------------------|
| Mainly/Exclusive (80%) | 239                      |
| Partly                 | 824                      |
| None                   | 459                      |
| Not clear              | 625                      |

