Public Health Scotland

What factors are associated with self-harm in childhood?

Supporting technical document

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Contents

Background

Public Health Scotland's Evidence for Action Team supports the effective, robust and systematic use of evidence. We do this by developing products that enable decision-makers to make the most effective decisions and to influence positive change in the health and wellbeing of the people of Scotland.

This study was conducted as part of the pilot phase of a project to develop online interactive evidence tools. These are designed to highlight what is already known on key public health questions and identify where there are gaps to inform future research. The tools include evidence and gap maps (EGMs) and intervention tools as defined by **the Campbell Collaboration**.

EGMs consolidate what we know and do not know about 'what works' by providing a graphical display of public health issues with strong, weak or non-existent evidence. A typical map is a matrix of exposure or intervention categories (rows) and outcomes (columns). The benefits of EGMs are that they present evidence in a visual, interactive and readily updated form.

Consultation with a range of stakeholders identified self-harm in children and young people as a key public health priority. The Scottish Government is conducting the exploratory phase of their self-harm prevention strategy development, including an exercise to understand existing data and evidence in this area.

Therefore, we carried out a review of review-level evidence on self-harm in children and young people to provide data for the first phase of the online evidence tools development project. Limiting the review to review-level studies enabled us to focus on the most robust sources of evidence while providing a manageable data set. This allowed us to engage stakeholders with a pilot evidence tool as early as possible in the development process.

Research questions

The research questions we sought to answer were:

- What risks and protective factors are associated with self-harm without suicidal intent in children?
- What policies and interventions might be effective in the primary prevention of non-suicidal self-harm in children?

Methods

Systematic methods were used to identify and critically appraise both peer-reviewed and grey review-level literature. A literature search of six electronic bibliographic databases (Medline, Proquest, Social Policy and Practice, Scopus, CINAHL, PsycINFO) was undertaken to identify studies that were published from the inception of each database to 28 October 2021. An advanced Google search for the same time period was undertaken to identify non-peer-reviewed grey literature. Searches were restricted to the English language.

Search terms for peer-reviewed and grey literature included the terms ‘self-harm’, ‘children’ and ‘review’ as well as variations of these. Full details of search terms can be found in Appendix 1.

Screening and inclusion criteria

In total, 725 peer-reviewed and 35 grey review-level studies were identified, after removal of duplicates (See PRISMA diagram in Appendix 2).

Inclusion and exclusion criteria were tested on the first 100 records and then reviewed by the project team to compare decisions and check consistency of approach. Subsequently, title and abstract screening and full-text screening were carried out in **Covidence** (an online management system used to conduct systematic

reviews) by two researchers. Any conflicts were resolved by discussion with a third researcher.

The following inclusion criteria were applied:

- Children and young people aged 0–18 years living in high-income countries as defined by the Organisation for Economic Co-operation and Development (OECD) countries. We assumed that 'children' and 'adolescents' fitted within our inclusion criteria. Where age information was available, most of the study sample should be under 18 years using mean or median age or include age-stratified findings. Studies were limited to those conducted in high-income countries to ensure the findings were relevant in a Scottish context.

- Population samples were drawn from community and/or general population, thereby excluding those presenting at or referred to a clinical setting.

- Population subgroups as specified in **equalities legislation** were also included.

- For reviews of exposure studies, risk or protective factors were categorised according to the domains and constructs identified in the **PHS children and young people mental health indicator set**:

    - **structural**: equality, poverty and material deprivation, social inclusion, stigma and discrimination, physical environment, societal optimism, exposure to harm

    - **community**: respect of young people, engagement in local activities, social support, safety, belonging

    - **learning environment**: engagement with learning, educational environment, pressures and expectations

    - **family and relationships:** family relations, parental health, peer and friend relationships

    - **individual factors:** health behaviours, general health status, social media, body image, perinatal environment, and learning and development

- For reviews of interventions, policies or interventions that affect children's exposure to risk (or protective) factors relating to one or more of the mental health construct domains were included. Interventions and policies had to be focused on primary prevention of self-harm in childhood to ensure a population health approach.

- For exposure and intervention studies, a comparison/control group was required as well as adjustment for key confounders.

- Outcomes were limited to self-reported self-harm without suicidal intent. Terms could include self-harm without suicide attempt, non-suicidal self-injury (NNSI), and deliberate self-harm (DSH) without suicidal intent. Studies were only included if non-suicidal self-injury could be differentiated from other outcomes. Studies reporting self-harm with suicidal intent exclusively or mixed outcomes were excluded.

- Systematic reviews and/or meta-analyses, including primary studies of the following designs, were considered to be eligible: prospective cohort studies, cross-sectional studies, randomised controlled trials and natural experiments. Other structured reviews including scoping reviews and rapid evidence reviews were also considered to be eligible, provided the methodology was described.

Where reviews included primary studies with a mix of populations (e.g. clinical and community samples), outcomes (e.g. DSH with and without suicide attempts) or OECD and non-OECD countries, reviews were only included if at least two primary studies met the inclusion criteria.

A total of 15 reviews were identified for data extraction and inclusion in the pilot EGM and the self-harm briefing paper. The PRISMA diagram can be found at Appendix 2.

Data extraction and quality appraisal

The first step of data extraction was to determine the relevance of the study findings to our specific research questions, where reviews included primary studies with mixed populations or outcomes. Only reviews that were synthesised in a way that enabled us to identify findings specifically relevant to our populations and outcomes of interest were included for data extraction.

Data were extracted in Covidence using templates for the following variables: aim; total number of primary studies; total number of relevant studies; definition of self-harm; evidence of in-scope synthesis; type of study (association/intervention); population (general, at risk, protected characteristics); stage of development (infant 0–4 years, childhood 5–9 years, adolescent 10–19 years; generic 'young people', other); construct domain and definition; outcome scale, study design; nature of underlying studies; author conclusions; and direction of effect.

Critical appraisal of reviews employed the **risk of bias in systematic reviews** (ROBIS) tool and was undertaken on reviews with in-scope synthesis retained after full-text screening. Some modifications were made to the tool. For example, studies without a published protocol were not rated as being at high risk of bias, provided they adhered to the **PRISMA statement checklist.** Additionally, reviews that only searched for and included primary studies published in English were not deemed high risk. Overall study quality was categorised as high, low or unclear risk of bias.

Data extraction and critical appraisal were undertaken independently by two reviewers using Covidence software and a third reviewer was used to reach consensus on any conflicts.

Appendix 1: Detailed search terms

Table 1: Detailed search terms

Concept	Search terms	Note
Child (0–18)	Infant or infants Toddler* Child or child's Children Childhood Teen* Adolescen* Juvenile* Minors School* Young Youth* Early year* Pediatric* Paediatric* CAMHS*	Search fields: title, abstract, keyword, subject heading (MeSH), journal title
Self-harm	Self-injurious behavior/ [MeSH] Self Mutilation/ [MeSH] Auto mutilat* / automutilat* Cutt* Head bang* or head bang* Self within 2 words of cut* Self destruct* or selfdestruct* Self harm* or selfharm* Self immolat* or selfimmolat* Self inflict* or selfinflict* Self injur* or selfinjur* Self mutilat* or selfmutilat* Self poison* or selfpoison	Search terms taken from Cochrane Review on Interventions for self-harm in children and adolescents: **/www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012013/appendices#CD012013-sec-0225** Search fields: MeSH, title, abstract, keyword

Concept	Search terms	Note
Review	Systematic review* Meta-analy* / metaanaly* Rapid review* Scoping review* Mixed methods review* Umbrella review* Review of Reviews State of the Art Review Evidence summar* Evidence synthes* Systemized review* Systemised review* Systemic search	Search terms taken from list of review types (Grant, Booth 2009): **https://onlinelibrary.wiley.com/doi/10.1111/j.1471-1842.2009.00848.x** Search fields: title, abstract, keyword, publication type, subject heading (MeSH)

Appendix 2: PRISMA diagram

Figure 1: PRISMA diagram