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Content and activity that is harmful to children within scope of the Online Safety Bill

A Rapid Evidence Assessment

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Content warning

Please note that sensitive content is discussed throughout this review, including self-harm, suicide, and eating disorders, which some readers may find distressing.

Executive summary

Background

The [Online Safety Bill](#) was introduced to the UK parliament in March 2022. The Bill establishes duties on services in scope to improve the safety of their users. This includes a requirement for services to tackle and remove illegal material, as well as to ensure that children are protected from being exposed to harmful content and activity.

Within this context, the Department for Digital, Culture, Media and Sport (DCMS) commissioned the National Centre for Social Research (NatCen) and City, University of London, to carry out a rapid evidence assessment (REA) to provide a synthesis of evidence on content and activity that is harmful to children on services within scope of the Online Safety Bill.

Aims and objectives

The purpose of this REA was to provide an overview of available evidence on the risks to children from harmful content and activity on services in scope of the Online Safety Bill. This included a synthesis of evidence on the definition, prevalence and impacts of harmful content and activity, as well as any variation amongst different groups of children, including children of different age groups, genders, ethnicities, religions, sexual orientations and social backgrounds.

The review focused on harmful content and activity, the scope of which was guided by the harms listed in the Online Harms White Paper. This included cyberbullying, pornography, violent content, pro-self-harm content, pro-suicide content, and content which could give rise to eating disorders. It also focused on emerging or lesser researched harmful content and activity. Content and activity which is illegal in the UK was excluded from the scope of this review. This is because the review was intended to inform the provisions on content which is harmful to children in the Online Safety Bill; illegal content and activity is addressed under separate provisions in the Bill.

Methodology

The review was undertaken using a rapid evidence assessment (REA) design. This comprised of four key stages:

1. **Literature searching and screening stage** to identify the nature, availability and range of evidence relevant to the review.
2. **Supplementary literature searching and screening** to identify the nature, availability and range of evidence on lesser researched and emerging content and activity. This was supplemented through a review of relevant platforms' policies on content regulation and the prevention of harm.
3. **Critical evaluation stage** to evaluate the quality of evidence.
4. **Extraction and synthesis stage** to extract and summarise data thematically.

During the critical evaluation stage, studies were scored using a Weight of Evidence (WoE) tool developed by NatCen to assess relevance to the research questions and quality of research. Once scored, approximately 100 studies were prioritised for full review by a panel of researchers based on the WoE score and contribution to the evidence base.

Scope of the review

Due to the limited timeframe in which this review was conducted, strict criteria were used to prioritise evidence for inclusion. This included a focus on:

- evidence published from 2011 onwards,
- studies which included UK data,
- peer-reviewed academic studies that are published or are in print, with inclusion of grey literature in subject areas with a more limited evidence base, and
- evidence available in the English language only.

Key findings

The evidence base

Overall, this review found that while there is a high-volume of research focused on online harms generally (as evidenced by high returns at the initial literature searching stage), much of that research falls out of the specific scope of this review. This is for several reasons. Firstly, much of the research is international and does not provide or disaggregate UK data. Secondly, there is a lack of primary research that focuses specifically on the prevalence and impacts of content and activity on children and young people in the UK. This is largely due to ethical challenges of conducting research with children and young people across much of the content and activity in scope of this review.

This review also identified an uneven evidence base, with a considerable amount of evidence on cyberbullying and pornography, and much less on online content promoting eating disorders, self-harm and suicide and other online harms. The evidence base also has several methodological limitations. These include a lack of consistency in the definition of content and activity being investigated; a lack of consistency in the measurement of prevalence and impact; variable definitions of children and young people; a lack of distinction regarding the platforms under investigation, often exploring children and young people's use of "social media" or participation in "online spaces" generally; and frequent coverage of illegal content and activity, which is out of the scope of this review.

Cyberbullying

This report identified a large volume of research that explored the definition, prevalence and impacts of cyberbullying on children and young people in the UK. While there is some consensus around the definition of traditional (offline) bullying which has some read across to online bullying, there is not a consistent definition of cyberbullying

specifically.¹ The evidence also notes key differences between (offline) bullying and cyberbullying, including perpetrator anonymity online, online publicity and permanence, and the invasiveness of online bullying on victims.

The research identified provides relatively reliable estimates on the prevalence of cyberbullying amongst children and young people living in the UK. These estimates suggest a significant minority of children and young people in the UK experience cyberbullying; with most findings ranging from 8% to 19%.² This range comes as a result of variation in how cyberbullying is defined and measured; variation in the demographic characteristics of participants, and variation in the time period being considered.

Overall, the evidence largely suggests that girls are more likely to be victims of cyberbullying than boys, and that the likelihood of experiencing cyberbullying increases with age. There is some evidence that suggests children from particular ethnic minority backgrounds, children with disabilities and children from lower socioeconomic backgrounds and who are LGBTQ+ are more likely to be victims of cyberbullying. Evidence on the prevalence of cyberbullying amongst different groups of children is, however, limited and therefore in need of further research. A large body of evidence consistently suggests cyberbullying has a wide range of negative emotional consequences for children and young people.³ These range from feeling upset and having a damaged self-esteem, to depression, anxiety, post-traumatic stress disorder and suicidal ideation. Evidence also suggests that cyberbullying can negatively impact education and social relations. Much of the research on the impacts of cyberbullying, however, is cross-sectional; resulting in a need for more longitudinal studies that explore the impacts of cyberbullying over time.⁴

Online pornography

This report identified a relatively large body of evidence that explored the definition of online pornography, and the prevalence of children and young people's exposure to it in the UK. There is, however, limited research on the impacts of exposure to online pornography. This is largely due to the ethical constraints in conducting research with children and young people in this area.

Within the evidence base two consistent approaches to defining online pornography were identified: content depicting sexual activities and/or content intended for sexual arousal.⁵

Several estimates presented within the evidence base suggest significant proportions of children and young people in the UK are exposed to online pornography. These

¹ See section 2.1.

² See section 2.2.

³ See section 2.3.

⁴ Cross-sectional surveys collect data from participants at a single point in time, while longitudinal studies follow the same participant group over time.

⁵ See section 3.1.

estimates, however, vary considerably; ranging from 11% being exposed to pornography within the past 12 months, to 81% being exposed to pornography ever⁶. This variation is a result of inconsistent definitions and measurement, as well as differences in demographic characteristics (particularly age) of research participants across studies.

This review identified no evidence on the prevalence of children and young people being exposed to online pornography over time. The evidence does, however, provide consistent findings on the types of children who are more likely to be exposed to online pornography; suggesting that older children are more likely than younger children to see online pornography, and that boys are more likely to see online pornography than girls.

Of the limited studies that explore the impacts of online pornography, the evidence consistently suggests that older children are less likely to consider online pornography upsetting than younger children, and that girls are more likely to be upset by viewing online pornography than boys. There is also consistent evidence that suggests online pornography can impact upon on young people's attitudes and behaviour towards sex and relationships. Some limited evidence also suggests that pornography can have negative impacts on girls. This includes the reinforcement of negative gender stereotypes and negative impacts on girls' own body image.⁷

No evidence on the impacts of pornography on other specific groups of children and young people was identified. This includes no evidence on the impacts of pornography on children and young people of different ethnicities, sexual orientations and social backgrounds, amongst other characteristics.

Self-harm and suicide-related online content and activity

This review identified a modest body of research that explores self-harm and suicide-related online content and activity in the UK. This evidence is however limited, with insufficient UK-based primary research on both prevalence and impact. This review combines findings on self-harm and suicide-related content as the evidence base typically does not differentiate between the two. Furthermore, while some pro-suicide content is illegal, and has been designated a priority offence within the Online Safety Bill, this review includes literature on all pro-suicide content due to difficulties in differentiating between illegal and legal content in the evidence base.

No consistent definition of self-harm and suicide-related content and activity was found during this review. The few definitions available either focused on defining self-harm (with no reference to online content), or on signposting examples of content and activity found online related to self-harm and suicide (which sometimes included content promoting eating disorders).⁸

⁶ See section 3.2.

⁷ See section 3.3.

⁸ See section 4.1.

This review identified limited research on the prevalence of self-harm and suicide-related content and activity. Of that which is available, findings suggest a significant minority of children and young people in the UK are exposed to self-harm and suicide-related content and activity; with estimates ranging from 9% of 12–15-year-olds seeing content promoting self-harm on the internet in the last 12 months, to 25% of 11–16-year-olds reporting seeing content about suicide at some point in their life.⁹ This range in estimates is due to variation in definitions, measurements and groups of children under investigation. Limited research suggests that the likelihood of accessing self-harm and suicide online content increases with age, and that boys are more likely to see content promoting self-harm and suicide than girls. Of the limited research that explores the impacts of accessing self-harm and suicide online content, findings consistently suggest that viewing and/or sharing self-harm and suicide online content may exacerbate self-harm behaviour and suicidal ideation and promote a wide range of negative emotional responses.¹⁰ No research was identified that explored the impacts of self-harm and suicide content and activity amongst different groups of children.

Online content and activity that promotes eating disorders

This review identified limited evidence that explored the definition of online content and activity that promotes eating disorders. Of that which was identified, the majority explored websites specifically targeted at people with eating disorders, as opposed to the presence of content and activity that promotes eating disorders found online more generally. Definitions provided focused on a wide range of content related to the encouragement and sharing of knowledge, attitudes and behaviours related to eating disorders. This includes content specifically related to anorexia and bulimia, as well related behaviour, such as extreme dieting and exercising to promote extreme weight loss.¹¹

Studies that explored the prevalence and impacts of online content and activity that promotes eating disorders largely focused on dedicated websites. Findings on the prevalence rates of young people's exposure to pro-eating disorder content differed between studies, with the most reliable estimates suggesting around 10% of children aged 11–16 have come across content related to eating disorders online. Evidence also suggests that girls are considerably more likely to view this content than boys.¹²

Qualitative and online ethnographic research suggests that content and activity that promotes eating disorders has a negative impact on children's body image and mental health. No other research was identified on the impacts of content and activity that promotes eating disorders on other specific groups of children.¹³

⁹ See section 4.2.

¹⁰ See section 4.3.

¹¹ See section 5.1.

¹² See section 5.3.

¹³ See section 5.2.

Other online harms

Violent content

This review identified a limited and disparate evidence base on violent content. Of the evidence included, no consistent definition of violent content was identified. Violent content covers a wide range of content and activity, much of which is illegal and therefore out of the scope of this review. Due to the lack of and/or inconsistent definitions and varying approaches to measurement, findings on the prevalence of violent content and activity varied significantly and are not comparable.

The findings of this review suggest violent content is a high concern amongst young people online. There is, however, limited evidence on the impacts of violent content and activity, with some research suggesting negative emotional responses and social media acting as a catalyst for face-to-face violence.¹⁴

Online content and activity that promotes stunts and challenges

This review identified no consistent definition of online content and activity that promotes stunts and challenges. This was, in part, due to studies exploring a wide range of stunts and challenges; ranging from high-risk fake suicide/self-harm challenges to challenges with less perceived risk, often in the form of funny videos, jokes and pranks. This review identified no reliable or representative estimates on the prevalence of online content and activity that promotes stunts and challenges, nor any research that explored impacts on different groups of children.¹⁵

Content and activity that promotes alcohol consumption

All studies identified by this review focused on the influence of alcohol marketing on youth alcohol consumption, or the influence of social media on drinking behaviour generally. No reliable estimates on the prevalence of content and activity that promotes alcohol consumption were found. Some qualitative research suggests alcohol-related content on social media reinforces positive views of alcohol consumption and promotes underage drinking; omitting negative consequences, such as addiction.

No evidence that explored the impacts of content and activity that promotes the consumption of alcohol on specific groups of children was identified.¹⁶

Evidence gaps and future research

The findings of this review suggest several evidence gaps and opportunities for future research. Firstly, particular types of content and activity are in need of much more thorough investigation. This includes self-harm and suicide-related content and content that could give rise to eating disorders, as well as the full-range of emerging harms, which provide very limited UK-specific data.

¹⁴ See section 6.1.

¹⁵ See section 6.2.

¹⁶ See section 6.3.

Generally, this review identified that across all content and activity in scope there is a lack of consistency in definitions. In order to fully understand prevalence, more consistent definitions are required across studies and/or further research needs to be undertaken. In some subject areas, such as cyberbullying, there are already representative and robust sources of evidence that can be built upon. In other subject areas, new research is required.

Since this is a constantly evolving field driven by new technology, the evidence suggests definitions should focus on the specific nature of content and activity under investigation, rather than seeking to attribute them to the platforms and online spaces active or popular at the time. Furthermore, for the purposes of research, it is recommended that overarching terms, such as 'online harms', should typically be avoided, unless supplemented by a catalogue of clear definitions of the specific content and activity under investigation. This is because these overarching terms typically lack specificity; aggregating a wide range of content and activity that often blurs the lines between what is legal and illegal.

As it currently stands, most research on the impacts of online content and activity is cross-sectional and relatively small-scale. Longitudinal, representative research that uses consistent impact measurements over-time is therefore required in order to help establish causal links between content and activity and harm.

Finally, a significant evidence gap identified by this review is research that explores the nature and impacts of harmful content and activity across different groups of children. In particular, research on the experiences of children on the basis of disability, ethnicity, religion, sexual orientation, social background and other vulnerabilities is virtually non-existent, and in need of further exploration.

1 Introduction

Following pre-legislative scrutiny, the [Online Safety Bill](#) was introduced to the UK parliament in March 2022. The Bill establishes duties on services in scope to improve the safety of their users.¹⁷ This includes a requirement for services to tackle and remove illegal material, as well as ensure that children are protected from being exposed to harmful content and activity.¹⁸

In order to protect children from being exposed to harmful content and activity, the Bill places a duty on services in scope to assess the risk of children encountering content which is harmful to them on their service and a duty to provide children with appropriate protections. This will include assessing risks to children from 'priority' harms. The government will set out the priority harms to children through secondary legislation, following consultation with the online safety regulator, Ofcom.

Within this context, the Department for Digital, Culture, Media and Sport (DCMS) identified a need to synthesise the relevant evidence base. In November 2021 DCMS commissioned the National Centre for Social Research (NatCen) and City, University of London, to carry out a rapid evidence assessment (REA) to provide a synthesis of evidence on content and activity that is harmful to children on services within scope of the Online Safety Bill. Content and activity that is illegal or harmful to adults are out of scope of this review, as these are addressed under separate provisions within the Online Safety Bill.

1.1 Scope of the review

The purpose of this REA is to provide an overview of available evidence on the risks to children from harmful content and activity on services in scope of the Online Safety Bill. This includes a synthesis of evidence on the definition, prevalence and impacts of harmful content and activity, as well as any variation amongst different groups of children.¹⁹

Since the purpose of this review is to inform the online safety regulatory framework, its scope was defined by key definitions contained within the Online Safety Bill. This includes:

¹⁷ Services in scope of the Online Safety Bill are companies that allow users to post content online or to interact with each other. This includes a broad range of websites, apps and other services, including social media services, consumer cloud storage sites, video sharing platforms, online forums, dating services, online instant messaging services, peer-to-peer services, video games which enable interaction with other users online, and online marketplaces. The legislation will also apply to search services.

¹⁸ The largest, highest-risk services will also have to make clear in their terms and conditions what harmful content is and is not acceptable for adults to share or view on their site, and enforce these terms and conditions consistently.

¹⁹ This includes children of different age groups, genders, ethnicities, religions, sexual orientations and social backgrounds. This also includes vulnerable children, which includes, but is not limited to, children with physical, psychological or learning disabilities, those with special educational needs and children in care.

- **Children:** Anyone under the age of 18.
- **Harm:** This refers to content presenting a material risk of significant physical or psychological harm to an appreciable number of children in the United Kingdom, including where this arises from the nature of the content, the fact of its dissemination or the manner of its dissemination.
- **Services in scope of the Online Safety Bill:** This refers to companies and platforms that provide services or user functionality on their websites which facilitate the sharing of user generated content or user interactions. It also includes search services.
- **Content that is harmful to children:** This relates to content and activity that meets the definition of harm to children in the Online Safety Bill,²⁰ but falls below a criminal threshold.

The Online Harms White Paper set out an indicative list of online content or activity, which informed the main list of harms to be considered by this review: cyberbullying, online pornography, violent content, pro-self-harm content, pro-suicide content, and content which could encourage eating disorders. In addition, DCMS required the review, where possible, to include evidence on emerging or lesser researched harmful content and activity.²¹

1.2 Methodology

This review was undertaken using a rapid evidence assessment (REA) design.²² The purpose of an REA is to provide a robust, systematic synthesis of available evidence, within a limited timeframe. REAs achieve this by undertaking most of the steps of a full systematic review; however, steps are shortened, simplified or omitted.

Strict inclusion criteria are also applied during REAs to prioritise evidence. For this review, this included:

- Focusing on articles published **from 2011 onwards**.
- Limiting to evidence available in the **English language**, unless English summaries in other languages were readily accessible.
- Focusing on studies which included **UK data**. This was necessary due to the wide scope of the review, as well as the high-volume of international literature across the different content and activity in focus.

²⁰ Content meets the definition of harm in the Online Safety Bill if it presents a material risk of significant harm to an appreciable number of children in the United Kingdom.

²¹ This includes nudity, sexual content, disinformation and misinformation, content promoting illegal activity, content depicting dangerous stunts and challenges, and content promoting underage alcohol use.

²² Government Social Research Service (2014) [Rapid Evidence Assessment Toolkit](#)

- Focusing on **peer-reviewed academic studies** that are published or are in print, with inclusion of grey literature in subject areas with a more limited evidence base.

This REA methodology comprised of three key stages:

- **Literature searching and screening** to identify the nature, availability and range of evidence in scope of the review.
- **Critical evaluation stage** to evaluate the quality and prioritise evidence for inclusion in the review.
- **Extraction and synthesis stage** to extract and summarise data thematically.

Stage 1: Literature searching and screening

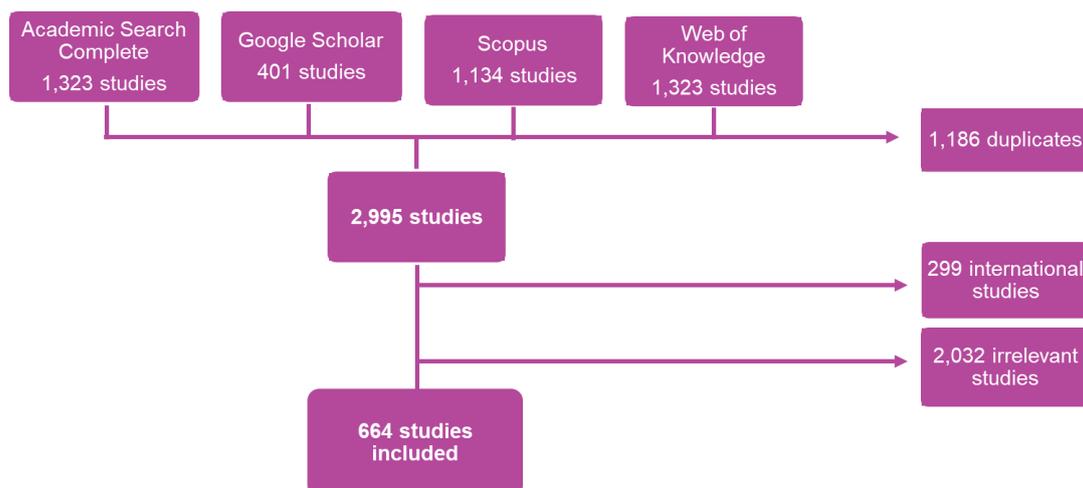
Literature searching and screening was undertaken in three phases. Phase 1 sought to identify existing evidence on the harmful content and activities which pose most risk to children online. This included cyberbullying, pornography, violent content, pro-self-harm content, pro-suicide content, and content which could give rise to eating disorders. Given the wide scope and interdisciplinary nature of the evidence base, literature searches were undertaken across four academic databases: Academic Search Complete, Scopus, Web of Knowledge and Google Scholar.

Bespoke search strings were developed for each of the harmful content and activities listed above. These strings included keywords relevant to the online safety of children, in conjunction with terms related to each of the harmful content and activities. Given the limited timeframe of the project and the wide scope of the review, search strings were purposefully designed to narrow down the evidence base as much as possible, without compromising coverage of key themes.²³ Boolean operators and truncation were also included to ensure focus. Search strings were piloted using Scopus to assess the volume and relevance of returns. Depending on engines' search technology, appropriate and proportionate approaches were used to reduce the number of irrelevant hits (e.g. eliminating historical and literary literature). Search strings used are provided in Appendix A.

Having completed searching across the four academic databases, search results were combined, and duplicates removed. Abstrackr was then used to review titles, abstracts and/or executive summaries to identify and remove any studies not in scope of the review. The findings of this phase are provided in Figure 1.

²³ This included avoiding keywords and search terms that would significantly increase the evidence base, such as "social network" which is commonly used across the social sciences.

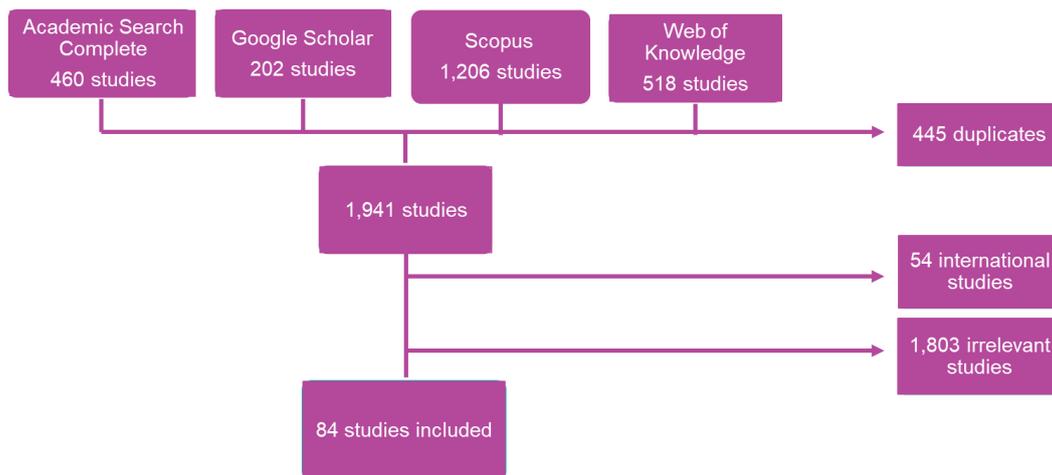
Figure 1: Searching and shortlisting



Phase 2 sought to identify existing evidence on emerging or lesser researched types of harmful content. This initially included nudity, sexual content, disinformation and misinformation, content promoting illegal activity, content depicting dangerous stunts and challenges, and content promoting underage alcohol use. In order to refine and prioritise this list, the NatCen research team undertook a review of relevant platforms' policies on content regulation and the prevention of harm.²⁴ From this process, as well as an assessment by the NatCen research team on the coverage of emerging or lesser researched harmful content within the evidence identified so far, and in view of time constraints, it was decided that bespoke search strings would be developed for disinformation / misinformation, content promoting illegal activity, dangerous stunts and underage alcohol use only. This meant the exclusion of areas of limited evidence, as well as subject areas which presented such large evidence bases it was not possible to isolate research relevant to the scope of this review, such as content and activity that promotes illegal activity. Literature searching and screening was subsequently conducted across the four academic databases using the same processes as in Phase 1. Search results were then combined, and duplicates removed. Abstrackr was then used to review titles, abstracts and/or executive summaries to identify and remove any studies not in scope of the review. Findings of this phase are provided in Figure 2.

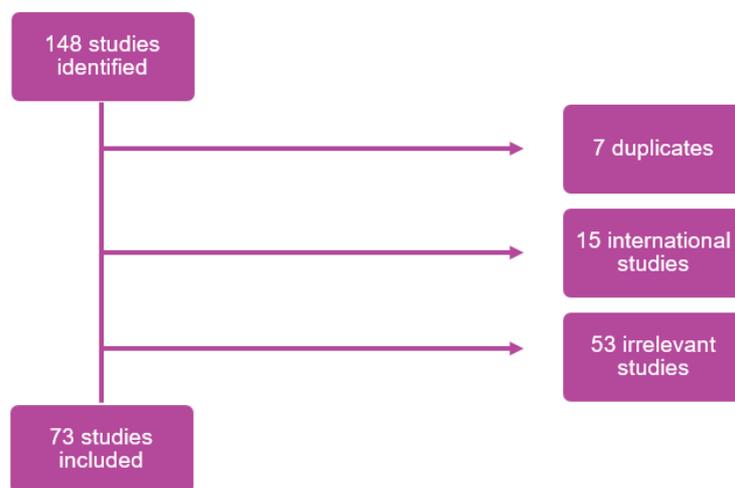
²⁴ This included Facebook, Instagram, LegoLife, Minecraft, Pinterest, Reddit, Roblox, TikTok, Twitch, Twitter, Popjam, Yubo and Youtube.

Figure 2: Searching and shortlisting for emerging and less researched harms



Phase 3 included the manual searching of relevant websites of industry and charities for grey literature. A list of reviewed websites is provided in Appendix B. Once searches had been completed the results were combined, and duplicates removed. Abstrackr was then again used to review titles, abstracts and/or executive summaries to identify and remove any studies not in scope of the review. Findings of this phase are provided in Figure 3.

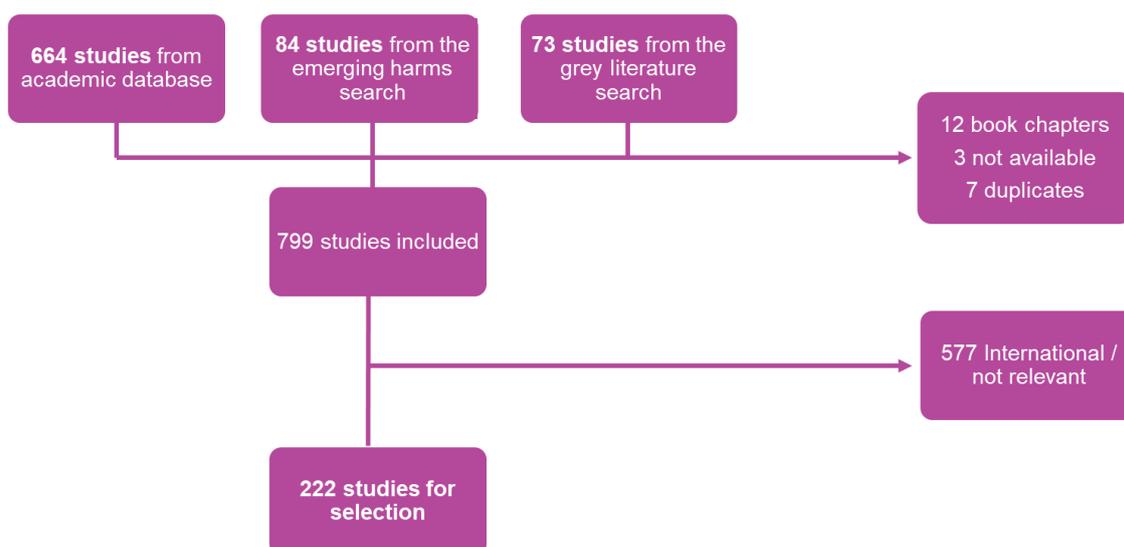
Figure 3: Searching and shortlisting of grey literature



Stage 2: Critical evaluation

Having completed the literature searching and title and abstract screening, all findings were combined, and any duplicates or inaccessible studies were removed. Studies' full text were then retrieved and reviewed for relevance. All those deemed out of scope for the review were then removed. Findings of this stage are provided in Figure 4.

Figure 4: Full-text screening



Due to the limited timeframe in which this REA was conducted, the maximum number of studies included for synthesis was limited to approximately 100. Studies were therefore prioritised based on an assessment of full text using a Weight of Evidence (WoE) approach. This included producing a standardised tool to score evidence according to their relevance to the review’s research questions (out of 4) and an assessment of research quality (out of 8).

| Score /4 | Relevance to the review |
|----------|--|
| RQ1 | Provides the definition for one or more harmful content / activity in scope of the review. |
| RQ2 | Provides insight into the prevalence of one or more harmful content / activity in scope of the review. |
| RQ3 | Explores the impacts of one or more harmful content / activity in scope of the review. |
| RQ4 | Considers any variation between different groups of children. |

| Score /8 | Methodological soundness and appropriate research design |
|----------|---|
| RQ1 | Is there a clear statement of the aims/objectives or clear research questions? |
| RQ2 | Is the sampling strategy (or data selection strategy if not collecting primary data) clearly described and appropriate for the research questions/aims? |
| RQ3 | Is the method of data collection clearly described, and appropriate to answer the aims/research questions? |
| RQ4 | Is the paper or research team explicit about sources of funding for the project? |

| | |
|-----|---|
| RQ5 | Are the methods for data analysis appropriate for the research questions/aims? |
| RQ6 | Are there any concerns regarding accuracy (e.g. discrepancies within the report)? |
| RQ7 | Is sufficient data/ evidence presented to support the discussion/ conclusions? |
| RQ8 | Is the study peer-reviewed? |

Having been allocated a score for relevance (out of 4) and quality (out of 8) by the NatCen research team, studies were split by their primary thematic area.²⁵ All studies scoring less than 2 (out of 4) for relevance and 3 (out of 8) for quality were de-prioritised for inclusion in the review. For studies in higher-volume subject areas, thresholds were increased to 3 (out of 4) for relevance and 4 (out of 8) for quality.²⁶

In addition to setting relevance and quality thresholds for inclusion, a supplementary prioritisation process was necessary to avoid the duplication of evidence and findings. This was predominantly due to the presence of multiple evidence reviews that synthesised the same primary research, and the duplication of research findings across multiple studies which were removed and replaced with other evidence shortlisted for inclusion in the review. As a result of this process, some studies with relatively lower WoE scores are included in this review. This is particularly the case for areas of limited evidence, such as with emerging and lesser researched harms.

Stage 3: Data extraction and synthesis

Having identified evidence to be included, the key information from each document was extracted and summarised. This was completed using a data extraction tool based on the NatCen Framework approach for data management, whereby evidence is systematically summarised using analytical matrices ('charts') that represent each of the key research questions. This was then used to synthesise the key findings of the identified research and inform reporting.

1.3 The evidence base

Overall, this review found that while there is a high volume of research exploring the nature and impacts of online harms generally (as demonstrated by high returns at the initial literature searching stage) much of that research falls out of the specific scope of this review. This is, in part, due to a high volume of international research that does not provide UK-specific data. This is also due to a lack of research that focuses specifically

²⁵ This included cyberbullying, online pornography, combined content and activity that could give rise to self-harm and suicide, content and activity that could give rise to eating disorders, violent content, plus emerging lesser researched harms. Some studies were also categorised as 'multiple' if they explored several of the themes in scope of the review. Assessment of these studies categorised as 'multiple' showed significant focus on cyberbullying and online pornography, mostly in the form of wide-ranging evidence reviews and large-scale survey research exploring online harms generally.

²⁶ Higher thresholds were applied to studies that focused specifically on cyberbullying and those categorised as covering multiple themes.

on the prevalence and impacts of content and activity on children and young people. This is primarily a result of ethical challenges preventing primary research being conducted with children and young people on many of the themes within scope of this review.

A lack of primary research with children and young people has several consequences for this review. This includes:

- An uneven evidence base, in which studies focused on content and activity more amenable to primary research with children and young people, such as cyberbullying, are much more readily available.
- The use of more innovative methodology in subject areas, such as eating disorders, which are less amenable to primary research with children and young people. These methods, however, are typically less able to address questions around definition and prevalence or provide robust and/or representative findings on impact.
- The presence of a high number of international evidence reviews, as barriers to undertaking primary research with children and young people promote greater reliance on international findings. This, in turn, presents challenges identifying UK-specific data, as both primary research and citing evidence reviews often fail to attribute or disaggregate findings at the national level.

In addition to the above, the evidence base also presents several challenges in presenting a consistent synthesis of research. These include:

- A lack of consistency in the definition of the content and activity being investigated. This results in largely inconsistent findings on prevalence, and much of the available research focusing on the identification of young people and children's exposure to risk in general, rather than the specific definition and measurement of harm.
- Variable definitions of children and young people; with research participants typically ranging from the age of 9 to 25.
- A lack of distinction of the platforms under investigation, with studies often exploring children and young people's use of "social media" or participation in "online spaces" generally. This presents challenges establishing whether the services under investigation fall in scope of the Online Safety Bill.
- Frequent coverage of illegal content and activity, which is out of the scope of this review. This includes, for example, studies on pornography exploring indecent images of children, studies on cyberbullying exploring hate speech, and studies on misinformation focusing on processes of radicalisation.

The evidence contained in this review also provides limited insight into the causality between exposure to harmful content and activity and impacts on children and young people. This is due to the ethical difficulties of conducting research, and subsequent lack of, longitudinal and causally reasoned research, which significantly limits the evidence-base to the exploration of correlation; often through self-reported measures. Self-reported measures are valuable from a research perspective in their own right, but more longitudinal and causal evidence in this area could help to increase the reliability and validity of the findings when it comes to understanding the causal link between a potential harmful experience and an actual subsequent harm.

1.4 Report overview

The findings of this review are presented in six chapters:

- Chapter 2 synthesises the evidence on cyberbullying.
- Chapter 3 synthesises the evidence on online pornography.
- Chapter 4 synthesises the evidence on online content and activity that promotes self-harm and suicide.
- Chapter 5 synthesises the evidence on online content and activity that promotes eating disorders.
- Chapter 6 synthesises evidence on other harmful content and activities identified in scope of this review. This includes:
 - Violent content and activity.
 - Content and activity that encourages alcohol consumption.
 - Content and activity that promotes dangerous stunts and challenges.
 - Online misinformation.

Where available, each chapter provides a synthesis of evidence on the definition, prevalence and impacts, as well as any variation amongst different groups of children. Where this is not possible, evidence gaps are signposted throughout.

2 Cyberbullying

This chapter synthesises the evidence on cyberbullying. It begins by providing an overview of key definitions. It then outlines evidence on the prevalence of cyberbullying in the UK, and its impacts on children and young people, both generally and on different groups. Several studies identified by this review note the significant overlap between cyberbullying and other types of online abuse. This includes online abuse that falls outside the scope of this review, such as sexting, online sexual harassment and online hate speech. This chapter focuses on evidence as it relates to cyberbullying specifically. In instances where studies overlap to other forms of online abuse, this is made clear throughout.

Cyberbullying had the largest evidence base of all the topics covered, with fifty-four pieces of evidence included in this review. The methodology underpinning this evidence included:

- Twenty-two studies presenting UK survey data;²⁷
- Ten studies presenting cross-national²⁸ survey data;²⁹
- Eight literature reviews;³⁰
- Three systematic evidence reviews;³¹
- One evidence review of interventions;³²
- Five qualitative studies based on focus group data collection;³³

²⁷ Kernaghan and Elwood, 2017; Hatfield et al., 2019; Przybylski and Bowes, 2017; Przybylski, 2019; Fahy et al., 2016; Monks et al., 2012; Tarapdar and Kellett, 2011; West, 2015; Mateu et al., 2020; Tarapdar and Kellet, 2013; Devine and Lloyd, 2012; Katz and El Asam, 2021; Young Minds, 2018; Ofcom, 2013, 2017; Lilley et al., 2014; Brooks et al., 2017, 2020; ONS, 2020; Samara et al. 2021; Lasher and Baker, 2015; Bevilacqua et al., 2017.

²⁸ For these studies the UK data could not be disaggregated but these large-scale cross-national surveys are presenting a snapshot and scale of prevalence.

²⁹ Cosma et al., 2020; Genta et al., 2012; Smith et al., 2019; Lobe et al., 2011; Livingstone et al., 2011a; Craig et al., 2020; Ortega et al., 2012; Smith, 2016; Livingstone et al., 2011b; Hasebrink et al., 2011.

³⁰ Livingstone and Smith, 2014; Livingstone et al., 2017; Abreu and Kenny, 2018; El Asam and Samara, 2016; Aboujaoude et al., 2015; Doyle et al., 2021; Cassidy et al. 2013; Heyeres et al., 2021.

³¹ Stoilova et al., 2021; Best et al., 2014; Kowalski et al., 2014.

³² Myers and Cowie, 2019.

³³ Steer et al., 2020; O'Reilly et al., 2018; Betts and Spenser, 2017; Monks et al., 2016; Bryce and Fraser, 2013.

- Three mixed-methods studies using quantitative data collection and focus groups;³⁴
- One mixed methods study utilising quantitative data collection and interviews;³⁵
- One mixed-methods qualitative study analysing interviews and focus groups.³⁶

Methodological limitations

One key methodological limitation of the studies contained in this review was the measures used for cyberbullying victimisation and associated impacts. Most studies explore psychological impacts of cyberbullying using self-reporting data (Aboujaoude et al., 2015; Mateu et al., 2020; Przybylski and Bowes, 2017; Przybylski, 2019). While this offers valuable insight into the experiences of cyberbullying victims, self-reported data does not give an estimation of mental health conditions that meet standardized criteria for diagnosis. As such, some evidence suggests that data from clinical assessments or comprehensive psychiatric interviews are needed to verify the relationship between cyberbullying and mental health disorders (Mateu et al., 2020; Aboujaoude et al., 2015). As it currently stands, research tends to measure subjective mood states – for example feeling sad or fearful – rather than psychiatric conditions, which can lead to inconsistency across studies because of the lack of standardisation (Aboujaoude et al., 2015).

Differences in the definition and measurement of cyberbullying and the time frame considered – for example asking participants to consider cyberbullying incidents in the last year as opposed to ever experiencing cyberbullying – can also contribute to inconsistencies across studies when exploring prevalence (Ackers, 2012). A literature review by Abreu and Kenny (2018) also identified varied measurements used to define cyberbullying (for example the nature and frequency of behaviours that young people need to report to be considered victims of cyberbullying for the purpose of the study).

Across the studies, it was not consistently possible to infer causality between the experiences of cyberbullying victimisation and impacts. For example, it was identified that some factors (such as mental health issues) might increase the risk of experiencing cyberbullying victimisation, rather than cyberbullying causing mental health issues (Aboujaoude et al., 2015). It was also noted that young people with lower levels of mental wellbeing may be more likely to perceive certain behaviours as cyberbullying, which might affect the reliability of research. Similarly, some studies determined an association between cyberbullying and other variables, but no causal link was established due to the cross-sectional design (Aboujaoude et al., 2015; Ortega et al., 2012; Przybylski and Bowes, 2017).

“A third limitation of our study is that it was cross sectional. Whilst this is suitable for estimating prevalence, we are unable to estimate direction of effects when examining the relationship between bullying and mental well-being. It

³⁴ O'Brien and Moules, 2013; Ackers, 2012.

³⁵ Keighley, 2021.

³⁶ Barbovschi, 2014.

remains possible that adolescents with low mental well-being are more at risk of being bullied by their peers.” (Przbylski and Bowes, 2017, p. 12)

Another methodological limitation of some evidence in this section is the use of non-representative samples, and samples that exclude specific experiences. This ranges from studies that only represent the experiences of youth in urban areas (Mateu et al., 2020) to studies recruiting participants in LGBTQ-related organisations and schools, thus excluding members of the LGBTQ community who are not connected to these organisations (Abreu and Kenny, 2018). There is also a lack of representation of the experiences of LGBTQ youth of colour – with some studies reporting on racial, ethnic, sexual, and gender identities but not on the association between intersecting identities and experiences of cyberbullying – or transgender and gender expansive youth (Abreu and Kenny, 2018).

2.1 Definitions

Cyberbullying currently lacks a legal definition in UK law (El Asam and Samara, 2016; Young Minds, 2018) but there are a number of existing laws that associated behaviours can fall under.³⁷ Furthermore, there is no consistent agreement on a definition across existing literature.³⁸ El Asam and Samara (2016, p.129) suggest that the “need for consistent, conceptual and operational definitions of the term cyberbullying” currently presents a challenge to researchers working in this area. Key to this challenge are the wide range of behaviours cyberbullying encompasses (Tarapdar and Kellett, 2013), the impact of rapidly changing technology (Lilley et al., 2014), as well as how to distinguish cyberbullying from traditional forms of bullying. In addition to these challenges, some studies sought to understand how young people define cyberbullying. These are each discussed in turn.

2.1.1 Distinguishing cyberbullying from traditional bullying

Studies often list cyberbullying as a subcategory of bullying, with some noting that cyberbullying shares key features with traditional bullying (Cassidy et al., 2013; Myers and Cowie, 2019). Cyberbullying, rather than being a separate phenomenon, is therefore often perceived as an extension of traditional (offline) bullying (El Asam and Samara, 2016; Abreu and Kenny, 2018). In line with this, research suggests a definition of cyberbullying should be based on definitions of traditional (offline) bullying (Cassidy et al., 2013; Ofcom, 2013; Przybylski, 2019; Smith et al., 2019; Samara et al., 2021). A number of studies included in this review, therefore explicitly acknowledge the influence of Olweus’ definition of bullying within schools (Livingstone and Smith, 2014; Smith et al., 2019). This definition is made up of three key components:

³⁷ Cyberbullying, in the UK, is not an offence, but there are laws in England and Wales that apply in terms of harassment, defamation or threatening behaviour. For example, bullying or abusing someone online could be defined as a legal offence under the Protection from Harassment Act 1997, Malicious Communications Act 1988, section 127 of the Communications Act 2003 and the Public Order Act 1986.

³⁸ Devine and Lloyd, 2012; Bryce and Fraser, 2013; Kernaghan and Elwood, 2013; West, 2015; El Asam and Samara, 2016; Betts and Spenser, 2017; Abreu and Kenny, 2018; Smith et al., 2019.

1. an intent to harm or upset another student;
2. harmful behaviour repeatedly done over time;
3. an imbalance in power in the relationship between bully/bullies and victim/victims.

Although much of the available research suggests that cyberbullying is an extension of traditional (offline) bullying, several studies identified by this review note key differences between the two. These include:

- Anonymity, which can allow perpetrators to feel they can act without fear of repercussions due to the concealment afforded by online spaces.³⁹
- Publicity and permanence, as victimisation occurs in often public online spaces and can be difficult to take down.⁴⁰
- Invasiveness, as cyberbullying is not confined to any physical space, and victims can be targeted anywhere they take their electronic device.⁴¹

2.1.2 Behaviours associated with cyberbullying

Definitions offered by the evidence identified by this review varied in detail. Many definitions of cyberbullying modified Dan Olweus' (1997) widely adopted definition of bullying⁴² to specify the digital or online nature of cyberbullying. Some studies broadly defined cyberbullying as: aggressive acts (using for example, intimidating imagery which are violent in nature)⁴³; threatening behaviours (a personal attack or put down, sometimes referred to as trolling)⁴⁴; harassment (a sustained, constant and intentional form of cyberbullying comprising abusive or threatening messages sent to a child or group)⁴⁵; distributing personal material (a deliberate act to embarrass or humiliate someone through online posting without their consent, this is also known as 'outing')⁴⁶; intent to hurt/harm (sending or posting cruel information about someone to damage

³⁹ Kowalski et al., 2014 cited in Smith, 2016; Spears et al., 2015 and Hobbs, 2009 cited in Tarapdar and Kellett, 2013 and El Asam and Samara 2016.

⁴⁰ Fahy et al., 2016; Smith, 2016; Akbulut et al., 2010: cited in Tarapdar and Kellett, 2013 and Wong-Lo and Bullock, 2011: cited in Betts and Spenser, 2017.

⁴¹ Smith, 2016; Tarapdar and Kellett, 2013; ONS, 2020 and Betts and Spenser, 2017.

⁴² "repeated aggressive behaviour, with an imbalance of power between the aggressor and the victim" (Olweus, 1997).

⁴³ Kernaghan and Elwood, 2013; Cosma et al., 2020; Przybylski and Bowes, 2017; Abreu and Kenny, 2018; Steer et al., 2020; Ortega et al., 2012; West, 2015; Mateu et al., 2020; El Asam and Samara, 2016 and Ackers, 2012.

⁴⁴ Hatfield et al., 2019; Cosma et al., 2020; Genta et al., 2012; Myers and Cowie, 2019; Abreu and Kenny, 2018; Stoilova et al., 2021; El Asam and Samara, 2016 and Young Minds, 2018.

⁴⁵ Hatfield et al., 2019; Livingstone and Smith, 2014; Genta et al., 2012; Abreu and Kenny, 2018; Stoilova et al., 2021; Ortega et al., 2012; El Asam and Samara, 2016; Devine and Lloyd, 2012.

⁴⁶ Livingstone and Smith, 2014; Myers and Cowie, 2019; Stoilova et al., 2021; Genta et al., 2012; Young Minds, 2018.

their reputation or friendship with others)⁴⁷; and insulting or degrading behaviour (using social media platforms to be derogatory to someone and/or gaining someone's trust to get them to reveal their secrets and then posting them online)⁴⁸. Additional behaviours identified by Canadian and American scholars were also present in the UK evidence base, including flaming (posting or sending offensive messages on the internet), cyberstalking (the use of the internet and other technologies to harass or stalk another person online), masquerading (assuming another identity to anonymously harass the victim), outing (sharing private information about the victim), and creating fake profiles and posting false information.⁴⁹

2.1.3 Rapidly changing technology

Most definitions distinguish cyberbullying from traditional bullying by noting its use of online or digital technology. An overview of these is provided by Ackers (2012), which includes text messaging, picture/video clips, phone calls, emails, chatrooms, instant messaging and websites.

However, as Monks et al. (2016, p.40) note, "the nature of technology, and consequently the nature of cyberbullying, is constantly changing, with different methods becoming more popular at different time points". This has implications for how cyberbullying can be defined in relation to current and future technologies. Therefore, from the evidence it is apparent that definitions emphasising types of behaviour rather than uses of technology, are more robust as they will continue to stand the test of time.

2.1.4 Young people's definitions

Some of the studies identified in this review sought to understand how young people themselves understand and define cyberbullying. The volume of this kind of evidence was limited and confined to a small qualitative study of 29 participants conducted in England (Betts and Spenser, 2017), a mixed methods study of 494 participants carried out in Northern Ireland (Kernaghan and Elwood, 2013) and a quantitative study limited to 108 participants from a single sixth form college (Hatfield et al., 2019). In addition to these studies, which feature convenience⁵⁰, non-representative samples, further insights are drawn from consultation with young people by Barnardo's children's charity (Young Minds, 2018).

Due to the limitations of this evidence base, it is not possible to make generalised claims about how young people define cyberbullying. However, these studies do highlight areas where young people's definitions overlap with those being used by

⁴⁷ Abreu and Kenny, 2018; Livingstone et al., 2011b; Ortega et al., 2012; Tarapdar and Kellett, 2011; Tarapdar and Kellett, 2013; Aboujaoude et al., 2015.

⁴⁸ Cosma et al., 2020; Myers and Cowie, 2019; Abreu and Kenny, 2018; Stoilova et al., 2021; Ortega et al., 2012; Tarapdar and Kellett, 2011; Tarapdar and Kellett, 2013.

⁴⁹ Livingstone and Smith, 2014; Devine and Lloyd, 2012; Ortega et al., 2012; Stoilova et al., 2021; Kernaghan and Elwood, 2013; Genta et al., 2012; Abreu and Kenny, 2018; Hatfield et al., 2019.

⁵⁰ Convenience sampling is a type of non-probability sampling that involves the sample being drawn from a convenient online or offline location.

researchers and provide depth and nuance to our understanding of the role of intent in how young people define cyberbullying. These findings include:

- Similarities with traditional bullying – as with definitions used by researchers, young people asked to define cyberbullying drew parallels with face-to-face bullying, describing how it was often an escalation of traditional bullying. (Betts and Spenser, 2017) as well as characterising cyberbullying as “repeated” behaviour (Hatfield et al., 2019).
- Differences from traditional bullying – young people also noted the potential of cyberbullying to be more invasive, reaching victims at home and potentially at any time of day (Betts and Spenser, 2017).
- Cyberbullying behaviours – behaviours defined by young people as cyberbullying included “targeting someone because of what they had said, nastiness, blaming someone for something, sharing personal or private information with others, disruption to social networks, and threats” (Betts and Spenser, 2017), as well as name-calling, posting embarrassing photos, digitally manipulating pictures, ‘sexting’ requests, sharing others’s status updates in private chats, and deleting someone from a group chat (Young Minds, 2018).
- Perception of intent – young people distinguish cyberbullying from other kinds of online behaviours, such as ‘banter’ that might be interpreted as cyberbullying. Studies noted that perception of intent was considered by young people to be a key consideration when defining cyberbullying, adding that this could be clouded by ambiguities inherent in online interactions due to the absence of visual clues, such as body language. Consequently, young people sometimes found it difficult to discern cyberbullying from more prosaic interactions intended to be humorous. (Betts and Spenser, 2017; Steer et al., 2020; Kernaghan and Elwood, 2013).

2.2 Prevalence

This section covers the general prevalence of cyberbullying and comparison by demographic characteristics, such as gender, age, ethnicity, socioeconomic background and sexual and gender identity. There is some variation between estimates of the frequency of cyberbullying across surveys, with estimates ranging from 8% to 19%. This variance is due to differences in the year the data was collected, the age group researched, the survey method and the measurements used to define cyberbullying. There is a gap in existing evidence of a repeated survey measuring the prevalence of cyberbullying across the general population, for example, children aged 11–18, carried out consistently over time.

Furthermore, as outlined by El Asam and Samara (2016) one of the major challenges when attempting to understand the prevalence of cyberbullying among children is that, similar to bullying in general, the issue is often unreported, under-reported or misunderstood.

Within this context, and given the large evidence base, this section reports cyberbullying prevalence rates as reported by large-scale survey research.⁵¹ It also only reports findings on the prevalence attributed specifically to cyberbullying as opposed to wider categorisations of online harassment and victimisation, such as online hate (Livingstone et al., 2017; Ofcom, 2017).

This review identified several large-scale, survey studies that reported varied findings on the prevalence of cyberbullying in the UK.⁵² This includes:

- Data from the 2019 Crime Survey for England and Wales (CSEW) reported that nearly one in five children aged 10–15 in England and Wales experienced at least one type of online bullying behaviour (19%). This equates to approximately 764,000 children (ONS, 2020).⁵³
- Analysis of both 2014 and 2018 Healthy Behaviours in School-Aged Children (HBSC) survey data found approximately 18% of young people aged 11–15 reported they had experienced some form of cyberbullying in the past two months (Brooks, 2017; Brooks et al., 2020).⁵⁴
- Analysis of survey responses from 11,166 children aged 14–15 in the UK as part of the Longitudinal Study of Young People in England (LYPSE), reported that 11% of participants had experienced cyberbullying by phone or online (Lasher and Baker, 2015).⁵⁵
- Przybylski and Bowes (2017) found that, in a survey of 120,115 children aged 15 years old in England, 3.4% of respondents reported being victim to both traditional and cyberbullying, and 0.4% reported being cyberbullied only.⁵⁶
- Przybylski (2019) also surveyed 1,004 young people, aged 14–15 in a representative sample from England, Scotland and Wales. Around one third

⁵¹ As noted, over thirty-three of the papers reviewed were based on large scale quantitative studies. This is because cyberbullying research has been around the longest out of all of the categories investigated and large-scale studies demonstrating prevalence are what policy makers, educators, and those trying to design interventions draw on.

⁵² Prevalence studies tend to vary in methodology and in their definition of cyberbullying. Findings should therefore often be viewed independently rather than comparatively. Simple changes in terminology and questions can have a significant impact on a data set.

⁵³ Findings are based on a representative sample of 2,398 10–15-year-olds living in England and Wales.

⁵⁴ Findings draw on responses from 11–15-year-olds from randomly selected secondary schools in England. Findings from 2014 are based on 5,335 responses (Brooks et al., 2017). Findings from 2018 are based on 3,398 responses (Brooks et al. 2020).

⁵⁵ Based on the second Longitudinal Study of Young People in England (LYPSE2). LYPSE2 started in 2013 and is following young people from the age of 13/14 to 19/20. In 2014, 11,166 young people were interviewed.

⁵⁶ Nationally representative cross-sectional study of 120,115 English adolescents aged 15, who completed surveys between September 2014 and January 2015. Cyberbullying defined as responses to the question: “Someone sent mean instant messages, wall postings, emails and text messages, or created a website that made fun of me.”

(34%) of those surveyed reported having experienced at least one form of cyberbullying victimisation in the previous six months. Nearly one in 10 (9.3%) reported significant levels (e.g. 2 or 3 times a week) of at least one form of bullying during this period.⁵⁷

- Cosma et al. (2020) looked at the four recent survey cycles of the Cross-National Health Behaviour in young people aged 11–15 from 2002, 2006, 2010 and 2014 (N = 764,518) and found relatively low and stable rates of cyberbullying, with 4% of the overall sample reporting having been cyberbullied by either text and/or by photograph.
- As part of the 2011 EU Kids Online survey of young people aged 9–16 across EU countries, Livingstone et al. (2011) reported that 8% of participants from the UK had been bullied online.⁵⁸

Generally, the research identified by this review suggests that cyberbullying has become more prevalent at the same time that the use of technology has increased (Cheng, 2012: cited in Hatfield, Tzani-Pepelasi and Lowe, 2019), but there is no evidence or research that shows a correlation between the two. A comparison by Livingstone et al. (2014) of 2011 EU Kids Online data and 2014 Net Children Go Mobile data, suggests the percentage of children aged 11–16 years old who report receiving nasty ('cyberbullying') messages rose from 8% to 12% in the years the studies were conducted.⁵⁹ However, this review identified a lack of research that could identify a causal relationship over time. A suggested approach would require cross-sectional surveys that capture the prevalence of cyberbullying alongside other measures that account for changes in children's access to the internet and amount of time spent online.

2.2.1 Prevalence of cyberbullying amongst different groups of children

Evidence suggests that cyberbullying disproportionately impacts girls compared to boys, and older children compared to younger children. Gender and age were the dominant demographic categories measured in the studies we reviewed, with comparatively little research exploring how ethnicity, sexual orientation or other characteristics intersect with prevalence of cyberbullying. This may be explained by ethical requirements for research with young people limiting the kinds of demographic information that researchers can collect from participants. Study results are also likely to reflect variations in sampling and measurement procedures (Kowalski et al., 2014).

⁵⁷ Based on analysis of a representative sample of 1,004 14–15-year-olds living across the UK).

⁵⁸ Based on random stratified survey sampling of some 1,032 children (aged 9–16 years old) who use the internet.

⁵⁹ Findings are based on a combination of data from Belgium, Denmark, Italy, Ireland, Portugal, Romania and the UK.

Gender

Generally, the evidence suggests that girls are more likely to be victims of cyberbullying than boys. This reflects patterns identified in bullying research that show girls are more likely to be victims of psychological/exclusionary bullying tactics, which more easily translate into cyberbullying than the kinds of physical bullying that boys are more likely to experience.

The evidence available on variation in cyberbullying prevalence by gender includes:

- Brooks et al. (2017 – based on analysis of 2013–14 HBSC data) reported that girls are at significantly greater risk of cyberbullying than boys, reporting double rates of victimisation (24% and 12% respectively). This finding is reinforced by Brooks et al. (2020 – based on the analysis of 2018 HBSC data), which reported cyberbullying as more common among girls (20%) than boys (15%).
- Cosma et al. (2020), – based on analysis of four cycles of the HBSC data (2002, 2006, 2010 and 2014), reported that girls living in England, Scotland and Wales are more likely to report cyberbullying victimisation when compared to boys.⁶⁰
- Lasher and Baker (2015 – based on analysis of survey responses from 11,166 UK children aged 14–15 as part of the Longitudinal Study of Young People in England (LYPSE) study) found that girls were more likely than boys to experience bullying by phone or online (15% vs. 7%).
- Smith et al. (2019), through the comparative analysis of five large cross-national databases, suggests girls are significantly more likely to be online victims, than boys.

Within this context, Craig et al. (2020 – based on analysis of 2017–18 international HBSC data) suggest increased exposure and use of social media among girls may result in an increased risk of cyberbullying victimisation.

The finding that girls are more likely to be a victim of cyberbullying is reinforced by smaller-scale research. O'Brien and Moules (2013), for example, through the analysis of 473 young people between 11 and 19 via a web-based questionnaire, reported girls as more likely than boys to have experienced cyberbullying, witnessed it, or known someone to have been cyberbullied or someone who had cyberbullied others. Bevilacqua et al. (2017 – based on analysis of 6,667 pupils aged 11–12 years old in 40 English schools) also report that girls were more likely to be significantly bullied and cyberbullied than boys.

This review also identified evidence that girls are more likely to experience cyberbullying by social media than via other platforms (Stoilova et al., 2021). This is a finding reinforced by Monks et al. (2012 – based on a survey of children aged 7–11 years old from 5 primary schools in southeast England) who show girls to be more at risk of being bullied online (via emails or instant messenger).

⁶⁰ 5% of boys compared to 5.8% of girls in England; 4% of boys compared to 6.3% of girls in Wales; 4.3% of boys compared to 7.9% of girls in Scotland.

Despite the majority of evidence suggesting that girls are more likely to experience cyberbullying, analysis of recent CSEW data, provides alternative findings; suggesting no significant difference in the proportion of girls (20%) and boys (17%) aged 10–15 in England and Wales who had experienced an online bullying behaviour (ONS, 2020).

Overall, gender is consistently a key factor determining the prevalence of cyberbullying in children and young people. With the exception of one study, evidence shows that although cyberbullying is experienced by both girls and boys, girls are slightly more likely to be the victim of cyberbullying. No studies found a greater risk of experiencing cyberbullying among boys.

Age

Generally, the research identified by this review suggests that the likelihood of experiencing cyberbullying increases with age. This, as discussed by El Asam and Samara (2016), is typically attributed to older children having greater access to technology and being less likely to be monitored / supervised when using the internet.

Findings from 2014 HBSC data suggest that 15-year-olds are significantly more likely to experience cyberbullying than 11-year-olds. 16% of 15 year old boys reported experiencing cyberbullying compared to 10% of those aged 11; 31% of 15 year old girls reported experiencing cyberbullying compared to 16% of 11 years old girls (Brooks et al., 2014). This is a finding reinforced by Livingstone et al. (2017), which reported that older age groups were more likely to experience negative comments on a photo they had posted online (32% of 8–12-year-olds compared to 45% of 13–17-year-olds).

These findings are also reinforced by smaller-scale research. Examples include:

- Kernaghan and Elwood (2013) in their study of 494 female students aged 12–15 in Northern Ireland found that cyberbullying via instant messages was more prevalent in older girls than younger girls in the study.
- Barbovschi et al., (2014 – based on focus group and interview research with 378 children aged 9–16), reported that children aged 12–16 were more likely to report experiences of cyberbullying than younger groups.⁶¹
- Similarly, Tarapdar and Kellett, (2011 – based on analysis of 1,282 survey responses from children aged 12–15 years old in England) report 14–15-year-olds to be more likely to be cyberbullied (40% compared to 35% of 12–13-year-olds).

Ethnicity

This review identified very limited evidence on the prevalence of cyberbullying amongst children from ethnic minority backgrounds. However, analysis of CSEW data shows Asian or Asian British children are significantly less likely to have experienced online bullying (6%) than White children (21%), Black or Black British children (18%) and Mixed Ethnic group children (19%) (ONS, 2020).

⁶¹ Interviews were conducted across nine European countries, including the UK. Findings are not reported at the UK-level.

Ethnicity may also be understood by victims as a factor influencing their being targeted for cyberbullying. West (2015), through the analysis of 5,690 questionnaires from students aged 16–19 in post-compulsory education, reported that of 396 participants who reported being cyberbullied, 11% stated that ethnicity was a factor in their being targeted. However, the paper gives no indication of how frequently this is understood as the primary factor by victims, nor does it correlate this finding with the prevalence of cyberbullying among BAME young people.

Disability / long term health conditions

This review identified only one study that explored the prevalence of cyberbullying amongst children and young people with a disability and/or a long-term health condition. This came from the analysis of CSEW data, which shows that the prevalence of online bullying was significantly higher for children with a long-term illness or disability (26%) than those without (18%) (ONS, 2020).

Family background

Bevilacqua et al. (2017) – based on the analysis of 6,667 children aged 11–12 years old at 40 English schools – showed that young people from a single parent household were 44% more likely to be cyberbullied compared to those coming from a two-parent household.

Socioeconomic background

Mixed findings were reported on the relationship between socioeconomic background and cyberbullying. Bevilacqua et al. (2017) reported individual-level deprivation (low compared to medium family affluence) was associated with greater risk of being a cyberbullying victim. Similarly, Hasebrink et al. (2011), through analysis of responses to EU Kids Online survey of children aged 9–16, suggest that children from lower socioeconomic backgrounds are more likely to report being victims of online bullying. There is clearly some association with levels of poverty and chances of victimisation, which is apparent in traditional bullying research. However, the evidence does not allow full exploration.

Brooks et al. (2014), using data from the Health Behaviour in School-Aged Children (HBSC) survey that draws on responses from 5,335 students aged 11–15 years old who completed the HBSC survey in England, report mixed findings. This suggests that rates of cyberbullying appear to increase with family affluence, and that young people receiving free school meals are slightly less likely to report being a victim of cyberbullying.

Overall, the mixed findings support the earlier observation that the different studies are not strictly comparable. There are different age groups being assessed, in different settings and contexts, being asked different questions. A benchmark for these categories would need to be established but also the children and young people might not understand what is being asked of them.

LGBTQ+

As identified by Heyeres et al. (2021), there is an absence of LGBTQ+ specific research on cyberbullying. Of the research that was identified by this review of direct

relevance to LGBTQ+ young people, the majority explored online sexual harassment, hate speech or bullying offline, and were therefore out of scope of this review (Project deSHAME, 2017; Keighley, 2021). This review did identify one international evidence review that explored LGBTQ+ youth experiences of cyberbullying, which included one UK study. Abreu and Kenny (2018) carried out a systematic review and found 27 empirical studies that explore the effects of cyberbullying on LGBTQ+ youth. Findings revealed that the percentage of cyberbullying among LGBTQ+ youth ranges between 11% and 72% across studies. Such varying rates among 27 studies suggests that this would need to be a separate topic of enquiry as well as an area for further research. However, the findings in this study suggested that LGBTQ+ youth are at greater risk of cyberbullying than non-LGBTQ+ youth and this is clearly an area that would need more investigation (Abreu and Kenny, 2018).

2.3 Impacts

This section provides an overview of the evidence available on the impact of cyberbullying on the wellbeing, mental health, education and social relations of children and young people targeted by this behaviour.

2.3.1 Impacts on wellbeing and psychological distress

This review identified some evidence on the self-reported emotional impacts of cyberbullying on children and young people. Across quantitative studies, the majority of victims reported being negatively affected by cyberbullying, with feelings ranging from anger, to being upset and embarrassment.

Data from the nationally representative Crime Survey for England and Wales (March 2020), surveying children aged 10–15 years old, estimates that 22% of cyberbullying victims were emotionally affected by the experience, 47% were a little affected, and 32% were not affected at all (ONS, 2020). The EU Kids Online survey – using a representative sample of 25,142 children aged 9–16 years old who use the internet across 25 European countries⁶² – found that 85% of cyberbullying victims were upset about what happened: 31% were ‘very upset’, 24% were ‘fairly upset’, and 30% were ‘a bit upset’ (Hasebrink et al., 2011; Livingstone et al., 2011a; Livingstone et al., 2011b). In the UK, the EU Kids Online survey found that 91% of cyberbullying victims were upset by the experience (Lobe et al., 2011).

O’Brien and Moules (2013) conducted a non-representative survey of 473 young people aged 11–19 years old in England⁶³ and asked those who had experience of cyberbullying (as victims, perpetrators, witnesses, or acquaintances of victims and perpetrators) about its impacts on their health and wellbeing. Half of the 87 young people who had been victims of cyberbullying reported that online bullying had affected them, with 12.7% reporting being ‘very’ affected and 21.5% being affected ‘a little’. Over one-fifth (22.4%) of the cyberbullying victims said their confidence was affected ‘a lot’ or ‘very much’, while 32.9% said their confidence was not affected at all. Another small-scale non-representative study of 108 students aged 16–19 from an English sixth

⁶² Including the UK.

⁶³ 57.7% of the respondents were girls (n=273) and 42.3% were boys (n=200).

form school found that students who had been cyberbullied at some point had higher distress levels as indicated by self-esteem, emotional wellbeing, depression, and anxiety (Hatfield et al., 2019).

In addition, qualitative research on perceptions of social media conducted by O'Reilly et al., (2018) included six focus groups with 54 adolescents aged 11–18 years old. While not discussing their own experiences, participants in the focus groups considered cyberbullying to be isolating and to negatively impact young people's wellbeing.

Hatfield et al. (2019) found that self-reported negative feelings caused by cyberbullying victimisation included betrayal, embarrassment, feeling disrespected, shame, annoyance, and anger. A non-representative cross-national study of 5,862 students in years 8, 10, and 12 from three countries – including 2,227 English students⁶⁴ – also assessed the emotional impact of cyberbullying on victims (Ortega et al., 2012). In England, the most common reaction was anger (39.3% of victims), while 25.8% reported feeling upset, 23.6% stressed, 23.6% worried, 19.1% afraid, 18% depressed, 16.9% alone, 13.5% defensive, 12.4% embarrassed, and 18% reporting not being bothered by the cyberbullying (Ortega et al., 2012).

Overall, the evidence reviewed indicates that most cyberbullying victims report negative consequences on their wellbeing and psychological state, and that some victims experience higher levels of harm compared to other victims. Variations in estimates across studies are likely explained by differences in sampling and in approaches to measuring cyberbullying and children's negative feelings.

2.3.2 Links between cyberbullying victimisation and symptoms of psychiatric conditions

The evidence identified suggests that victims of cyberbullying face issues including depression, anxiety, post-traumatic stress symptoms, suicidal thoughts and attempts, and self-harm. However, there is no indication of the extent to which cyberbullying is causing these negative outcomes.

The Olympic Regeneration in East London (ORiEL) study surveyed 3,214 children from 25 randomly selected schools in East London when they were 12–13 years old and followed-up with the same sample one year later (Fahy et al., 2016). Findings from the 2,480 children who provided follow-up data show that victims of cyberbullying and children who were both perpetrators and victims at the same time were more likely to report symptoms of depression and social anxiety compared to peers without experiences of cyberbullying, even after adjusting for symptoms at baseline (Fahy et al., 2016).

In a non-representative survey of students aged 11–19 from four London secondary schools, the Children Revised Impact of Events Scale (CRIES) was used to measure the frequency of post-traumatic stress (PTS) symptoms in response to cyberbullying or face-to-face bullying victimisation in the previous seven days (Mateu et al., 2020). Out of the 1,516 students who completed the CRIES, 35% of cyberbullying victims, 29.2%

⁶⁴ English students were selected from nine schools in London and the Midlands and came from a mix of socio-economic and cultural backgrounds.

of perpetrators, and 28.6% of children who were both perpetrators and victims had scores above the threshold for clinically significant symptoms of PTS (Mateu et al., 2020). The study also found that being a victim or both a victim and perpetrator of cyberbullying predicted PTS symptoms, but the variance in symptoms was for the most part explained by being the victim of face-to-face bullying (Mateu et al., 2020).

The identified literature reviews provided additional evidence on the link between cyberbullying victimisation and symptoms of mental health conditions in young people. Aboujaoude's et al. (2015) review of international papers reported evidence from two meta-analyses that found strong associations between being the victim of cyberbullying and suicidal ideation. Aboujaoude et al.'s (2015) review also identified studies that reported high rates of emotional distress, depression, avoidance, fear, alexithymia,⁶⁵ insomnia, physical symptoms such as headaches, and substance use in victims of cyberbullying. However, they also highlight that there is variation across studies in the definition of mental health conditions, with most studies also focusing on moods such as sadness or fear rather than mental health disorders (Aboujaoude et al., 2015). A second literature review that discussed international evidence on the impacts of cyberbullying, also reported evidence that suicidal ideation and attempts were associated with extreme cases of cyberbullying (El Asam and Samara, 2016). In addition, reviews of literature reported that being the victim of cyberbullying was associated with self-harm (Stoilova et al., 2021), and also associated with accessing online content related to self-harm and suicide (Stoilova et al., 2021; Young Minds, 2018).

2.3.3 Impacts on education and social relations

In addition to impacts on wellbeing and mental health, the review also identified some evidence that suggests cyberbullying negatively impacts children's education and social life.

O'Brien and Moules (2013) surveyed a non-representative sample of 473 young people aged 11–19 years old and found that 28.8% of children who were targeted by cyberbullying⁶⁶ stayed away from school and 38.9% ceased to socialise outside school. West (2015) also conducted a non-representative online survey with 5,690 students aged 16–19 and attending post-compulsory education in England. Forty-two percent of cyberbullying victims reported negative impacts on their academic performance, 29.8% reported negative impacts on their school attendance, 33.3% said their ability to form online relationships was affected and 42.4% had their ability to form offline relationships affected (West, 2015). In addition, mix-methods research conducted by Ackers (2012) included focus groups with 12 Year 8 student-researchers. Participants in the focus groups were asked their views on possible signs that friends are being cyberbullied (Ackers, 2012). The young people believed that avoiding social activities and school, or avoiding the use of technology, were indicators that their peers were victims of cyberbullying (Ackers, 2012).

⁶⁵ A difficulty or inability to identify and describe one's own emotions.

⁶⁶ 87 young people in the sample had been victims of cyberbullying.

As detailed above, non-representative studies suggest a high percentage of cyberbullying victims also experience negative outcomes in their education and social relations, but higher quality, representative research would be required to draw strong conclusions. However, the consistency in findings across studies reviewed suggests that there is an association between experiencing cyberbullying and skipping school and avoiding social interactions.

These findings are also supported by evidence from literature reviews. One literature review synthesising evidence on the impacts of cyberbullying identified two studies reporting negative impacts of cyberbullying on academic experience and performance (El Asam and Samara, 2016). In addition, a third literature review which cited evidence from NSPCC on children contacting Childline⁶⁷ about bullying, indicates that online harassment can lead to face-to-face harassment at school, which leaves young people feeling unable to escape the bullying (Livingstone et al., 2017).

There is evidence to suggest that the impacts of cyberbullying on young people are associated with variables such as gender, age, and being part of the LGBTQ+ community. The EU Kids Online survey – using a representative sample of 25,142 children aged 9–16 years old who use the internet across 25 European countries⁶⁸ – found that girls were more likely than boys to report being ‘very upset’ about experiencing cyberbullying (37% compared to 23%). Evidence included in an international literature review also indicates that girls tend to experience higher levels of harm after experiences of cyberbullying compared to boys (Aboujaoude et al., 2015).

The findings on the association between age and severity of cyberbullying impacts are mixed. The EU Kids Online survey found no link between age and effects of cyberbullying on wellbeing (Hasebrink et al., 2011). In terms of likelihood of experiencing negative impacts, one cross-national study including a non-representative sample of 2,227 English students in years 8, 10, and 12 reported that younger students were more likely to be affected by cyberbullying compared to older students. However, Myers and Cowie (2019) emphasise in their literature review that cyberbullying is a cause for concern for students at each developmental stage and that there are continuities in its appearance that need to be challenged at each point in the educational lifespan. Myers and Cowie (2019) suggest that targeted interventions are needed at different stages across the educational lifespan to teach children and young people about the possible age-relevant risks and harms that they could be exposed to and what to do about it.

Lastly, a systematic review of evidence on cyberbullying and LGBT+ youth found that LGBT+ children that experience cyberbullying reported more negative mental health outcomes, including suicidal ideation and depression, and more negative educational outcomes compared to sexual minority youth that were not victims of cyberbullying (Abreu and Kenny, 2018). Similarly, the systematic review identified evidence that lesbian, gay and bisexual participants were more likely to attempt suicide after experiences of cyberbullying (Abreu and Kenny, 2018).

⁶⁷ [Childline](#) is a free and confidential counselling service for young people under 19 in the UK.

⁶⁸ Including the UK.

3 Online pornography

This chapter synthesises identified evidence on online pornography. It includes evidence on how online pornography is defined; the prevalence of children's exposure to online pornography, including frequency of viewing and the ways in which children are exposed to it; and the impacts of viewing pornography online.

This review selected 23 papers that discussed online pornography:

- 12 articles only discussed online pornography (Ringrose et al., 2012; Hökby et al., 2016; Stoilova et al., 2021; Martellozzo et al., 2020; Thurman and Obster, 2021; Mead, 2016; Baker, 2016; Belton and Hollis, 2016; NSPCC, 2016; Wespieser, 2015; Stanley et al., 2016; Jigsaw Research, 2020)
- 11 articles discussed both online and offline pornography (Livingstone and Smith, 2014; Livingstone et al., 2017; Lobe et al., 2011; Raine et al., 2020; Livingstone et al., 2011a; Massey et al., 2020; Martellozzo et al., 2017; Revealing Reality, 2020; Horvath et al., 2013; Livingstone et al., 2011b; Hasebrink et al., 2011).

Most studies focused on the relationship between young people and pornography – sometimes alongside other online harms. This review also identified two studies primarily focused on sexting that included relevant information on pornographic content (Ringrose et al., 2012; Raine et al., 2020). One study focused on harmful sexual behaviour online among young people (Belton and Hollis, 2016), and one study on the relationship between mental health and internet use (Hökby et al., 2016).

Methodologically, the studies identified included:

- Nine studies presenting survey data⁶⁹ (Lobe et al., 2011; Livingstone et al., 2011b; Livingstone et al., 2011a; Hasebrink et al., 2011; Hökby et al., 2016; Martellozzo et al., 2020; Thurman and Obster, 2021; Wespieser, 2015; Jigsaw Research, 2020);
- Eight evidence reviews (Livingstone and Smith, 2014; Livingstone et al., 2017; Stoilova et al., 2021; Raine et al., 2020; Mead, 2016; Massey et al., 2020; Belton and Hollis, 2016; Horvath et al., 2013);
- Four mixed-methods studies (Baker, 2016; Martellozzo et al., 2017; Revealing Reality, 2020; Stanley et al., 2016);
- One qualitative study (Ringrose et al., 2012); and
- One study analysing secondary data from data from the NSPCC helpline, Childline, the O2 and NSPCC Online Safety Helpline (NSPCC, 2016).

Methodological limitations

⁶⁹ The eight studies identified present data from five independent surveys. Lobe et al. (2011), Livingstone et al. (2011a), Livingstone et al. (2011b) and Hasebrink et al. (2011) all report data from the EU Kids Online survey.

The evidence discussed in this chapter has three main limitations. Firstly, this review identified significant differences across studies in terms of definitions of pornography; a focus on different age groups across studies; and focus on either only online pornography or both online and offline content. As a result of differences in study designs and focus, findings varied widely across studies – making comparisons difficult. The lack of comparable data due to differences in definition and research design was also identified in a number of literature reviews including Livingstone and Smith (2014); Stoilova et al. (2021) and Horvath et al. (2013). Secondly, this review identified differences among children of different ages and genders, but there was very limited research on how the prevalence and impact of online pornography varies by other characteristics and circumstances. A rapid evidence assessment conducted by Horvath et al. (2013) also highlighted that the relationships between pornography and children who belong to racialised communities, children who belong to the LGBTQ+ community, and children with disabilities are significantly under-researched. There is also limited evidence on how being in vulnerable circumstances relates to children's experiences with pornography (Horvath et al., 2013). Lastly, this research identified very limited data on any causal relationships between accessing pornography and experiencing harm. This is recognised as a main gap in the literature on young people and pornography (Horvath et al., 2013; Mead, 2016; Stoilova et al., 2021; Peter and Valkenburg, 2016 – cited in Raine et al., 2020).

The evidence identified by this review suggests there is limited research focusing on impacts of exposure to pornography on children and young people (Horvath et al., 2013). This is largely due to the ethical constraints and considerations required for research involving young people on the topic of pornography, and it has also been suggested that existing research in this area presents mixed findings (Baker, 2016). As such, Horvath et al. (2013) suggests there is lack of concrete understanding of children's feelings about pornography and pornographic material.

3.1 Definition

The Online Safety Bill defines pornographic content as “content of such a nature that it is reasonable to assume that it was produced solely or principally for the purpose of sexual arousal”.⁷⁰

This section outlines both the challenges with defining online pornography and the definitions used in the selected studies.

Definitions of online pornography were inconsistent across identified studies. A key difficulty in attempting to define online pornography is the wide range of material it encompasses: “from the everyday to the illegal” (Livingstone et al., 2011b, p. 49). As a result, definitions of pornography ranged across studies, from content depicting partial nudity to graphic depictions of sexual intercourse. Content considered to be pornographic may overlap with other types of material, such as humiliating or extremely violent content not primarily intended for sexual arousal, or images that are illegal (Horvath et al., 2013). Furthermore, as a result of the increased prevalence and/or normalisation of sexual themes and explicit imagery in popular culture, distinguishing

⁷⁰ Clause 66(2) of the Online Safety Bill.

pornographic content from sexualised content has become increasingly difficult (Horvath et al., 2013).⁷¹

Within this context, pornography was typically defined in two ways: content depicting sexual activities, and content intended for sexual arousal. Baker (2016) defined pornography as any content which depicts sexual activities, including websites that either describe people having sex, show clear images of graphic nudity (with genitals exposed) or people engaging in sex acts, or have video or audio content of people engaging in sex acts.

Studies that defined pornography as content intended for sexual arousal commonly cited the definition from Malamuth (2001)⁷²:

“Pornography is any sexually explicit media that are primarily intended to sexually arouse the audience.” (Malamuth, 2001, p. 11817)

Alternatively, Martellozzo et al. (2020), Martellozzo et al. (2017), and Livingstone et al. (2017) used the following definition for the purpose of collecting data from children and young people⁷³:

“[I]mages and films of people having sex or behaving sexually online. This includes semi-naked and naked images and films of people that you may have viewed or downloaded from the internet, or that someone else shared with you directly, or showed to you on their phone or computer.” (Martellozzo et al., 2020, p. 3)

3.2 Prevalence

This section provides an overview of the evidence available on the prevalence of children’s exposure to online pornography in the UK. It covers general prevalence, variation by age and gender, the frequency with which children encounter pornography, and ways in which they are exposed to it. As a result of differing definitions of pornography and varied methods of data collection (Baker, 2016; Horvath et al., 2013; Livingstone and Smith, 2014), estimates varied considerably; ranging from 11% being exposed to pornography within the past 12 months to 81% ever being exposed to pornography.

Martellozzo et al. (2020) surveyed a representative sample of 1,001 children aged 11–16 and found that 48% of the sample had seen online pornography⁷⁴. In a survey of 1,001 UK 16–17-year-olds, Thurman and Obster (2021) reported that 81% said they had seen sexually explicit videos or pictures online at least once.⁷⁵

⁷¹ This is often referred to as the ‘pornification’ of society.

⁷² This included Horvath et al. (2013), Stoilova et al. (2021), and Massey et al. (2020).

⁷³ Definitions provided to children and young people tended to be less explicit so as to be more accessible and age appropriate.

⁷⁴ Representative of the UK in terms of socioeconomic status, ethnicity, and gender.

⁷⁵ Representative of the UK in terms of gender and parental social grade.

The EU Kids Online survey⁷⁶ – including a representative sample of 1,032 9–16-year-olds living in UK – found that 11% of UK children had seen sexual images on websites in the past 12 months (Livingstone et al., 2011a; Lobe et al., 2011). Based on an analysis of the EU Kids Online data for all 25 countries, Staksrud et al. (2013) report that 14% of all children had seen sexual images in the last 12 months. Children who used social networking sites were 55% more likely to have seen sexual images on websites than those who did not use social networking sites. Similarly, in the 2013 Net Children Go Mobile survey, which interviewed 516 children aged 9–16 years old in the UK,⁷⁷ 17% of UK children reported having seen sexual images online or offline in the last year.⁷⁸ Lastly, in interviews with 2,001 children aged 12–15, with quotas set on age, gender, region, and social grade, Jigsaw Research (2020) found that 12% had seen sexual or pornographic content online.

Children’s exposure to pornography was also estimated using non-representative samples. Wespieser (2015) surveyed a non-representative sample of 14,309 children aged 7–16 from 227 schools in London, and reported that 16% had seen online content which made them feel uncomfortable or worried. Of the children who have seen concerning material, 11% reported seeing pictures of nudity or pornography online, and 5% reported seeing (unspecified) ‘rude videos’.⁷⁹

As shown in the data referenced above, there are large variations regarding the proportion of children who have seen pornographic content online. This is likely due to differing definitions of pornography, varying forms of measurement and variation in the time period being considered. However, all the studies conclude that a significant proportion of children have been exposed to pornography.

This report identified no evidence on the prevalence of children and young people being exposed to online pornography varying over time. The NSPCC (2016), however, does report an increase in children accessing advice and support about online pornography. In 2015/16, Childline provided 844 counselling sessions to children about viewing online sexually explicit images, double the number provided in 2013 (423) and up 60% from 2014/15. Similarly, it reported nearly 20,000 visits to Childline’s online pornography advice page, an increase of 33% compared to the previous year (NSPCC, 2016). However, there is a lack of clarity as to whether the increased access to support is a direct result of increased exposure to pornography among children and young people, or due to other reasons, including reduced stigma attached to seeking support in relation to pornography exposure.

⁷⁶ The EU Kids Online survey identified lower reported exposure to sexual images compared to other surveys; this may be explained by using a potentially more restrictive definition (“obviously sexual [images] – for example, showing people naked or people having sex.”), and including younger children (Livingstone et al., 2011b).

⁷⁷ The Net Children Go Mobile study used a methodology adapted from EU Kids Online.

⁷⁸ This was lower than the 28% average found across the seven European countries included in the study (Livingstone et al., 2017; Tsaliki et al., 2014).

⁷⁹ Rude content includes nudity, pornography, offensive language or swear words.

The evidence consistently reports that older children are more likely than younger children to see pornography. The EU Kids Online survey with 9–16-year-olds found that older teenagers (15–16-year-olds) were four times more likely than the youngest (11–12-year-olds) to have seen sexual images online in the last 12 months (Livingstone and Smith, 2014; Livingstone et al., 2011).⁸⁰ Martellozzo et al. (2020) also found that 65% of 15–16-year-olds reported having seen online pornography in the last 12 months, compared to 46% of 13–14-year-olds and 28% of 11–12-year-olds. Revealing Reality (2020), based on a representative sample of 1,142 UK children aged 11–17, reported that 79% of 16–17-year-olds had seen pornography (online or offline) at some point, compared to 66% of 14–15-year-olds and 51% of 11–13-year-olds.

While the studies above vary regarding the extent to which exposure to pornography increases as children get older, research consistently shows exposure increases as children age.

A rapid evidence assessment (REA) by Horvath et al. (2013) found that across the research identified, the age of first exposure to pornography varied significantly among children and young people. Martellozzo et al. (2017) found 94% of children who encountered pornography (n=447) did so by the time they were 14 years old.⁸¹ The age at which children are first exposed to pornographic content may depend on gender. Baker (2016) found a significant relationship between participants being male and having a younger age of first exposure, reporting that 83% of boys and 56% of girls reported that they had first viewed online pornography aged 14 or younger.

In addition, the evidence indicates that boys are more likely than girls to see online pornography. Findings from the EU Kids Online survey concluded that boys were more likely to encounter sexual images on websites than girls⁸² (Livingstone et al., 2011a; Hasebrink et al., 2011). Furthermore, Martellozzo et al. (2020) found that 56% of boys aged 11–16 reported having seen online pornography compared to 40% of girls. These findings are upheld by international studies, with reviews of evidence all reporting that boys are more likely to be exposed to pornography than girls (Belton and Hollis, 2016; Stoilova et al., 2021; Horvath et al., 2013). Additionally, Baker's (2016) small-scale non-representative survey found boys over 16 years old were almost 6 times more likely to have viewed pornography online, compared to girls.

On the other hand, when considering seeing sexual images across all media,⁸³ the EU Kids Online survey found no significant differences in exposure between boys and girls, for younger (15% boys, 13% girls) or older children (33% boys, 28% girls) (Livingstone et al., 2011b).

Research also suggests that children with other characteristics may also be more likely to be exposed to pornography. This includes those who are pubertally more advanced, who have higher sensation-seeking behaviour, or have weak or troubled family

⁸⁰ Based on data from 25 European countries including the UK.

⁸¹ 447 children encountered pornography and reported their age.

⁸² Based on data from 25 European countries including the UK.

⁸³ On any websites; on television, film or video/DVD, in a magazine or book; by text (SMS), images (MMS), or otherwise on the mobile phone; by Bluetooth.

relations (Peter and Valkenburg, 2016, cited in Livingstone et al., 2017), as well as those who report more psychological difficulties (Livingstone et al., 2011a).

3.2.1 Frequency of viewing pornography

The frequency with which children and young people encounter pornography online was also discussed in the literature. Of the 476 respondents aged 11–16 who had seen pornography, Martellozzo (2020) found that 34% reported seeing it once a week or more often, while 4% reported encountering pornography daily. Similarly, Thurman and Obster (2021) reported that, amongst those who had seen sexually explicit videos or pictures, the average time since last exposure was 5.5 days. Stanley et al. (2016) analysed 728 survey responses from children aged 14–17 in England and found that 19% of the English sample reported regularly watching pornography.^{84 85} Hökby et al. (2016) conducted a randomised controlled longitudinal study with school pupils aged 14–16 from seven countries,⁸⁶ including 387 participants in the UK from three schools, and found that participants spent an average of 1.73 hours per week watching pornography.

Frequency of viewing online pornography varied by children's age. Martellozzo et al. (2017) conducted an online survey with a representative sample of 1,001 children aged 11–16 in the UK and found that older children (aged 15–16 years old) had seen online pornography more frequently than younger respondents (aged 11–14 years old). Furthermore, Thurman and Obster (2021) found in a UK sample of 16–17-year-olds that of those who had seen sexually explicit materials (including videos and photos), when asked when they had last seen this type of content, the most common answer was on the day of survey completion.

Frequency of viewing online pornography also varied by gender. Boys reported more daily usage than girls, while both reported seeing online pornography at least a few times a month either intentionally or unintentionally (Martellozzo et al., 2017). Similarly, Horvath et al.'s (2013) cross-national review also concludes that boys view pornography more frequently than girls. Hökby et al. (2016) also found that boys report an average of 2.53 hours per week spent watching pornography, compared to 1.1 hours per week for girls.⁸⁷

3.2.2 Intended and unintended exposure to pornography

Martellozzo et al. (2020) report that 47% of children surveyed who accessed pornography actively searched for it. Reported reasons for accessing pornography included curiosity (Martellozzo et al., 2017); for sexual education or increasing their knowledge, including getting ideas for their own activities or developing sexual skills

⁸⁴ A total non-random sample of 3,299 children in five countries: Italy, Bulgaria, England, Cyprus, and Norway.

⁸⁵ "Regular" and "pornography" were not defined in the survey. Responses were dependent on individual children's interpretation of the question.

⁸⁶ UK, Estonia, Hungary, Italy, Lithuania, Spain, and Sweden. The UK sample was specifically based in the East of England.

⁸⁷ Across all seven countries included in the study.

and confidence (Horvath et al., 2013; Stoilova et al., 2021); for masturbation or sexual arousal; to relieve boredom or for a laugh; to break rules or oppose censorship; or to be disgusted (Horvath et al., 2013).

Some children are also unintentionally exposed to pornography. Martellozzo et al. (2020) report that 53% of children surveyed said they had seen pornographic material without actively seeking it. A literature review by Belton and Hollis (2016) found that children may be at higher risk of coming across pornographic images accidentally than adults. This is because children are frequent internet users, and because adult entertainment sites use technology (such as targeted pop-up adverts) that means once pornographic images are viewed or clicked on by a child, even if accidentally, they are more likely to come up in future (Belton and Hollis, 2016).

Children reported unintentional exposure in a number of different ways. Martellozzo et al. (2017) asked children how they first came across pornography and found that 46% of the 464 children who answered the question said it “just popped up” while 22% said that they were shown it by someone else without asking for or expecting it. Furthermore, 26% of all respondents (n=1,001) had received online pornography or links to pornography from others at some point, whether or not they had asked to receive them (Martellozzo et al., 2017). Massey et al. (2020), in their review of literature regarding children and pornography, report that young people had sought information online for something unrelated to sex, such as information about their health, and encountered pornography. Livingstone and Smith (2014) also found that unintentional viewing also happened due to pop-ups or misleadingly named websites. Horvath et al. (2013) found that other forms of unintentional exposure included being sent unsolicited images or links on messaging, emails, or chat rooms; and through video-hosting sites, social networking or image-sharing sites, and gaming websites.

Some children may also be pressured to see pornographic content. Stanley et al. (2016) reported that 7% of the English sample of 728 respondents aged 14–17 had been pressured to watch pornography by a partner. Additionally, Martellozzo et al. (2017) report that peer pressure was cited by children aged 11–16 in focus groups as a reason for watching pornography. Furthermore, NSPCC (2016) reported that, in Childline counselling sessions, children are increasingly reporting being forced to look at pornographic images on other students’ phones and risk being ridiculed if they refuse.

Findings from the review suggest that younger children seem to be more likely to see online pornography unintentionally. Revealing Reality (2020) reported that 62% of 11–13-year-olds saw pornography unintentionally compared to 46% of 16–17-year-olds. Mead (2016), in a review of 14 international studies, including one UK study, reported that adolescent males show growing interest in viewing online pornography as they get older.⁸⁸ At age 15, consumption levels for boys cluster between 20% and 60%, depending on the country. However, when approaching 18 years old, over 80% of boys in almost all samples were active consumers.

⁸⁸ Findings based on data from 14,313 boys from 13 countries and 15,031 girls from 14 countries.

Lastly, the evidence suggests that girls are less likely to deliberately access pornography, compared to boys. Mead (2016) also found that 10% of 15 year old girls intentionally accessed online pornography across countries, compared to 20% to 60% of 15 year old boys. Martellozzo et al. (2017) similarly found that 59% of boys and 25% of girls in a sample of 11–16-year-olds surveyed reported searching for online pornography. Baker (2016) also reported that the majority of girls reported accessing online pornography by accident (68%) whereas boys were more likely to report having accessed it deliberately (53%).

3.3 Impacts

3.3.1 Impacts on wellbeing and mental health

Across the existing evidence base there were a range of reported emotional impacts of viewing pornography on children and young people. Martellozzo et al. (2017) found that there were a mix of self-reported reactions to seeing online pornography for the first time;⁸⁹ including curiosity (41%); shock (27%); confusion (24%); and, sexual stimulation (17%). Hasebrink et al.'s (2011) survey of 25,142 children across 25 European countries⁹⁰ found that approximately three quarters of the sample did not find online sexual content upsetting.⁹¹ Correspondingly, Lobe et al. (2011) found that 24% of those who had seen sexual images online reported being upset or bothered by them.

However, the self-reported impact of accessing pornography on emotional wellbeing varied by children's characteristics. Hasebrink et al. (2011) found that children and young people with higher self-efficacy (e.g. those who are perceived to have the necessary ability and resources to cope with future problems) were less likely to be upset by viewing sexual content online. By contrast, those who had more psychological difficulties (e.g. emotional and peer relationship problems) were more likely to find this content upsetting.

Older children were also less likely to report finding online pornography upsetting than younger children. Research by the NPSCC (2016) found that children aged 11 and under were more likely to contact Childline with concerns about viewing sexually explicit content online than 12–18-year-olds. Generally, negative responses declined with increased exposure (e.g. repeat viewings) and age which may be a result of becoming desensitised to the material (NSPCC, 2016). In addition, girls were more likely to be upset by viewing sexual content online than boys. Hasebrink et al.'s (2011) reporting on the analysis of 25,142 survey responses from children aged 9–16 across 25 European countries as part of the EU Kids Online study, found that girls are more

⁸⁹ Conducted an online survey with 1001 11–16-year-olds and six online focus groups with 40 11–16-year-olds in the UK, and found findings based on the sentiments that participants reported feeling the first time they saw online pornography were not separated by those who had viewed it of their own volition and those who had viewed it accidentally.

⁹⁰ The sample size and demographic information was not split by geographical location, so it is not possible to determine how many children in the sample were UK-based.

⁹¹ The findings were not disaggregated by different countries; therefore, findings specific to the UK are not available.

likely than boys to be upset by viewing sexual content online. Similarly, Martellozzo et al. (2017) found that despite the majority of the sample (both girls and boys) reporting not finding online pornography scary or upsetting, girls were more likely to report feeling scared or upset in response to exposure. Boys were more likely than girls to report finding online pornography exciting, amusing and arousing, which outlines some of the differential reactions between girls and boys to online pornographic material. Using a survey with 218 young people, Baker (2016) found that the most commonly reported response when asked how they felt on viewing pornography was 'not bothered' for girls (42.8%), whereas for boys the most commonly reported response was 'excited' (37.3%).

However, accessing pornography was also found to be associated with some mental health issues. A randomised controlled longitudinal study was conducted by Hökby et al. (2016) in 2012–13 to evaluate an online mental health intervention website across different European countries, including the UK. This study found that pornography use was one of the strongest predictors for substantial impacts relating to poor mental health, a decrease in schoolwork completion and increased sleep loss across children and young people. Similarly, a study by the NSPCC (2016) reported that excessive pornography use often leads to lack of sleep, mood swings, a detrimental impact on schoolwork and difficulty concentrating at school due to viewing pornography into the early hours of the morning on school nights.

Using samples of voluntary consumption across 14 countries, Mead (2016) identified research by Voon et al. (2014) which indicated that compulsive use of online pornography is associated with significant neurological changes, largely mirroring the neurological changes present in cocaine addicts and alcoholics.

3.3.2 Impacts on attitudes and behaviour towards sex and relationships

The evidence base suggests that pornography has an impact on children and young people's attitudes towards sex and relationships. In a 2013 survey of 700 respondents, Childline (cited in NSPCC, 2016) found that 60% of respondents believed their perceptions on sex and relationships had changed as a result of viewing pornography. Horvath et al.'s (2013) rapid evidence assessment cited a health survey conducted by Mulley (2013) in the London Borough of Havering, which found that 50% of young people responding to the survey felt that pornography affected relationships. Relatedly, Livingstone et al.'s (2014) review of literature identified a survey of 500 18-year-olds conducted by the Institute for Public Policy Research (Parker, 2014) which found that 70% of the sample felt that pornography could have a detrimental impact on young people's perceptions of sex and relationships.

Martellozzo et al.'s (2017) survey and focus groups with a representative sample of children and young people found that young people (particularly older groups; 13–14 and 15–16-year-olds) demonstrated concern that exposure to pornography would lead to young people replicating observed sexual practices. Young men were more likely than the young women surveyed to report wanting to try out some of the new practices observed in online pornography. This finding was reflected in a systematic literature review by Belton and Hollis (2016), which found that pornography use led to a desire to experiment with the observed sexual behaviour among young people.

A relationship was identified between exposure to pornography and the likelihood of engaging in certain sexual activities. A literature review by Raine et al. (2020) found, albeit inconsistent, evidence of an association between pornography use and an increased likelihood of engaging in vaginal sex, oral sex and anal sex. Other studies found evidence to suggest that viewing sexually explicit material had contributed to some young people engaging in riskier online activity (e.g. online sexual activities, such as masturbating on chat sites for other people) (NSPCC, 2016). Raine et al.'s (2020) review identified studies that reported a relationship between viewing sexually explicit material and stronger permissive sexual attitudes.⁹² Research cited in Horvath et al.'s (2013) REA found that exposure to pornography increased the likelihood of feeling pressured into sexual activity and therefore being more likely to engage in sexual behaviour (Bleakley et al., 2011b).

The evidence base suggests a potential relationship between viewing pornography and negative sexual behaviour. Mixed methods research by BBFC (2020) which consisted of 36 one-to-one in-depth interviews with young people aged 16–18, four focus groups with 24 adults, and an online survey with 2,284 respondents (both parents and children aged 11–17) found that 41% of all child survey respondents who were aware of pornography agreed with the statement 'watching porn makes people less respectful of the opposite sex'.⁹³

Using a sample of 130 16–18-year-olds, Marston and Lewis (2014; cited in Massey et al., 2020) identified a relationship between pornography use in boys and a reported lack of concern for gaining consent for anal sex. However, the authors acknowledged that although there was a clear link between pornography use and the desire to engage in such sexual practices, peer pressure and belief that other people were engaging in similar sexual practices were equally as important predictive factors. Marston and Lewis (2014; cited in Massey et al., 2020) additionally found that young males who watch pornography were more likely to display a lack of concern about pain to their partner during sexual acts. Similarly Raine et al.'s (2020) literature review found that although there was a relationship between pornography use and perpetration of sexual harassment and/or sexually aggressive behaviour across studies reviewed, this relationship was often only found when violent pornographic material was viewed, or when boys had a predisposition for aggressive sexual behaviour.

Similarly, a systematic literature review by Belton and Hollis (2016) determined a relationship between the regular viewing of online pornography and the following behaviours in young people: offline harmful sexual behaviour,⁹⁴ and sexually coercive behaviour, as well as viewing extreme / illegal forms of pornography, including indecent images of children (IIOC) and bestiality. BBFC (2020) mixed methods research with

⁹² Permissive sexual attitudes were not consistently defined across the studies in the evidence review. However, Peter and Valkenburg (2016) provided an example of a having a positive attitude towards having casual sex outside of a romantic relationship (cited in Raine et al., 2020).

⁹³ The research additionally noted that there were no significant differences by gender, age, or whether the respondents had viewed pornography themselves (BBFC, 2020).

⁹⁴ "Harmful sexual behaviour (HSB) is developmentally inappropriate sexual behaviour displayed by children and young people which is harmful or abusive." See <https://learning.nspcc.org.uk/child-abuse-and-neglect/harmful-sexual-behaviour>

children and young people found that there were differences in views on consent depending on whether participants had intentionally viewed pornography. For example, 29% of the participants who had mostly watched pornography intentionally had agreed that consent was not needed if 'you knew the person really fancies you', compared to 5% of those who had mostly viewed pornography accidentally.

3.3.3 Impacts on attitudes towards women and girls

Some of the evidence identified by this review explored the association between pornography use and negative sexual behaviour towards women and girls. Stanley et al.'s (2016) mixed methods study with young people aged 13–19 years old, consisting of a school-based study and individual interviews with young people across five countries⁹⁵ found that boys who watched pornography were more likely to hold negative gender attitudes; agreeing with statements relating to sexual violence, and had a higher likelihood of engaging in sexual coercion. There was found to be a correlation between viewing pornography and the perpetration of coercive behaviours (e.g. slapping, hair-pulling) in young males (Marston and Lewis, 2014: cited in Massey et al., 2020; Wright et al., 2014: cited in Massey et al., 2020). Lemma (2021) also reported a link between the consumption of online pornography, particularly extreme pornography, and increased physical and verbal violence against women and girls. The review reported that higher consumption of pornography or extreme pornography increases the likelihood of objectifying women.

The evidence base suggests that pornography use may negatively impact girls as a result of the attitudes towards them. Research cited in Raine et al.'s (2020) literature review found that there was a relationship between viewing pornography and stronger gender-stereotypical sexual beliefs in young men, such as viewing women as sex objects.

Martellozzo et al.'s (2017) research with children and young people found that girls expressed concern that boys would compare them based on how they looked and how they acted during sex to women in pornography. This finding has been reflected in other research, with 77% of young women in Parker's (2014) survey (cited in Livingstone et al., 2017) agreed that 'pornography has led to pressure on girls or young women to look a certain way'. Relatedly, a qualitative study by Ringrose et al. (2012), with 35 young people in Year 8 and Year 10 across London schools, found that some girls felt that pornography influenced the way that boys wanted them to look. BBFC (2020) also found that there were concerns around body image for both girls and boys as a result of online pornography, with 29% of participants agreeing that 'I feel bad about my body when I see how people look in porn' and 35% agreeing that 'I worry about what other people think of my body because I don't look like the actors you see in porn'. Similarly, Lemma (2021), based on a review of literature discussing the impact of online pornography on sexual health and relationships in young people,⁹⁶ finds that consuming online pornography is associated with negative body image and lower self-esteem. It notes the number of young women choosing to have pubic hair removed and

⁹⁵ England, Cyprus, Italy, Norway and Bulgaria.

⁹⁶ This review does not distinguish the country to which findings relate. There is also no methodological information.

labiaplasty has risen in line with the increasing availability of online pornography. Similarly, research has found a correlation between exposure to online pornography and a negative view of body image in boys.

The evidence cited above indicates that exposure to pornography may impact children's perceptions of sex and relationships, and may lead to replication of practices found in pornography, increased likelihood to engage in sexual activities and harmful or aggressive behaviour, and reduced concern for consent from partners.

3.3.4 Perceived positive impacts

Despite most of the literature in the evidence base focusing on the negative or damaging impact of pornography on children and young people, there has also been a focus on the potential benefits of exposure. For example, Horvath et al.'s (2013) rapid evidence assessment highlighted that often children and young people may use pornography as a form of sexual education (in lieu of formal education). This was reflected in the findings from the BBFC (2020) survey of 1,142 children aged 11–17 in which 41% of respondents who had watched pornography felt that they had obtained at least one of four forms of learning mentioned in the survey.⁹⁷ Boys were more likely to view pornography in a positive light, as an “educational tool” (Horvath et al., 2013; cited in Livingstone et al., 2017), and more likely than women to agree that ‘pornography helps young people learn about sex’ (Livingstone et al., 2017).

⁹⁷ “The survey covered a range of elements that could be described as ‘learning’ about sex: ideas for new things to try sexually; learning about sex generally; learning how to get better at sex; and, learning what people expect from me sexually.” See <https://www.revealingreality.co.uk/wp-content/uploads/2021/07/BBFC-Young-people-and-pornography-Final-report-2401.pdf>

4 Self-harm and suicide-related online content and activity

This chapter outlines evidence around children's experiences with self-harm and suicide-related online content and activity. It includes how content related to self-harm and suicide is defined in the literature; the prevalence of children's exposure to it; and the positive and negative impacts associated with viewing and/or sharing such content. While some pro-suicide content is illegal, and has been designated a priority offence within the Online Safety Bill, this chapter includes literature on all pro-suicide content due to difficulties in differentiating between illegal and legal content across the evidence base. 16 papers that discussed self-harm and suicide were reviewed:

- Seven articles focused on both self-harm and suicide (Marchant et al., 2017; Bell, 2014; Padmanathan et al., 2018; Oksanen et al., 2016; Livingstone et al., 2017; Livingstone et al., 2011a; Katz and El Asam, 2020);
- Seven articles focused only on self-harm (Biernesser et al., 2020; Marchant et al., 2021; Dyson et al., 2016; Messina and Iwasaki, 2011; Jacob et al., 2017; Harris and Roberts, 2013; Jigsaw Research, 2020); and
- Two articles focused only on suicide (Mok, et al., 2015; Rodway et al., 2016).

The studies identified ranged in focus from surveys measuring the percentage of children who came across content promoting self-harm and suicide, studies examining the impacts of sharing and viewing self-harm visual content, to evidence reviews examining the wider issues of the relationship between internet or social media use and self-harming and suicidal behaviour.

Methodologically, the studies identified include:

- Eight evidence reviews (Marchant et al., 2017; Biernesser et al., 2020; Marchant et al., 2021; Dyson et al., 2016; Bell, 2014; Mok et al., 2015; Messina and Iwasaki, 2011; Livingstone et al., 2017);
- Five surveys (Harris and Roberts, 2013; Oksanen et al., 2016; Livingstone et al., 2011a; Jigsaw Research, 2020; Katz and El Asam, 2020);
- One mixed methods study (Padmanathan et al., 2018);
- One qualitative study (Jacob, et al., 2017); and
- One secondary data analysis of data on 145 children and young people younger than 20 years who committed suicide in England (Rodway et al., 2016).

Methodological limitations

The chapter has two main limitations. Firstly, there is insufficient UK-based primary research on both prevalence and impact. Secondly, it is not possible to report on self-harm and suicide-related content separately, because most of the evidence is focused on self-harm or does not differentiate between the two. The focus of studies included in this section of the review varied. While some focused on websites and platforms dedicated to self-harm and suicide related content and activity, others focused on

content and activity found online more generally. For some studies, the focus of the research was not clear. It is also not clear whether all the content and activity considered by studies included in this review are accessed by children on services in scope of the Online Safety Bill.

4.1 Definition

No study included in this review provided a specific definition of self-harm and suicide-related online content or activity. Rather what the studies provide is a broad range of descriptions related to self-harm and suicide, including descriptions of the associated acts; descriptions of the types of content and activity available online; and survey questions posed to participants during data collection.

Firstly, a key definition identified by this review was that of deliberate self-harm (DSH) (Harris and Roberts, 2013). This was defined as “the intentional destruction of body tissue without suicidal intent”, and was described as encompassing a wide-range of behaviours including cutting, burning, scalding, hair pulling, banging body parts, breaking bones, needle-sticking, scratching, preventing wound healing, and self-poisoning (Harris and Roberts, 2013).

Similarly, Oksanen et al. (2016) used the definition of “information about ways to deliberately harm or hurt oneself”. Under this definition, self-harm online material is included alongside that related to suicide, as well as material related to eating disorders. Correspondingly, Oksanen et.al (2016) described harm advocating online content as inherently anti-health, as it promotes physically and psychologically harmful ideas.

Other identified studies included evidence on the different types of self-harm and suicide-related content available online. According to one literature review, pro-suicide content is wide-ranging, including the description of suicide methods, explicit images (e.g. of suicides) and examples of suicide notes (Bell, 2014). Some studies also characterised self-harm and suicide related content as interaction between individuals; as online spaces can provide access to other people that want to end their lives, enable cyber-suicide pacts between strangers online, or encourage people to take their own lives (Bell, 2014).⁹⁸

In addition to focusing on harmful content and activity, some studies identified by this review described self-harm and suicide support and prevention groups online (Bell, 2014). As part of this, some studies described how self-harm and suicide online communities have varying levels of moderation, with some being led by professionals and others being moderated by peers with a history of self-harm (Messina and Iwasaki, 2011).⁹⁹

When measuring exposure to content promoting self-harm and suicide, two surveys identified by this review asked children if they saw websites where people discuss (1) ways to physically harm or hurt themselves, and (2) ways of ending their lives

⁹⁸ No information is made available on the geographic location of studies.

⁹⁹ No information is made available on the geographic location of studies.

(Oksanen et al., 2016; Livingstone et al., 2011a). Another cross-sectional study of adults and children presenting to hospital following self-harm¹⁰⁰ included data from a psychosocial assessment, asking the question: “In the period leading up to your attempt, did you use the Internet for any reasons associated with this episode (e.g., as a source of help or to investigate self-harm, suicide or suicide methods)?” (Padmanathan et al., 2018, p. 2).

4.2 Prevalence

This section provides an overview of the evidence available on the prevalence of children’s exposure to self-harm and suicide-related online content. There is very limited data on the proportion of children who view this content, and how frequently this content is accessed. It is also difficult to determine whether young people actively seek this material or access it accidentally (Livingstone et al., 2011a; Padmanathan et al., 2018). UK data on the online spread of self-harm and suicide-related online content is also scarce. The evidence available seems to indicate that children in vulnerable circumstances are more likely to be exposed to self-harm and suicide-related online content.

This review identified three surveys that measured exposure to suicide and self-harm content among young people in the UK. One survey examined exposure to self-harm and suicide content, and included a representative sample of 999 young people from the UK aged 15–30 (Oksanen et al., 2016). This study found that 19% of UK participants aged 15–18 saw self-harm content in the last 12 months, and 13% saw suicide content (Oksanen et al., 2016). In addition, Jigsaw Research (2020) conducted 2,001 online interviews with children aged 12–15 years old,¹⁰¹ 9% of which reported seeing content promoting self-harm on the internet in the last 12 months.¹⁰² A third study based on a non-representative sample of 14,944 children aged 11–16 found that one in four had seen content about suicide at some point in their life (Katz and El Asam, 2020).

In addition, one survey of intentional users of self-harm and suicide-related online content estimated the frequency of engagement (Harris and Roberts, 2013). This study found that 38% of participants accessed self-harm content daily, 33% accessed it between one and six times a week, and 13% accessed it less than once per month (Harris and Roberts, 2013).

Literature reviews provided limited evidence on the extent to which self-harm and suicide content is available online. Singaravelu (2015, cited in Marchant et al., 2021) analysed 314 websites targeted at young people,¹⁰³ and found suggestive images of

¹⁰⁰ This study includes all forms of self-harm regardless of suicidal intent.

¹⁰¹ Findings are based on a quota sample.

¹⁰² This figure also includes materials promoting eating disorders.

¹⁰³ This study used six search terms related to self-harm, suicide, and depression in four search engines to identify websites. Websites which specifically described their target audience as young people and discussed self-harm and suicide (whether positively or negatively) were included in the analysis.

self-harm in 21% of these websites. Furthermore, Biernesser et al.'s (2020)¹⁰⁴ rapid evidence review of 24 articles highlighted the potential of self-harm content to rapidly spread on social media.

Biernesser et al. (2020) also identified some limited evidence that age and gender influence engagement with self-harm and suicide online content. Survey research suggests that the likelihood of accessing self-harm and suicide online content increases with age (Livingstone et al., 2011a). Boys and young men are also more likely than girls and young women to see content promoting self-harm and suicide (Oksanen et al 2016).

Identified studies also indicate that children in vulnerable circumstances are more likely to access self-harm and suicide online content. One study based on a non-representative UK sample of 14,944 children found that young people with mental health difficulties, autistic children, children with eating disorders, and children with experiences of being in care are more likely to see content promoting self-harm (40%, 31%, 30% and 29% respectively) (Katz and El Asam, 2020). This was compared to 9% of young people with none of the vulnerabilities considered in the study (ibid). This study also reported on exposure to content promoting suicide. Four percent of young people with no vulnerabilities encounter suicide content often, in comparison to 31% of young people with eating disorders, 21% of young people with mental health difficulties, and 21% of young people who experienced being in care (Katz and El Asam, 2020). In addition, one study, analysing the results of a representative survey, found that the likelihood of exposure to online content advocating self-harm increased for young people with higher rates of online and offline victimisation (Oksanen et al., 2016).

Two studies also researched the prevalence of seeing self-harm and suicide material online amongst young people presenting to hospital for self-harm, and amongst young people who died by suicide. One cross-sectional study of 315 children and adolescents presenting to hospital following self-harm found the prevalence of suicide- or self-harm-related internet use¹⁰⁵ among this patient group was 26% (Padmanathan et al., 2018). Another study analysed secondary data¹⁰⁶ on 145 children and young people under the age of 20 who committed suicide in England (Rodway et al., 2016). 12% of these children and young people previously searched for information on suicide methods, and 9% posted suicidal ideas on social media (Rodway et al., 2016).

Another study conducting qualitative interviews with 21 young people aged 16–24 – also with histories of self-harm¹⁰⁷ – found that participants preferred particular sites that

¹⁰⁴ No information is made available on the geographic location of studies.

¹⁰⁵ Measured through responses to the question 'In the period leading up to your attempt, did you use the internet for any reasons associated with this episode (e.g., as a source of help or to investigate self-harm, suicide or suicide methods)?'

¹⁰⁶ Data included coroner's court hearings, child death investigations, criminal justice reports, and NHS reports.

¹⁰⁷ Recruitment was conducted on Facebook, and targeted communities and individuals hypothesised to have higher rates of self-harm. The research also included a high proportion of young women, with only three males participating in the study.

allowed for simple searches or tags enabling the easy identification of content, and had reduced scrutiny and moderation (Jacob et al., 2017). Harris and Roberts (2013) asked a non-representative sample of 329 intentional users of self-harm¹⁰⁸ content, 98.5% of which had a history of self-harm,¹⁰⁹ to describe the role of websites with self-harm content. Participants described websites with self-harm content as sources of support, information and community. It was also highlighted that these websites also include general mental health and life advice (Harris and Roberts, 2013).

4.3 Impacts

This section summarises the impacts of accessing self-harm and suicide online content, including exacerbating self-harming behaviour, potentially exacerbating suicidal ideation and evoking negative emotions. Thirteen studies discussed impacts associated with sharing and/or viewing self-harm and suicide related materials: eight evidence reviews based on mainly international data and five UK-based primary research projects. Overall, self-harm and suicide-related online content was found to pose both risks and potential benefits to children and young people, depending on the nature of content encountered.

One limitation of the evidence in this section is the lack of research on groups of children in vulnerable circumstances (Biernesser et al., 2020). Based on international evidence, Biernesser et al. (2020) highlighted the importance of considering variation by sex, LGBTQ+ status, familiar adversity, and mental health challenges; all of which were not identified in this review.

4.3.1 Negative impacts

The evidence included indicates that viewing and/or sharing self-harm and suicide online content may exacerbate self-harm behaviour for some internet users. Jacob et al.'s (2017) qualitative study with young people who self-harm mapped a range of negative impacts of self-harm content and communities on the internet which include: normalising or encouraging self-harm, learning and sharing practices, and exacerbating the behaviour. Another study found that around 10% of self-harm website users access written materials, images and artwork with the intention to be triggered to self-harm or find tips (Harris and Roberts, 2013). In addition, one in three participants reported negative impacts of their website use, including increased severity or frequency of their self-harm, learning new methods and competitiveness with other users (Harris and Roberts, 2013).

Images, in particular, were found to trigger the desire to self-harm, including inspiring people to emulate severe acts of self-harm or to feel competitive towards each other's self-harming behaviour (Jacob et al., 2017). Similarly, El Asam and Katz (2018) report that a systematic review by Daine et al. (2013) found that young people who went online to access information about self-harm and suicide were exposed to graphic

¹⁰⁸ The study only includes self-harm without suicidal intent.

¹⁰⁹ Participants were 23.06 years old on average, and only 69.9% reported being UK residents.

imagery of self-harm, leading them to replicate this through more violent methods of self-harm.

A systematic review of 51 articles examining the impacts on children and young people who view or share self-harm related videos and images online also reported that images can be triggering for some creators of self-harm content and users of self-injury forums (Marchant et al., 2021).

Viewing and/or sharing self-harm and suicide online content may also exacerbate suicidal feelings. Analysis of data from patients presenting to hospital following self-harm provided some evidence that self-harm and suicide-related online activity is associated with higher suicide intent among children, but this finding requires further investigation (Padmanathan et al., 2018). There is also some emerging evidence that young people are using lesser known suicide methods as a result of information accessed online (Rodway et al., 2016). This is a finding also supported by the literature review conducted by Livingstone et al. (2017).¹¹⁰ These findings are consistent with one systematic review that found that social media platforms are used to discuss suicidal ideation and plans (Dyson et al., 2016). Another evidence review found higher levels of suicidal ideation in individuals who use the internet for suicide-related reasons, but it was not possible to establish a causal link (Mok et al., 2015).¹¹¹ This study also identified a lack of research on the impact of different internet spaces, namely pro-suicide websites and prevention websites (Mok et al., 2015).

Evidence identified by this review suggests that accessing or sharing self-harm and suicide content online can also evoke negative emotions in children and young people. One representative survey found that out of 186 children who came across content promoting self-harm, 40% reported high levels of annoyance, upset or frustration (Jigsaw Research, 2020). International evidence on the impact of self-harm related videos and images also found that young people can experience negative feelings when viewing and/or sharing this content, such as anger, hostility, sadness, surprise, shock, feeling overwhelmed, depression, grief, but also ambivalence (Marchant et al., 2021).

Two studies also indicate that some young people may be at risk of starting to self-harm after accidentally accessing self-harm and suicide-related content. In a survey of self-harm website users, 9% (n=28) reported accessing these websites before self-harming themselves (Harris and Roberts, 2013). Qualitative research with young people who self-harm also found that a minority of participants accidentally accessed self-harm content when searching for emotional support, which then led to self-harm behaviour (Jacob et al., 2017).

Lastly, reviews of international evidence found that self-harm and suicide content online may isolate young people from society. They also report that this content may diminish the severity and harm associated with these behaviours through normalising or glorifying self-harm (Dyson et al., 2016; Marchant et al., 2017; Messina and Iwasaki, 2011). Other areas of concern are deliberate provocations or mocking and encouraging self-harm (Dyson et al., 2016).

¹¹⁰ No information is made available on the geographic location of studies.

¹¹¹ There is limited information on the ages of individuals included in the studies reviewed.

4.3.2 Positive impacts

The potential of online content to mitigate the risk of self-harm, especially when the content is related to self-harm without promoting the behaviour, was also discussed in the literature. One survey found that the most common reasons for engaging with websites or forums centred on self-harm were to access help and support, reduce isolation and engage in a community (Harris and Roberts, 2013). It was also common for participants to use self-harm websites to express their feelings and help others (Harris and Roberts, 2013). Furthermore, a substantial group of participants (approximately 40%) reported decreasing their self-harm as a result of using the websites (Harris and Roberts, 2013). These findings are supported by six literature reviews including international data that highlighted the opportunities for self-harm-related online activity to provide young people access to support and feelings of connectedness (Bell, 2014; Biernesser et al., 2020; Dyson et al., 2016; Marchant et al., 2017; Marchant et al., 2021; Mok et al., 2015).

On the other hand, Padmanathan et al. (2018) conducted focus groups with 10 Liaison Psychiatry Clinicians working with patients (both adults and children aged 8–18 years old) presenting to the hospital for self-harm. Findings of this research show that while clinicians were aware of help sites available online, they believed the internet is mostly detrimental to some patients due to suicide-related use, but also online bullying and trolling (Padmanathan et al., 2018). Messina and Iwasaki (2011) conducted an international literature review exploring internet use and self-harm in adolescents and young adults, which also highlighted that the potential of self-harm websites to offer support is highly dependent on their level of moderation (Messina and Iwasaki, 2011).

5 Online content and activity that promotes eating disorders

This chapter synthesises identified evidence on online content and activity that promotes eating disorders. It includes the definition of pro-eating disorder content in the literature, the prevalence of this content, children's exposure to it, and the negative impacts of viewing this content.

This review identified ten papers that discuss content and activity promoting eating disorders:

- Two ethnographic studies (Crowe and Watts, 2014; Dyke, 2013);
- One content analysis of pro-eating disorder websites and online communities (Bond, 2012);
- Four studies presenting survey data (Turja et al., 2017; Oksanen et al., 2016; Livingstone et al., 2011a; Livingstone et al., 2011b);¹¹² and
- Three evidence reviews (Rodgers and Melioli, 2015; Livingstone et al., 2017; Stoilova et al., 2021).

The focus of these studies varied; some investigated the impact of engaging with pro-eating disorder websites and some are more exploratory studies which make reflections on the content of these websites and the types of individuals who use them.

Methodological limitations

The main limitation of this evidence is the low number of studies exploring online content and activity that promotes or could give rise to eating disorders amongst children and young people in the UK. As a result, there are important gaps in the knowledge on impact and prevalence, especially when considering different groups of children. Furthermore, most of the papers synthesised do not specifically focus on children and young people. It is also not clear whether all the content and activity considered by studies included in this review are accessed by children on services in scope of the Online Safety Bill.

5.1 Definition

The evidence synthesised in this review includes discussion of a range of online content which could promote or give rise to eating disorders. However, the majority of papers explored websites mainly targeted at people with eating disorders, referred to as pro-eating disorder or pro-ED websites. Bond (2012) uses the following definition, conceptualised by Borzekowski et al. (2010): A "pro-eating disorder website is a collection of Internet pages, all assessed through a domain name or IP address, that deliver content about eating disorders such as anorexia and bulimia. This content can

¹¹² Turja et al. (2017) and Oksanen et al. (2016) present findings from the same data source, Livingstone et al. (2011a) and Livingstone et al. (2011b) present findings from EU Kids Online survey.

be conveyed through text, images, or audio, and it encourages knowledge, attitudes, and behaviours to achieve terribly low body weights".

These websites include advice and discussion about how to lose weight and feature "thinspiration", a term which describes images of extremely thin bodies and users' personal accounts of achieving extreme weight loss (Turja et al., 2017). A literature review conducted by Rodgers and Melioli (2015) revealed that many of the images shared on these websites are digitally altered to exaggerate the subject's thinness.¹¹³ They also described users' shared view of eating disorders as a lifestyle choice rather than a mental illness that they should seek treatment for. Similarly, Crowe and Watts (2014) found that users tended to see disordered eating as an expression of self-control rather than self-harm.

Many of these papers refer to pro-Ana and pro-Mia, which relate to content which explicitly promotes eating disorders (anorexia nervosa and bulimia nervosa respectively) (Crowe and Watts, 2014). However, one paper (Rodgers and Melioli, 2015) explored online content more broadly, reviewing studies with findings on any 'appearance-related material' that may have an effect on body image and disordered eating, including user-generated content on social media (e.g. Facebook and Twitter). They also reviewed papers examining 'fitspiration' content, which includes "objectifying images of individuals, generally portraying muscle definition on abdominals, arms, or legs, and appearance-targeted recommendations for diet and exercise behaviours".

5.2 Prevalence

As outlined by Crowe and Watts (2014) in their review of a seven-year ethnographic study of young people's use of the internet, it is difficult to estimate the number of pro-ED websites as they are frequently removed by host sites. In response, pro-eating disorder communities have developed mechanisms to keep their content online, and communicate via other platforms to direct other members to new websites. Further evidence for this is provided by Dyke (2013) who conducted an ethnographic study following both online pro-ED communities and a school-based eating disorder intervention. She found that pro-ED groups endured through a combination of online and offline communication, making them difficult to trace.

In a 2006 study, it was estimated that 400-500 pro-ED websites were active online, with 15,000 posts identified as discussing pro-ED content (Giles, 2006, cited in Bond, 2012). Pro-ED content was found to be prevalent on social media (Juarascio, Shoaib and Timko 2010, cited in Rodgers and Melioli, 2015).

The prevalence rates of young people viewing pro-ED content differ between studies. Livingstone et al. (2011a; Livingstone et al., 2011b), through analysis of responses to a survey of 25,142 young people in 25 European countries, including the UK,¹¹⁴ found

¹¹³ Literature review of 67 studies exploring the relationship between the internet and body image and eating concerns, some of which were UK-based.

¹¹⁴ Engagement with pro-ED content was assessed via the question: 'In the PAST YEAR, have you seen online content or online discussions where people talk about or show any of these things?... Ways to be very thin (such as being anorexic or bulimic, or "thinspiration")'

that 10% of children aged 11–16 had seen harmful content online about ways to be very thin (such as being anorexic or bulimic, or “thinspiration”) in the previous 12 months, rising to 14% for children aged 15–16. They also found that girls were considerably more likely to view this content (19% of girls aged 14–16 compared to 7% of boys). However, the study did not disaggregate the data by country, so this finding is not necessarily representative of the UK sample. Analysis of cross-national data on internet users¹¹⁵ conducted by Turja et al. (2017; Ackers, 2012; Oksanen et al., 2016), found that 21% of the UK sample had visited pro-ED websites in the past 12 months. This sample was composed of participants aged 15–30, so this higher prevalence is likely to reflect the broader age range used in this study. Across the four-country sample, participants who were female, and younger in age, were more likely to have visited the pro-ED websites. The large sample sizes of these studies suggest these are reliable estimates, and both studies used identical question wording from the EU Kids Online survey which was pre-tested and found to be a reliable and valid measure of pro-ED exposure (Livingstone et al., 2011). However, these findings fail to shed light on the kind of pro-ED content that participants had viewed, how they found it (e.g. accidentally viewing it or actively searching for it), or how they interacted with it (e.g. passively viewing it or contributing to discussions). They also fail to address whether there are differences in viewing habits for young people of different ages and genders.

The above evidence suggests that pro-eating disorder content is widely available and poses a risk for young people who are susceptible to, or already displaying, disordered eating. Turja et al. (2017) note that the proportion of young people viewing these websites is considerably higher than those receiving treatment for eating disorders and conclude that many users who visit pro-ED websites do so accidentally or due to curiosity. Despite different motivations for viewing this content, the negative impact is likely not limited to those with active eating disorders.

5.3 Impacts

Studies explored the impacts of viewing pro-eating disorder content, although there is a lack of empirical data in this area. Turja et al. (2017) investigated the relationship between viewing pro-ED content and subjective wellbeing. They found negative associations for all four sample-countries; however, this was not statistically significant for the UK data. Nevertheless, Oksanen et al. (2016) suggests that help should be provided to those visiting harm-advocating sites (such as pro-ED websites) as it could be an indicator of other psychological problems. Indeed, qualitative findings from focus groups and interviews conducted by Gordon (2021)¹¹⁶ revealed that young people felt that online pro-ED content had a negative impact on their body image and mental health. However, this source did not include details on the type of content participants had viewed or how they had interacted with it. Further research is needed to substantiate these findings.

¹¹⁵ Analysis of YouNet2013 and YouNet2014 datasets collected during a cross-national project on internet usage by young people aged 15–30 between 2013 and 2014. Datasets were collected in four countries: the US (N=51,033), Finland (N=5,555), Germany (N=5,978) and the UK (N=5,999).

¹¹⁶ A total of 42 young people aged 10–22 years old in the UK took part in online focus groups and interviews.

Other findings on impacts come from less methodologically rigorous studies which collected qualitative findings from analysis of pro-ED websites and interviews with small numbers of internet users. These papers suggest that pro-ED content may help promote the development or maintenance of eating disorders in young people. Drawing on data from an ethnographic study of internet use and online interviews with pro-ana website users, Crowe and Watts (2014) describe how these sites can legitimise negative perceptions of one's body and provide resources for those with a desire to lose excessive amounts of weight. These include advice about eating specific foods and engaging in exercises that would help them to maintain a low weight, and tips for lessening the negative side-effects of food restriction and purging. Bond (2012) found similar content across a review of 126 websites and online communities hosting pro-ED content. The content analysis describes users sharing tips on the use of diet pills and laxatives, very low calorie diets and excessive exercise (Bond, 2012). However, it is not just those contributing to pro-ED websites that are impacted; one quantitative study exploring the characteristics of 151 pro-ED website users¹¹⁷ found that participants who visited pro-ED websites did so to help maintain their eating disorders (Csipke and Horne, 2007, as cited in Rodgers and Melioli, 2015). However, data on the effects of viewing this content on the development of eating disorders, severity of symptoms and relapse are lacking.

Bond (2012) identified other risks associated with participating in pro-ED discourse online, including how users have been targeted by 'skinny porn' websites recruiting women who post images of themselves for pornographic films and escort services. Bond (2012) also describes cyberbullying in the form of aggressive and bullying comments on blog posts where images were shared. These findings reveal some of the less well-documented risks of participating in these online communities, however there is no evidence on the extent to which young people in the UK are subjected to these dangers or whether those viewing but not participating in the discourse are negatively affected. Conversely, Bond (2012) suggests that pro-ED websites may also have some positive impacts, for example, providing supportive peer environments for marginalised children. Bond cites research from Csipke and Horne (2007) which found that although passively viewing pro-ED sites was primarily associated with maintaining an eating disorder, users actively participating on these websites reported a positive impact on mental health.

In summary, the research gives preliminary evidence of the negative consequences of pro-ED content on mental health, body image, and suggests pro-ED online content can be associated with online pornography and cyberbullying. However, the significant lack of empirical research on the impact of pro-ED websites limit the conclusions that can be made about the severity of the risk imposed on young people.

¹¹⁷ 97% of participants were female. Participants were from nine countries: UK, US, Canada, Australia, Germany, Mexico, Korea, Uruguay, Puerto Rico.

6 Other online harms

This section of the report synthesises evidence on the other online harms identified by this review. This includes violent content; content promoting dangerous stunts and challenges; online content promoting the consumption of alcohol to children; and disinformation online.

6.1 Violent content and activity online

This review identified five studies that explored violent content and activity online, including prevalence of children's exposure to this content and its impact on children. For the five studies that discussed violent content, the methodologies included:

- One literature review (Livingstone et al., 2017);
- Two studies analysing survey results (Livingstone et al., 2014; NSPCC, 2017);
- One qualitative study including focus groups and interviews with children, young people, professionals, and stakeholders (Gordon et al., 2021); and
- One mixed-methods study, including a six-month analysis of social media platforms; focus groups and interviews with professionals and young people; and a literature review (Irwin-Rogers and Pinkey, 2017).

The main limitation of the evidence included in this section is that sampling for three of the studies was based on pre-existing contacts. Both NSPCC (2017) and Gordon (2021) sampled young people who were already in touch or engaged with a specific support organisation, while Irwin-Rogers and Pinkey (2017) used pre-existing professional contacts to sample for focus groups and interviews. This body of research is also largely non-representative, with limited coverage on the experiences of girls, those living in rural locations, and those not already in contact with support services (Gordon, 2021; Irwin-Rogers and Pinkey, 2017; NSPCC, 2017).

Across the evidence base 'violent content' was largely undefined. Where it was defined, it covered a wide range of content and activity, most of which were illegal and therefore not within the scope of this review.¹¹⁸

Due to the limited and inconsistent definitions of 'violent content' and varying approaches to measurement, findings on the prevalence of such content and activity varied significantly. Through survey research with 800 parents of 6–14-year-olds living in the UK who use the internet, Livingstone et al. (2017) found that just over 20% of respondents reported that their child had seen images on the internet that contained

¹¹⁸ This included 'aggressive/ violent content' (including violence, torture, killing animals), 'gory content' (including blood and pain), cruelty, killings, abuse of animals, sexual violence, violence and hatred (including violence, racism, homophobia, sexism and animal abuse), intimate partner violence and ideological violence (including violent extremism).

explicit violence in the past year.¹¹⁹ Additionally, through survey research with 9,636 European 9–16-year-olds conducted in 2010, Livingstone et al. (2014) report that 18% of participants identified violent content as a top concern online.¹²⁰ This is the second most frequently cited concern behind pornography (22%).

In an online consultation with 3,975 young people identified via Childline and NetAware¹²¹, 30% reported seeing ‘violent or hateful content’ online (NSPCC, 2017). Through focus groups and interviews with 42 children and young people aged 10–22 who engage with services provided by Catch22¹²², Gordon (2021) reported that more than 70% of young people have seen content online that they have found concerning, which includes ‘violent and explicit content’. Livingstone et al. (2014), for example, report participants encountering broadly defined ‘upsetting content’ on video-sharing sites such as YouTube. Livingstone et al. (2017) found this content was encountered on social networking sites (SNSs).

This review identified limited evidence on the impacts of violent content and activity on children. Livingstone et al. (2014) report that, of the 1,077 children who expressed an emotional response to violent content, 54% reported fear and 37% disgust. This report also suggests that boys are more concerned¹²³ about violent content than girls (21% and 16% respectively).¹²⁴

One mixed-methods study identified by this review suggested social media acts as a catalyst and trigger for serious incidents of face-to-face violence between young people (Irwin-Rogers and Pinkey, 2017). This includes live broadcasts of violence, provocation, and music videos raising tensions, triggering violent actions such as

¹¹⁹ Findings are based on the question: For the following situations, please indicate, as far as you are aware, whether or not your child has encountered them in the PAST YEAR?, with the category “Seeing images on the internet that contain explicit violence against others”.

¹²⁰ Children reported a range of risks on the internet that concerned them. Findings are based on the following question, which used self-completion: “What things on the internet would bother people about your age?”, and only include participants first mentioned risks. The categorisation of violence includes ‘aggressive/ violent content’ and ‘gory content’. This study is described as part of the wider EU Kids Online 2010 survey, which is based on 25,000 9–16 years old internet users and their parents in 25 countries, identified via a stratified random sample. Findings are not reported on a UK-level.

¹²¹ NetAware was a website produced by O2 and NSPCC that provides online safety advice to parents.

¹²² Catch22 is a not-for-profit business providing services to communities in the UK in the following areas: justice, education, vocational training and employability, young people and families, and National Citizen Service. Their website is available at: <https://www.catch-22.org.uk/>.

¹²³ Measured by the percentage of boys and girls who mentioned violent content first when asked ‘What things on the internet would bother people of about your age?’. 5,033 girls and 4,603 boys named at least one risk in response to this question.

¹²⁴ Findings are based on the 5,033 girls and 4,603 boys who mentioned at least one risk (first mentioned on first based risk).

trespassing and taunting, and stealing property.¹²⁵ The study had three research components, and findings were consistent across all three. These included a six-month analysis of social media platforms; focus groups and interviews with 20 professionals and 18 young people; and a review of international literature on this topic. While the consistency across the three strands of the research increases the reliability of the findings, further research is needed to corroborate these findings.

6.2 Online content and activity that promotes dangerous stunts and challenges

This section outlines evidence on online content and activity that promotes dangerous stunts and challenges; including how this content is defined in the literature, where possible; the prevalence of children's exposure to this type of content; and the impacts associated with exposure to such content.

This review identified five studies that explored online content and activity that promotes stunts and challenges amongst children and young people in the UK. The methodology used across these studies consisted of:

- Three non-representative surveys of young people to explore awareness and engagement in online stunts and challenges (Hadjipanayis et al., 2019; Ofcom, 2021; Katz and El-Asam, 2020);
- One survey of young people (aged 13–19 years old), parents of teenagers and educators across 10 different countries to explore awareness of online challenges and hoaxes (including hoax challenges),¹²⁶ potential motivating factors for and impact of taking part (Hilton et al., 2021); and
- One qualitative piece of research with a small number of teachers, child protection experts, and NGO staff to explore the perceived role of online stunts and challenges in promoting risk-taking behaviours (Bada and Clayton, 2020).

Overall, the identified research that explores online content and activity that promotes dangerous stunts and challenges is limited.

No consistent definition of dangerous stunts and challenges was found across the five studies identified by this review. This was, in part, due to studies exploring a wide range of stunts and challenges ranging from high-risk fake suicide/self-harm challenges

¹²⁵ Findings are based on a six-month period of analysis of social media platforms; focus groups and interviews with a total of 20 professionals, including gangs and serious youth violence workers, managers of local authority gangs teams, young people's advocates and police officers from three different force areas; focus groups and interviews with a total of 18 young people in two large UK cities; and an international review of relevant literature.

¹²⁶ The paper defines hoax challenges as a: "specific subcategory of dangerous challenges where the element of challenge is fake, but they are designed to be frightening and traumatic and thus have a negative impact on mental health. The hoax challenges we consider in this report are ones that include distressing self-harm or suicide narratives such as Momo or Blue Whale." See Hilton et al. (2021) for more information.

(Bada and Clayton, 2020) to challenges with less perceived risk, often in the form of funny videos, jokes and pranks (Ofcom, 2021; Bada and Clayton, 2020).

Hilton et al. (2021) use a broad definition to describe online challenges as 'people recording themselves online doing something that is difficult or risky, which they share to encourage others to repeat it'. They explain that challenges could be 'fun and safe' but also 'risky or dangerous which can lead to physical harm' (Hilton et al., 2021). Katz and El-Asam (2020) have a less clear definition, defining challenges as a dare for children to do 'risky things'. Meanwhile, Bada and Clayton (2020) define challenges in terms of online suicide games which include self-harm behaviour and end in suicide (Bada and Clayton, 2020). Lastly, Ofcom (2021) defines challenges with the least risk as funny videos, jokes and pranks.

Research identified by this review suggests challenges and stunts have long been a widespread practice amongst adolescents facilitated through television, radio, and print such as books and magazines. However, they are considered to be increasingly common practice amongst adolescents, proliferating via the internet (Bada and Clayton, 2020; Hilton et al., 2021).

The studies identified in this review presented similar findings on young people's awareness of dangerous online stunts and challenges. Katz and El-Asam (2020), through the analysis of non-representative survey data collected from 2,033 young people aged 11–18 living in the UK, found that just under 15% of respondents had come across websites, social media messages, or comments that 'dared them to do risky things'.¹²⁷ This included content encouraging people to harm themselves, to support religious extremist or terrorist acts (both 12.5%), to promote violence, hatred or racist views (26%) or to bulk up their bodies (34%). Similarly, Hilton et al. (2021), through the analysis of 5,400 survey responses from young people aged 13–19¹²⁸ across a variety of countries including the UK, report that, of the 73% of respondents who reported being aware of online challenges in general,¹²⁹ 17% reported awareness of challenges that were risky or dangerous.

In addition to outlining young people's awareness of risky or dangerous stunts or challenges, Hilton et al. (2021) also explore young people's active participation in stunts and challenges. This study reported that 21% of respondents had participated in an online challenge, of which 2% reported the challenge as risky or dangerous. This study also suggests that the numbers of those participating in stunts and challenges declines with age with 14% of 13–15-year-olds participating in challenges online compared with 9% of 18–19-year-olds.

Hilton et al. (2021) also explore the reasons behind young people engaging in online stunts and challenges. The most commonly reported reasons include to obtain views, comments, and likes (50%), and impressing others (46%). As part of this, Hilton et al.

¹²⁷ In response to the question: 'Have you ever come across websites, social media messages or comments that dare you to do risky things?'

¹²⁸ The 5,400 respondents included 1,800 13–15-year-olds, 1,800 16–17-year-olds and 1,800 18–19-year-olds.

¹²⁹ Survey question not listed and UK sub-sample not reported.

(2021) report positive impacts of participating in an online challenge from respondents, with 64% stating that taking part in a challenge had positively impacted friendships and relationships.¹³⁰ This is a finding reinforced by Bada and Clayton (2020) which, through five qualitative interviews with teachers, child protection experts and NGO staff reported young people enjoy the 'challenge culture', viewing it as 'cool and trendy'.

Bada and Clayton (2020), however, also highlight the potential negative impacts of 'challenge culture'. Participant observations are used to show how dangerous ideas about suicide games can spread quickly amongst groups of children in school, with children being peer pressured to watch and talk about suicide games outside of school hours. Additionally, it was also noted that there was a lack of accountability by social media platforms to prevent the circulation of dangerous videos involving suicide-related content.

6.3 Online content and activity that promotes the consumption of alcohol

This review identified seven studies that explored online content and activity that promotes the consumption of alcohol amongst children and young people in the UK. All the studies identified focused on the influence of alcohol marketing¹³¹ or of social media on youth alcohol consumption. The methodologies of the included studies were:

- Three studies analysing non-representative survey results¹³² (Critchlow et al., 2019; Gordon et al., 2011; Ng Fat et al., 2021);
- Three qualitative studies using focus groups and interviews (Atkinson and Sumnall, 2016; MacArthur et al., 2020; Purves et al., 2018); and
- One systematic evidence review (Gupta et al., 2016).

The evidence in this section has three main limitations. Firstly, studies noted that the findings may not be applicable to the wider population, due to studies taking place in one specific location (Atkinson and Sumnall, 2016; Gordon et al., 2011; MacArthur et al., 2020; Purves et al., 2018). Secondly, both Purves et al. (2018) and Atkinson and Sumnall (2016) noted that, due to using focus groups, participants may have edited their drinking practices to be more socially acceptable or have been influenced by other participants. Thirdly, a lack of detail in some studies' data collection, such as a limited list of types of alcohol marketing material, lack of information from participants about volume or type of alcohol consumed, and the self-reported nature of information collected from participants limited the accuracy and level of analysis that could be

¹³⁰ The proportion of those who took part in risky or dangerous stunts or challenges, however, is unclear.

¹³¹ Across the studies identified, alcohol marketing typically refers to alcohol-related content and advertising online, including via social media. Purves et al., (2018) define social media as 'an important part of the alcohol industry's multi-platform marketing strategies'.

¹³² Two surveys were solely cross-sectional, one was both cross-sectional and longitudinal (Ng Fat et al., 2021).

carried out (Critchlow et al., 2019; Gordon et al., 2011; Ng Fat et al., 2021; Purves et al., 2018).

As outlined by Gordon et al. (2011), much of the research about the influence of alcohol marketing has historically focused on television, radio, and print advertising. There are, however, a few studies that, at least partly, focus on social media marketing, including the role of user-generated content (Gordon et al., 2011).

Gordon et al. (2011), through the analysis of survey responses from 920 school pupils living in West Scotland aged 12–14, found a statistically significant relationship between greater awareness of alcohol marketing and increased likelihood of respondents consuming alcohol, both at the time of the research and in the future.¹³³ This included statistically significant associations between reported consumption of alcohol and awareness of alcohol marketing on ‘new media’ and ‘electronic marketing’, including via social networking sites.¹³⁴ This is a finding corroborated by international research, with studies conducted in North America, Australia, and New Zealand also reporting significant associations between exposure to internet-based alcohol-related content and positive attitudes towards alcohol consumption amongst young people (Gupta et al., 2016).

Some of the research identified by this review explored young people’s active participation in alcohol marketing online. Critchlow et al. (2019), through the analysis of 3,339 online survey responses from young people aged 11–19 years old living in the UK, found that 13% of respondents had participated in at least one form of alcohol marketing on social media,¹³⁵ and 12% had uploaded a social media status or pictures of themselves or friends drinking alcohol¹³⁶ (Critchlow et al., 2019). This study also suggests that being a higher-risk drinker¹³⁷ was positively associated with participation with alcohol-related marketing on social media. Whether participation in alcohol-related marketing results in higher-risk alcohol consumption amongst young people, or higher-risk drinkers are just more likely to engage with and create alcohol-related content, however, is unclear.

Qualitative research explored the rationale behind young people’s engagement with alcohol-related content online. The findings of this research collectively report that

¹³³ Drinking status was reported via the question: ‘Have you ever had a proper alcoholic drink—a whole drink, not just a sip? Drinking intentions were reported with the question: ‘Do you think you will drink alcohol at any time during the next year?’.

¹³⁴ These findings on the role of are however, subject to small confidence intervals albeit within a small sample of 72.

¹³⁵ Participation is defined as liking, sharing, following, entering a competition, and/or searching for content related to alcoholic brand or drink. For those under the legal purchase age for alcohol (n=817), the proportion of respondents who reported participating in alcohol marketing was 10%.

¹³⁶ For those under the legal purchase age for alcohol (n=817), the proportion of respondents who reported posting alcohol-related content was 8%.

¹³⁷ Defined as receiving a score of 5 or above on the Alcohol Use Disorders Identification Test - Consumption (AUDIT-C) which assesses frequency of consumption, units consumed in a typical drinking occasion, and frequency of heavy episodic drinking.

social media plays a key role in adolescent drinking behaviour. Purves et al. (2018), for example, through focus group research with 48 children aged 14–17 years old in Central Scotland, report that participants publicly engage with alcohol marketing on social media to garner peer acceptance and to develop and portray drinking identities that affirm their social identities. This included their gender and sexuality, as some drinks were seen to be associated with certain genders and sexual identities¹³⁸ (Purves et al., 2018). These findings are reinforced by MacArthur et al. (2020) which, through qualitative research with 42 young people (aged 14–18 years old) living in the South West of England, reported participants posted pictures of themselves online drinking alcohol to demonstrate and enhance their popularity, as well as to promote perceptions of maturity and avoid social exclusion (MacArthur et al., 2020).

Atkinson and Sumnall (2016), through focus group research with 37 young women (aged 16–21 years old) living in the North West of England suggest that the role and use of social media in young people's drinking cultures is heavily gendered, with young women in particular using social media to post images of drinking alcohol as a way of documenting active social lives and fun interactions with friends. It was also suggested that young women's primarily positive portrayal of drinking alcohol on SNS could lead to a normalisation of this type of behaviour in this population.

Additionally, participants who took part in the qualitative studies identified by this review described alcohol-related content on social media as reinforcing almost exclusively positive views of alcohol consumption, omitting negative consequences such as addiction (Atkinson and Sumnall, 2016; MacArthur et al., 2020). Participants across studies also reported social media contributing to the social pressure to drink at a young age (MacArthur et al., 2020). This is a finding reinforced by Ng Fat et al. (2021) which, through the analysis of 2011–13 and 2014–16 'Understanding Society' data¹³⁹, suggests an association between heavier social media use and more frequent alcohol consumption amongst 10–15 and 16–19-year-olds in the UK.¹⁴⁰ This study therefore suggests that the use of social media encourages alcohol consumption amongst young people and normalises underage drinking practices (Ng Fat et al., 2016).

Finally, participants across studies also expressed concerns around the reputational risk of posting content online related to their consumption of alcohol, including potentially negative judgements from peers, parents, and future employers (Atkinson and Sumnall, 2016; MacArthur et al., 2020).

There remain evidence gaps in the literature, as noted by multiple studies. Future research could consider longitudinal research with data collected at more points in time

¹³⁸ For example, WKD was associated with women, gay people, and the very young, and was viewed as in opposition to hegemonic masculinity due to its low alcohol content.

¹³⁹ Understanding Society is an ongoing UK longitudinal household study covering a range of social, economic and behavioral topics. Their website is available at: <https://www.understandingsociety.ac.uk>.

¹⁴⁰ Cross-sectional analyses are based on data from 4,093 children aged 10–15 years old and 2,689 young people aged 16–19 years old in 2011–13. Longitudinal models are based on data from 2,588 children aged 10–15 years old and 1,057 young people aged 16–19 years old in 2011–13 and 2016–19.

to explore the potential causal relationship between exposure to internet-based alcohol content and alcohol use in young people (Gupta et al., 2016; Ng Fat et al., 2021). Additionally, future research is needed into alcohol marketing content on social media platforms currently rising in popularity, due to the rapid changes in young people's favoured platforms (Ng Fat et al., 2021; Purves et al., 2018).

6.4 Online misinformation

This review identified six studies that explore children and young people's understanding and experience of online disinformation, misinformation, and inaccurate information in the UK. The evidence synthesised in this section includes:

- One study discussing both disinformation and misinformation¹⁴¹ (Bartlett and Miller, 2011);
- One study discussing fake news specifically (Jigsaw Research, 2020);
- One study discussing inaccurate information online (Hadjipanays et al., 2019);
- One study discussing edited images on social networking sites (Goodyear et al., 2021); and
- Two studies discussing how children approach new websites and decide whether they are trustworthy or not (Ofcom, 2021; Wespieser, 2015).

Methodologically, the studies comprised:

- Three studies analysing non-representative, cross-sectional survey data (Jigsaw Research, 2020; Ofcom, 2021; Wespieser, 2015);
- One qualitative study (Goodyear et al., 2021);
- One literature review (Hadjipanayis et al., 2019); and
- One mixed methods study, including a review of the literature and a survey of teachers (Bartlett and Miller, 2011).

The studies identified in this review presented a range of views on what constituted disinformation, ranging from inaccurate information (Hadjipanayis et al., 2019) to fake news (Jigsaw Research, 2020). The evidence included in this section covers the prevalence and the definitions of misinformation to a limited degree, and did not discuss the impacts of misinformation.

There is significant variation in how studies explored and reported prevalence regarding disinformation and misinformation. For example, some look at the proportion of children who are able to consider whether a website or application can be trusted (Wespieser, 2015), while Jigsaw Research, (2020) considers how many children or young people have viewed fake news online.

¹⁴¹ Misinformation includes false information which spreads, regardless of whether it was intended to mislead. Disinformation is a subset of misinformation which contains intentionally incorrect information.

Generally, studies suggest that, with the increasing reach of online sites and the sharing functions on many social media platforms, disinformation and misinformation can reach large numbers of children in a short time period and become well-established (Bartlett and Miller, 2011).

A few studies identified by this review explored the potential reasons behind the increase in young people's consumption of disinformation and misinformation online. An Ofcom report (2021) analyses a large amount of quantitative data collected through a mixture of in-person and online interviews from young people aged 5–15, as well as media access and use by young children aged 3–4 years old. The report concludes that increased access to information online combined with a lower likelihood of being able to critically discern different types of online information has the potential to lead to greater consumption of untrue information. The report highlights how, in the past year, young people are consuming a greater amount of information in the form of newly discovered sites or applications linked to online home learning or finding alternative forms of entertainment (Ofcom, 2021).

It has been difficult for researchers to assess the capacity of disinformation and misinformation to cause harm to children. As such, the studies identified in this review suggest a great quantity of misinformation is available online but, overall, there is limited research into identifying its prevalence or impact on children.

7 Conclusions

Overall, this review found that while there is a high-volume of research focused on online harms generally (as evidenced by high returns at the initial literature searching stage), much of that research falls out of the specific scope of this review. This is for several reasons. Firstly, much of the research is international and does not provide or disaggregate UK data. Secondly, there is a lack of primary research that focuses specifically on the prevalence and impacts of content and activity on children and young people in the UK. This is largely due to ethical challenges of conducting research with children and young people across much of the content and activity in scope of this review.

This review also identified an uneven evidence base. For some subject areas, such as cyberbullying and pornography, there is a high volume of research. The findings of this research, however, are not always consistent. This is as a result of varied approaches to definition and the measurement of both prevalence and impact.

For other subject areas, such as self-harm, suicide and eating disorders, a more limited amount of research within scope of this REA is available. Much of the research that is available is exploratory; often composed of non-representative survey research, qualitative exploration or digital ethnography, which provide useful, but limited, insight into prevalence and impact.

Research that focuses on ‘emerging harms’, such as content and activity that promotes alcohol consumption, dangerous stunts and challenges, and misinformation within scope of this review is limited, and in its infancy. This is largely due to the evolving nature of the harm itself. The evidence base on violent content is particularly disparate, encompassing a wide range of behaviour, much of which is illegal and therefore out of the scope of this review.

This review also identified that the evidence base has several methodological limitations. These limitations includes a lack of consistency in the definition of content and activity being investigated; a lack of consistency in the measurement of prevalence and impact; variable definitions of children and young people; a lack of distinction regarding the platforms under investigation (often exploring children and young people’s use of “social media” or participation in “online spaces” generally); and frequent coverage of illegal content and activity, which is out of the scope of this review.

Definitions of online harms

Across the online harms explored throughout this review, the consistency of definitions varied. Cyberbullying and online pornography had more established definitions within the literature. For cyberbullying, this included comparisons with offline bullying and exploration of key differences between the two. For pornography, definitions focused on content depicting sexual activities and/or content intended to be sexually arousing.

In contrast, there were no consistent definitions for content promoting self-harm, suicide or eating disorders. Definitions in the literature regarding self-harm generally focused on defining the act of self-harm itself rather than defining content promoting self-harm online. For studies focusing on eating disorders, these broadly focused on

websites specifically targeted at those with existing eating disorders, rather than considering the range of content online that may promote eating disorders. Definitions for content promoting eating disorders included a wide range of content, including that which related to encouraging this behaviour, sharing knowledge, attitudes, and behaviours related to eating disorders.

Similarly, literature discussing violent content and that discussing content promoting stunts and challenges lacked consistent definition. Much violent content is illegal, and therefore outside the scope of this review, which may have affected the extent to which this type of content could be defined. For content and activity promoting stunts and challenges, the studies explored a broad range of stunts and challenges, from mainly harmless jokes, pranks, or funny videos to high-risk fake self-harm or suicide challenges. The significant variation in the characteristics and effects of these challenges may make it difficult to provide a comprehensive definition.

For content and activity promoting alcohol consumption, all studies focused on alcohol marketing or the influence of social media on drinking alcohol. While these studies included a definition of alcohol marketing, this is only one type of online content which promotes the consumption of alcohol, and there was no broad definition for all content promoting alcohol consumption.

The lack of a specific definition for content promoting harms offline such as self-harm and suicide, eating disorders, violence and alcohol consumption may be explained by the fact that each definition would have to cover the online content under consideration (which may encompass a range of material), the offline activity it promotes or it is related to, and the relationship between the content and activity.

Generally, to be able to fully understand prevalence and impacts, more consistent definitions need to be used across studies or further research is required to establish how different online harms should be defined.

Prevalence levels of online harms

The research identified estimates that at least one in ten children and young people living in the UK experience each of following online harms¹⁴²: cyberbullying, online pornography, self-harm and suicide online content and content promoting eating disorders. The review did not identify reliable estimates of exposure to violent content, online content and activity that promotes stunts and challenges and content and activity that promotes alcohol consumption.

Reliable data indicates that a significant minority (ranging from 8% to 19%) of children and young people in the UK experience cyberbullying. Exposure to pornography is a highly prevalent online harm, with estimates ranging from 11% young people being exposed to pornography within the past 12 months, to 81% being exposed to pornography ever. By comparison, estimates of exposure to self-harm and suicide online content range from 9% of 12–15-year-olds seeing this content in the last 12 months, to 25% of 11–16-year-olds being exposed at some point in their life. In the case of online content promoting eating disorders, higher quality evidence estimates around 10% of children aged 11–16 have come across eating disorder-related online content. Variations in results are likely due to inconsistent definitions and

¹⁴² Content and activity which is illegal in the UK was excluded from the scope of this review.

measurement; different sampling approaches; variation in the demographic characteristics of participants, and variation in the time period being considered. This evidence on content related to self-harm, suicide and eating disorders is limited, with insufficient UK-based primary research exploring prevalence.

The evidence also suggests girls are more likely than boys to experience cyberbullying and be exposed to content promoting eating disorders, while boys are more likely to access online pornography or content related to self-harm and suicide. The likelihood of exposure to cyberbullying and pornography also seem to increase with age. This may be explained, in part, by higher levels of internet use and lower levels of supervision when using the internet.

Impacts of online harms

The evidence base regarding the impacts of online harms to children varied significantly between different harms, from a large body of evidence exploring the impacts of cyberbullying to no evidence discussing the impacts of content and activity promoting stunts and challenges. Broadly, two main impacts from online harms were identified: emotional and psychological harm and changes in attitudes and behaviours.

Research considering the impacts of cyberbullying, online pornography, content promoting self-harm and suicide, eating disorders, and violence indicate that these kinds of content led to negative emotional and psychological consequences for children. This included children being upset, having lower self-esteem and poor body image, and experiencing symptoms of mental health problems including depression, anxiety, post-traumatic stress, and suicidal ideation.

Impacts on children's attitudes and behaviours included changes in attitudes towards sex and relationships, and more positive views regarding alcohol consumption. Changes in behaviour included missing school, increased likelihood of participating in sexual activities, increased self-harming behaviour, social media acting as a catalyst for face-to-face violence, and increased underage alcohol consumption.

Emerging evidence also indicates that some children can be positively impacted by accessing material such as pornography or content related to self-harm, suicide, eating disorders or stunts and challenges – depending on the type and purpose of content.

Most of the research regarding impacts of online content and activity is cross-sectional, and often small-scale, relying on children to report the impacts they experienced. Longitudinal, representative research with children, using consistent impact measurements over time, is required to establish causal links between online content and harms experienced by children.

Evidence gaps and future research

This evidence review has sought to establish the nature of online harms, whether they affect particular groups of children more strongly than others, and what the impacts of exposure to online harms are. The findings of this review suggest evidence gaps across many of these areas. In order to fill these evidence gaps, in-depth qualitative studies to fully understand the complexity and range of issues, as well as robust longitudinal studies that can track both prevalence and impact over time, are needed.

Furthermore, given that technology and platforms continue to evolve rapidly, the need for regular reviews, adjustments and additional research is likely to remain a key part of understanding this subject area.

Based on the evidence discussed in this review, we have drawn out key next steps for further investigation:

In subject areas, such as cyberbullying, there are already representative and robust evidence sources that can be built upon (such as the Crime Survey for England and Wales, the Healthy Behaviours in School-Aged Children, and the Longitudinal Study of Young People in England). Future work in this area could include a focused review of what questions other countries ask on the prevalence and, particularly, the impact of harm to children, and coordination with other large-scale studies to ensure that relevant questions are included.

Emerging harms, in particular, are in need of much more thorough investigation. Here, there is a need to better understand the mechanisms that lead to content and activity being harmful and impact on different groups of children. Since this is a constantly evolving field driven by new technology, the evidence suggests definitions should focus on the specific nature of content and activity under investigation, rather than seeking to attribute them to the platforms and online spaces active or popular at the time.

Furthermore, for the purposes of research, it is recommended that overarching terms, such as 'online harms', should typically be avoided, unless supplemented by a catalogue of clear definitions of the specific content and activity under investigation. This is because these overarching terms aggregate a wide range of content and activity that often blurs the lines between what is legal and illegal, but also fails to differentiate between the reach and impact of different harms.

In terms of next steps to better understand the nature and complexity of emerging harms, we would recommend consultation with experts and qualitative research with different groups of children. Once there is a better understanding of the nature of these emerging harms, it will be possible to develop and test appropriate survey questions. An international review of existing survey questions in other countries would also be useful here. This process should actively contribute to the design and delivery of longitudinal research. The practical and ethical challenges of conducting research with children and young people on online harms, however, are significant and there will have to be very careful consideration and planning in regards to the research aim of establishing causality between exposure to harmful content and activity and impact.

A significant evidence gap identified by this review is research that explores the nature and impacts of harmful content and activity across different groups of children. Only in research that explores cyberbullying and online pornography are age and gender relatively well explored. This is not the case for other subject areas. Furthermore, research on the experiences of other groups of children, based on disability, ethnicity, religion, sexual orientation, social background and other vulnerabilities is largely non-existent, and in need of further exploration.

Finally, given the lack of, and challenges in undertaking primary research in this area, opportunities to access data held by services in scope of the Online Safety Bill should be explored, to help fill evidence gaps.

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Appendix A. Search terms and strings

Appendix table A1 Search terms for main harms in academic databases

| Type of harm | Search terms |
|-----------------------|---|
| Cyberbullying | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR <i>internet</i> OR <i>messag*</i> OR <i>streaming</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>adolescen*</i> OR <i>youth</i> OR <i>teen*</i>)) AND (TITLE-ABS-KEY (<i>cyberbullying</i> OR <i>bullying</i> OR <i>victimi*</i> OR <i>harass*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |
| Pornography | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR " <i>internet</i> " OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>porn*</i> OR <i>explic*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |
| Violence content | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR " <i>internet</i> " OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>violen*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |
| Pro-self-harm content | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR " <i>internet</i> " OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (" <i>self harm</i> " OR " <i>self-harm</i> " OR " <i>self-injury</i> " OR " <i>self injury</i> ")) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |
| Pro-suicide content | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>suicid*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |
| Eating disorders | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>eat*</i> OR <i>bulim*</i> OR <i>anorex*</i> OR " <i>pro-ana</i> " OR " <i>pro-mia</i> ")) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |

Appendix table A2 Search terms for emerging harms in academic databases

| Type of harm | Search terms |
|------------------|--|
| Illegal activity | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR <i>internet</i> OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>illegal</i> OR <i>unlawful</i> OR <i>criminal</i> OR <i>crime</i> OR <i>offend*</i> OR <i>delinquen*</i> OR <i>gang</i> AND NOT " <i>sex* grooming</i> " AND NOT " <i>sex* exploit*</i> " AND NOT " <i>sex* offend*</i> ")) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , " <i>ar</i> ")) AND (LIMIT-TO (LANGUAGE , " <i>English</i> ")) AND (LIMIT-TO (AFFILCOUNTRY , " <i>United Kingdom</i> ")) |

| | |
|-----------------------|---|
| Drugs | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR <i>internet</i> OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>substance</i> OR <i>drug*</i> OR <i>deal*</i> OR <i>gang*</i>) AND <i>illegal</i> OR <i>illicit</i> OR <i>prohibit*</i> OR <i>forbidden</i> OR <i>use</i> OR <i>consum*</i> OR <i>smoke</i> OR <i>psychoactive</i> OR <i>cannabis</i> OR <i>marijuana</i> OR <i>stimulant</i> OR <i>opioid</i> OR <i>depressant</i> OR <i>dissociative</i> OR <i>psychedelic</i> OR <i>empathogen</i> OR <i>*amphetamine</i> OR <i>cocaine</i> OR <i>crack</i> OR <i>khat</i> OR <i>ecstasy</i> OR <i>pills</i> OR <i>mdma</i> OR <i>mda</i> OR <i>lsd</i> OR <i>mushrooms</i> OR <i>ketamine</i> OR <i>solvent*</i> OR <i>inhalant*</i> OR <i>heroin</i> OR <i>methadone</i> OR <i>ghb</i> OR <i>hallucinong*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) |
| Alcohol | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR <i>internet</i> OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>alcohol*</i> OR <i>drink*</i> AND <i>risk*</i> OR <i>harm*</i> NOT <i>preg*</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) |
| Disinformation | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR " <i>internet</i> " OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>disinform*</i> OR <i>misinform*</i> OR <i>disinform*</i> OR <i>mis-inform*</i> OR " <i>fake news</i> " OR " <i>fake-news</i> " OR " <i>false news</i> " OR " <i>false info*</i> " OR <i>hoax</i> OR <i>mislead*</i> OR <i>misled*</i> OR <i>deceiv*</i> OR <i>propaganda</i> OR " <i>scare-mongering</i> " OR <i>scaremongering</i> OR " <i>fear-mongering</i> " OR <i>fearmongering</i> OR <i>radicaliz*</i> OR <i>extremist</i> OR <i>extremism</i>)) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) |
| Challenges and stunts | (TITLE-ABS-KEY (<i>online</i> OR " <i>social media</i> " OR <i>digital</i> OR " <i>gaming</i> " OR <i>internet</i> OR <i>messag*</i>)) AND (TITLE-ABS-KEY (<i>child*</i> OR <i>young*</i> OR <i>adolescen*</i>)) AND (TITLE-ABS-KEY (<i>stunt*</i> OR <i>hoax*</i> OR <i>trend*</i> OR " <i>virtual challenge*</i> " OR " <i>viral challenge*</i> " OR " <i>online challenge*</i> " OR " <i>dangerous challenge*</i> " OR " <i>social media challenge*</i> " OR " <i>digital challenge*</i> " OR " <i>gaming challenge*</i> " OR " <i>internet challenge*</i> " OR " <i>platform challenge*</i> " OR " <i>web challenge*</i> " OR " <i>web-based challenge*</i> " OR " <i>viral trend*</i> " OR " <i>online trend*</i> " OR " <i>social media trend*</i> " OR " <i>internet trend*</i> " OR " <i>suicide game*</i> " OR " <i>suicide challenge*</i> " OR " <i>self-harm challenge*</i> " OR " <i>cinnamon challenge*</i> " OR " <i>fire challenge*</i> " OR " <i>momo challenge*</i> " OR " <i>blue whale</i> " OR " <i>coronavirus challenge*</i> " OR " <i>silhouette challenge*</i> " OR " <i>nutmeg challenge*</i> " OR " <i>benadryl challenge*</i> " OR " <i>blackout challenge*</i> " OR " <i>standupchallenge</i> " OR " <i>eraser challenge*</i> ")) AND PUBYEAR > 2010 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (AFFILCOUNTRY , "United Kingdom")) |

Appendix B. List of reviewed websites

| Category | Name | Website |
|--|---|---|
| Organisations and charities with campaigns / research about online harms (UK) | 5Rights | https://5rightsfoundation.com/ |
| | Age Verification Providers association | https://avpassociation.com/ |
| | Anti-Bullying Alliance | https://anti-bullyingalliance.org.uk/ |
| | Barnardos | https://www.barnardos.org.uk/ |
| | Carnegie Trust | https://www.carnegieuktrust.org.uk |
| | Catch 22 | https://www.catch-22.org.uk/ |
| | Childnet | https://www.childnet.com/ |
| | Children's Charities' Coalition on Internet Safety | http://www.chis.org.uk/ |
| | Diana Award | https://diana-award.org.uk/ |
| | Ditch the Label | https://www.ditchthelabel.org/ |
| | Girlguiding | https://www.girlguiding.org.uk/ |
| | Glitch | https://glitchcharity.co.uk/ |
| | Kidscape | https://www.kidscape.org.uk/ |
| | MIND | https://www.mind.org.uk |
| | NSPCC | https://www.nspcc.org.uk/ |
| | Papyrus | https://www.papyrus-uk.org/ |
| | Samaritans | https://www.samaritans.org/ |
| | The Social Switch project | https://www.thesocialswitchproject.org.uk/ |
| | The Naked Truth Project | https://thenakedtruthproject.com/ |
| | UK Council for Child Internet Safety | https://www.gov.uk/government/organisations/uk-council-for-internet-safety |
| UK Safer Internet Centre | https://saferinternet.org.uk/ | |
| Unicef | https://www.unicef.org.uk/ | |
| Youngminds | https://www.youngminds.org.uk/ | |
| International organisations and charities with campaigns / research about online harms (International) | ENACSO | http://www.enacso.eu/ |
| | Enough is Enough | https://www.enough.org/ |
| | Internet Watch Foundation (IWF) | https://www.iwf.org.uk/ |
| | Media Smarts (Canada) | https://mediasmarts.ca/parents |
| | Power of Zero | https://powerof0.org/ |
| | SWGfL | https://swgfl.org.uk/ |
| Industry organisations and companies | CAP: Child authentication and Protection | https://www.capcertified.com/ |
| | Internetmatters.org | https://www.internetmatters.org/ |
| | Logically | https://www.logically.ai/ |

| Category | Name | Website |
|----------------------------|---|--|
| | Moonshot CVE | https://moonshotteam.com/ |
| | OECD | https://www.oecd.org/ |
| | Ofcom | https://www.ofcom.org.uk/home |
| | Office for National Statistics (ONS) | https://www.ons.gov.uk/ |
| | Online Safety Tech Industry Association | https://ostia.org.uk/ |
| | Public Health England | https://www.gov.uk/government/organisations/uk-health-security-agency https://www.gov.uk/government/organisations/office-for-health-improvement-and-disparities |
| | Safecast | https://safecast.co.uk/ |
| | SafeToNet | https://safetonet.com/ |
| | Shaping | https://shaping.org.uk/ |
| | SuperAwesome | https://www.superawesome.com/ |
| | Youthworks | https://youthworksconsulting.co.uk/ |
| Other Children's Charities | Action For Children | https://www.actionforchildren.org.uk/ |
| | Children England | https://www.childrenengland.org.uk/ |
| | Coram | https://www.coram.org.uk/ |
| | LSE Blog Parenting for a Digital Future | https://blogs.lse.ac.uk/parenting4digitalfuture/ |
| | National Children's Bureau | https://www.ncb.org.uk/ |
| | NFER | https://www.nfer.ac.uk/ |
| | Save the Children | https://www.savethechildren.org.uk/ |
| Academic Networks | Centre for Abuse and Trauma Studies | https://www.mdx.ac.uk/our-research/centres/cats |
| | CO:RE | https://core-evidence.eu/ |
| | Enurture | https://www.enurture.org.uk/ |
| | Pew Research Center | https://www.pewresearch.org/ |