CHILDLIGHT
Global Child Safety Institute

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CHILDLIGHT ANNUAL FLAGSHIP REPORT

TECHNICAL NOTES

Project H

Extended Reality:
The Implications for Legislation & Policies

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Technical Note

Given that XR technologies are emerging and keep evolving, it is important to consider whether our policies and legislation are sufficient to prevent and respond to CSEA that XR technologies may enable.

More specifically, the questions our study sought to address were:

1. What are the risks for CSEA offending enabled by XR environments and emerging XR technology?
2. Are current policies, legislation, guidelines and strategies issued across the UK fit for the purpose of preventing and responding to CSEA in XR environments?
3. What are the strengths and weaknesses in current UK legislation, policies and guidelines for the prevention of and response to CSEA in XR environments?

It is important to note that despite our emphasis on the UK's Online Safety Act (OSA), our study does not provide an overall assessment of the Act, instead having a narrower focus on its contribution to keeping children safe from CSEA in XR environments. Moreover, this study does not evaluate the extent to which UK policy and legislation enables us to prevent and respond to CSEA more generally but focuses specifically on emerging risks for victimisation due to XR technologies.

Data and evidence to address the research questions for this study were collected through a scoping review, a legislative review, and interviews with experts, and the following sections will explain each of these elements in turn. A protocol was developed in line with the Preferred Reporting of Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P; Shamseer et al., 2015) and JBI Evidence Synthesis guidelines (Peters et al., 2021) and pre-registered on the Open Science Framework (https://doi.org/10.17605/OSF.IO/Q76JA). Ethical approval for the study was granted by the Moray House School of Education and Sport Ethics Sub-Committee at the University of Edinburgh on 13 June 2023.

Scoping and Legislative Review

As one of the core elements of our methodology, we conducted a scoping review that adheres to PRISMA-ScR guidelines (Tricco et al., 2018). The aim of the scoping review was to explore and map the available literature on the topic, summarise the existing evidence, and identify knowledge gaps. A scoping review was the most appropriate approach for our study given that the evidence in our field of research is emerging and heterogeneous, and the aim of our study is to provide insights to inform policy (cf. Peters et al., 2021, Arksey & O'Malley, 2005).

Another core element of our methodology was a review of relevant laws across the UK and core pieces of international legislation. The document search and screening for the legislative review was approached in the same way as the scoping review of literature, but the later stages of data extraction and analysis were handled separately.

Types of documents and range of topics

Research, policy documents, reports, strategies, and guideline documents were eligible for inclusion, if they focus on an area that intersects with any aspect of the issue of preventing and responding to CSEA in XR environments.

With regards to legislative documents, laws, policies and official guidelines that cover any part of the UK (on a reserved and devolved level) and are relevant to protecting children from CSEA in XR environments or responding to CSEA in XR environments were included, together with core pieces of international legislation.

Note that documents were also considered, if they do not explicitly refer to XR environments or new forms of abuse in these environments, but are used to protect children online and prosecute offenders.

Search period and language

Our search focused on sources published between Jan 1st 2010 – April 1st 2023, but we also included some handpicked documents that were published after April 1st 2023 to take into account the most recent evidence relevant to the quickly evolving topic of our study. Moreover, we also included key legislation that came into force before Jan 1st 2010 if there was no newer legislation on the matter. To be eligible for inclusion, documents had to be available in English.

Search Strategy

We searched a wide range of relevant databases using pre-defined search terms:

- Association for Computing Machinery Digital Library (ACM)
- Applied Social Science Abstract and Index (ASSIA)
- Child Rights International Network (CRIN)
- EbscoHost
- Every Child Protected Against Trafficking (ECPAT)
- Emerald Insight
- Eur-LEX
- Google
- Google Scholar
- Gov.UK (including the specific Home Office page within Gov.UK)
- Hein Online
- International Centre for Missing & Exploited Children (ICMEC) Resources
- Lexis+ UK
- Networking with academic colleagues
- Northern Irish Government website
- Organisation for Economic Co-operation and Development (OECD) Family Database
- OpenGrey
- Practical Law UK
- PubMed
- Scottish Government website
- SCOPUS
- Social Science Research Network (SSRN)
- UK-wide Legislation
- UNICEF
- United Nations Office on Drugs and Crime (UNODC, including UNODC SHERLOC)
- US Department of State
- Web of Science
- Welsh Government website
- Westlaw UK
- World Health Organisation (WHO)

Pre-defined search terms that were used

Number	Search Terms
#1	child* OR adolescent* OR infant* OR baby OR babies OR toddler* OR "young person*" OR "young people" OR youth OR teen* OR preteen* OR pre-teen* OR "pre teen*" OR kid* OR prepub* OR pre-pub* OR "pre pub*" OR post-pub* OR postpub* OR "post pub*" OR pubescen* OR pubert* OR juvenile* OR underage* OR minor* OR boy* OR girl* OR preschool*
#2	"sex* abus*" OR "sex* exploit*" OR "sex* viol*" OR "sex* exploit* and abus*" OR molest* OR "sex* blackmail*" OR "sex* harass*" OR "sex* crim*" OR sextort* OR "sex* touris*" OR incest* OR rape* OR raping* OR rapist* OR "sex* assault*" OR "traffick*" OR paedophil* OR pedophil* OR CSE OR CSA OR CSEA
#3	"extended reality platform*" OR "extended reality environment*" OR "extended realit*" OR XR OR "virtual reality platform*" OR "virtual reality environment*" OR "virtual realit*" OR VR OR "augmented reality platform*" OR "augmented reality environment*" OR "augmented realit*" OR AR OR "mixed reality platform*" OR "mixed reality environment*" OR "mixed realit*" OR MR OR "immersiv* entertainment*" OR "immersiv* experienc*" OR "virtual meet*" OR "superimposed world*" OR "metavers*" OR "haptic*" OR "smartglass*" OR "wear* devic*"
#4	implement* OR prevent* OR enforc* OR safeguard* OR protect* OR legislat* OR polic* OR guideline* OR strateg* OR detect* OR respon*
#5	#1 AND #2 AND #3 AND #4

All database searches were conducted between 21/04/2023 and 17/05/2023. In addition, a small number of documents, including some of the most recent ones, were identified by key stakeholders and experts in the field during the course of the study between April and September 2023.

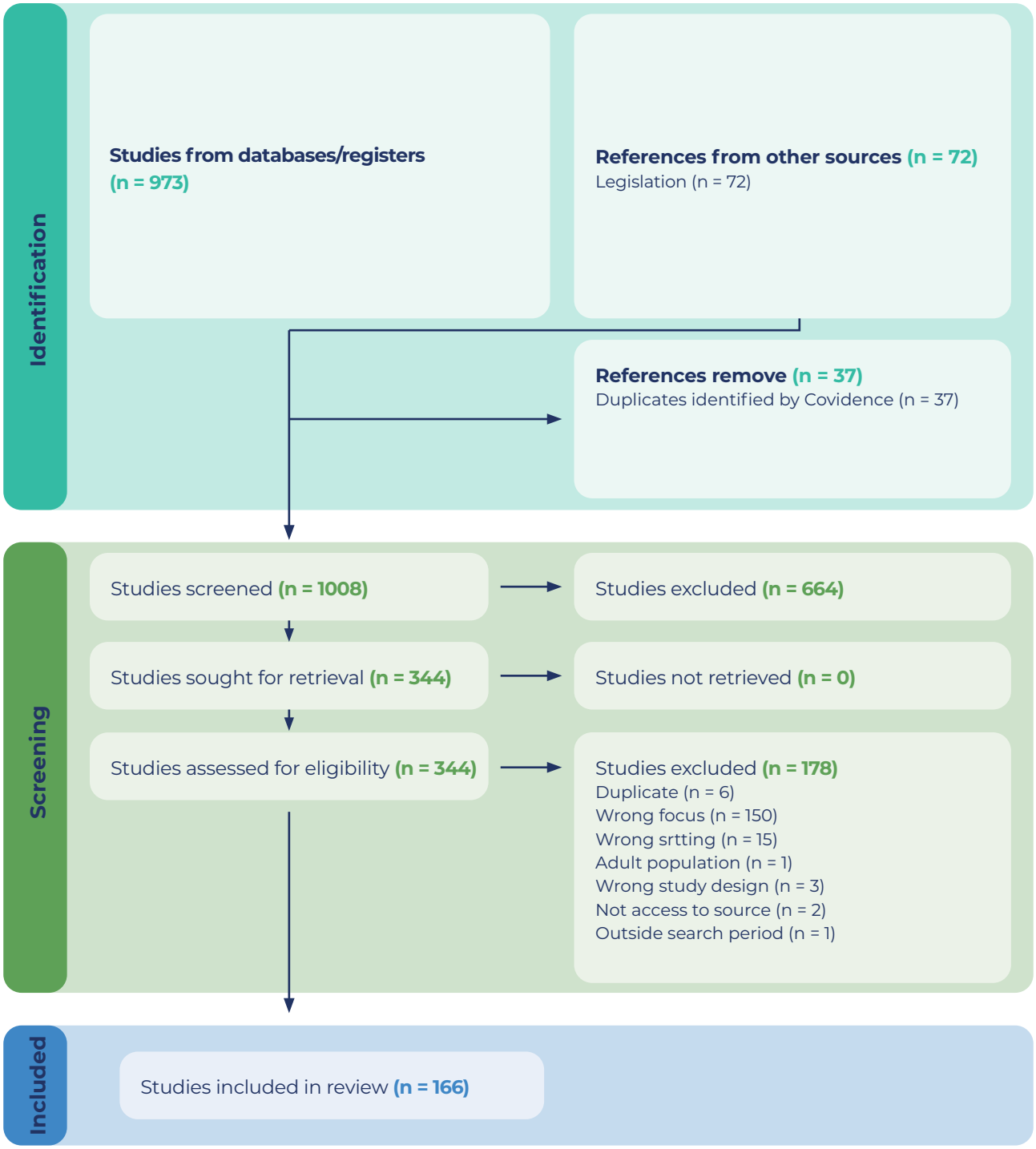
Screening and selection of sources

In total, we included 135 academic and grey literature sources, together with 31 sources that covered the key international, EU, and UK-wide laws along with governmental guidance in the form of websites.

Following the search, all references and full text documents excluding legislation and the UK Home Office's Interim Code of Practice on Online Child Sexual Exploitation and Abuse (OCSEA), which we treated as an accompanying document to the newly enacted OSB, were uploaded to Covidence, a systematic review management software.

The following flow chart displays each step of the screening and selection process including the results at each stage in line with the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR; Tricco et al., 2018). The flow chart includes both the sources included in Covidence, as well as the legislative sources that we screened outside of it.

Flow chart showing screening and selection of sources



Data extraction

Data was extracted from sources that passed full text screening using a data extraction tool developed by the reviewers in line with established guidelines (Tricco et al., 2018). An adapted version of the tool was used for legislation given the specific characteristics of this type of text.

Data analysis and synthesis of results

Scoping review

We conducted a literature review, examining and synthesising the data extracted from all 135 academic and grey literature sources focusing on emerging key themes. These themes were those data extracts that helped provide a targeted answer to our research questions, as per Braun and Clarke's (2006) suggestions. More specifically, the categories of our data extraction form, which addressed the various aspects of our research questions, also served to guide our literature review and synthesis of the extracted data. Our goal was to provide a narrative that would effectively "summarise the existing state of knowledge", show the gaps in theory and thus situate and justify our study, effectively showing our unique contribution (Knopf, 2006).

Legislative review

The review and analysis of the pieces of UK legislation that emerged from the search and screening process described above were mainly informed by the 'black-letter law' approach (McConville and Chui, 2007), otherwise known as doctrinal legal research method. This approach focuses on the letter of the law through a critical analysis of primary and secondary legal sources. Its overall aim is to systematise and provide clarity on the law that stands on any given topic. The identification of underlying thematic points of the legislative analysis is guided by the review of relevant literature, the research hypothesis, and the overarching research question of this report.

Interviews

The second core element of our methodology was to conduct a range of in-depth qualitative interviews with experts in relevant areas of policy, legislation, and technology to understand their views on the risks posed by XR environments for CSEA victimisation and the extent to which UK policies and legislation are able to respond effectively to those risks.

Sample selection and recruitment

We conducted qualitative interviews with 14 professional stakeholders. The sample size was based on the expectation that saturation would likely be reached with a sample of 10-15 participants because the field of experts in relevant areas of XR technology, CSEA, and law is relatively small (cf. Hennink and Kaiser, 2022).

Our primary criterion for selecting interviewees was their expertise in relevant areas of policy, legislation, technology or technology-facilitated CSEA, and our aim was to achieve a good spread in terms of areas of expertise. The following list of anonymised descriptors agreed with each interviewee and

reflecting their job role indicates the spread we achieved:

- CSAM Academic
- VR & XR Academic
- CSEA Prosecutor from one of the UK's Prosecuting Authorities
- CSEA Policy Adviser from one of the UK's Prosecuting Authorities
- Futures and Emerging Technology Analyst from UK Civil Service
- His Majesty's Government (HMG) Engineer
- UK Policymaker from UK Civil Service
- UK Government CSEA Policy Official
- Chief Technology Officer at Child Protection Charity
- Public Policy Professional at Child Protection Charity
- Policy Officer at Child Protection Charity
- Online Safety Policy Lead
- Professional Social Work Adviser
- Product Policy Leader from Tech Company

A Participant Information Sheet and Consent Form were used to inform participants of the aims of the study, how their data would be handled and used, and to seek consent. We also took the time to respond in depth to any questions our participants had about the study. Participants did not receive any financial or other material benefits.

Data Collection and Analysis

Interviews were conducted between June and September 2023 via Microsoft Teams. All interviews lasted around 45-75 minutes. A topic guide was developed prior to the first interview and used as a road map for a semi-structured approach.

All interviews were recorded after consent from the interviewee had been obtained and recordings were later transcribed and anonymised. A thematic analysis of transcripts was undertaken using the software NVivo. Thematic codes were created, guided by the themes that arose in interview transcripts, and themes were then analysed to identify key claims, arguments, and considerations.

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