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Sibling sexual abuse: What do we know? What do we need to know? Stage 1 analysis of a 2-stage scoping review*,**

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ABSTRACT

Background: Sibling sexual abuse is a common form of intra-familial sexual abuse, yet it remains under-studied and under-recognised, leaving many children unprotected and unsupported. Practitioners need rigorously conducted evidence syntheses to inform decision making in this complex practice area.

Objective: A scoping review was conducted with the broad research question: What is known about sibling sexual abuse? in order to map the research and to establish areas of knowledge and gaps requiring attention.

Method: The review followed the guidelines of Arksey and O'Malley (2005), and through searches of 11 academic databases, 3 grey literature databases, journal handsearch and Google, identified 91 empirical papers for review.

Results: While poorly and inconsistently defined, sibling sexual abuse is a common form of child sexual abuse with significant consequences for the whole family. It may involve children of any age and sex, entail the full range of sexual behaviours, and can take place in families from across the socioeconomic spectrum. Disclosure is uncommon during childhood, with multiple barriers including the nature of the caregiving environment in which sibling sexual abuse often takes place. Official records are likely to under-report the frequency and duration of the abuse.

Conclusions: There is considerable scope for further research across all aspects of sibling sexual abuse. This paper represents the most comprehensive (albeit not complete) overview of the current body of knowledge in this field to date, and presents key findings as well as a summary of practice and research recommendations.

1. Introduction

Sexual behaviours between siblings can be considered to be on a continuum, ranging from developmentally appropriate and harmless behaviour, through inappropriate or problematic but mutually initiated behaviour, to abusive sexual behaviour (Yates &

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Allardyce, 2023). Sibling sexual abuse (SSA) – the sexual abuse of children by their brothers and sisters - is a common form of intrafamilial sexual abuse (Krienert & Walsh, 2011; Cawson et al., 2000), as harmful as sexual abuse by a parent, and often devastating for families, with significant long-term consequences not only for the children involved (e.g. depression, substance misuse) but also for the parents, other siblings, and the wider family (Archer et al., 2020; Tener et al., 2018; Yates, 2017). Despite this, SSA remains understudied (Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020) and under-recognised (Noble, 2022), leaving many children unprotected and unsupported (Yates & Allardyce, 2021). Practitioners and policy makers need rigorously conducted evidence syntheses to inform decision making in this complex practice area. However, since a narrative review of the literature published over 10 years ago (Tidefors et al., 2010) there has been only one further review, limited to a focused analysis of 15 empirical studies (Bertele & Talmon, 2021).

Addressing the lack of contemporary research synthesis, we report here on stage one of a two-stage scoping review (Arksey & O'Malley, 2005), comprehensively examining a much broader body of research literature on SSA to inform policy, practice and future research. In this paper we map the research on SSA to establish areas of knowledge and gaps requiring attention. Stage two will explore particular aspects of SSA in more critical depth. Given the lack of knowledge in this area, our research question is necessarily broad: What is known about sibling sexual abuse?

2. Methods

This review follows the guidelines of Arksey and O'Malley (2005), further developed by Levac et al. (2010), and is reported according to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) to ensure a transparent process. For protocol see Yates et al. (2022). We followed five key stages: 1) identifying the research question; 2) identifying relevant studies; 3) selecting studies for analysis; 4) charting the data; and 5) collating, summarising and reporting the findings.

2.1. Eligibility criteria

The eligibility criteria are outlined in Table 1.

2.2. Procedure

We searched the following databases: PsycINFO, PsycArticles, CINAHL, MEDLINE, ASSIA, Social Sciences Premium, Social Sciences Citation Index, Sociological Abstracts, Web of Science, PTSDpubs and Ethos, using titles, abstracts and MeSH headings, or their equivalent. We searched initially for terms related to 'sibling' in subject headings, titles and abstracts. We then repeated the process for terms related to 'sexual abuse'. We brought these searches together to identify articles that included terms related to both 'sibling' and 'sexual abuse'. Table 2 provides an example of the search strategy syntax for PsycINFO.

Initial database searches were conducted between 23/09/21 and 20/10/21. Unforeseen circumstances resulted in a significant gap between the initial database search and proceeding with the scoping review. An updated search was conducted between 2/12/2023 and 14/12/23, following the same process as the initial one.

The initial database search retrieved 7854 papers. Citations were uploaded to reference management software (Endnote) to remove duplicates (n=3964), leaving 3890 papers for screening. We hand-searched the 10 most commonly occurring journals identified through our search of Web of Science (Child Abuse and Neglect, Journal of Interpersonal Violence, Journal of Family Violence, Journal of Child Sexual Abuse, Plos One, Children and Youth Service Review, Evolution and Human Behaviour, Child Maltreatment, Psychological Medicine and Pediatrics) using the term 'sibling sexual abuse', retrieving a further 881 citations and giving a total of 4771 papers for initial screening.

All references retrieved through databases and journals were uploaded to an online collaboration website for literature reviewers (Rayyan at https://www.rayyan.ai/) to facilitate the screening process by the first and second authors. A trial blind-screening of title and abstract was conducted of 211 citations, reaching agreement in 84.4 % of the references. We discussed areas of disagreement,

Table 1
Inclusion/exclusion criteria.

	Inclusion	Exclusion
Type of paper	Original published empirical research (quantitative, qualitative or mixed methods), including peer-reviewed papers, doctoral theses and grey literature	Practice literature (e.g. practice guidance or reflections upon practice), case descriptions, literature reviews, commentaries, opinion pieces or other types of papers that do not constitute an original study
Subject	Children under 18 (including a small number of studies with some adult participants)	Studies primarily looking at adults
Definition of sibling	Biological, adoptive, step or foster, and children who had grown up as part of the same family or household and defined by the authors as siblings	'Social siblings': not related biologically or legally but raised in close proximity (Yates & Allardyce, 2021)
Definition of sibling sexual abuse	Sexual behaviour defined as abusive or coercive by authors 'Sibling incest' (as often used synonymously with SSA)	Sexual behaviour defined as non-abusive (e.g., sexual play)
Language Timeframe	English 1979 to current	Languages other than English Anything before 1979

Table 2 Search strategy syntax for PsycINFO.

Search 1	DE (Brothers OR Sisters OR Siblings OR Sibling Relations)
Search 2	TI (Brother* OR Sister* OR Sibling* OR Sibling Relation*)
Search 3	AB (Brother* OR Sister* OR Sibling* OR Sibling Relation*)
Search 4	S1 OR S2 OR S3
Search 5	DE (Incest OR Sexual Abuse OR Victimization OR Perpetrators OR Sex Offenses OR Child Abuse OR Rape)
Search 6	TI (Incest* OR "Sexual Abuse" OR Victimization OR Perpetrat* OR Sex* Offen* OR "Child Abuse" OR Rape OR "Child sexual abuse" OR "Harmful
	Sexual Behavior" OR "Harmful sexual behaviors" OR "Harmful sexual behaviour" OR "Harmful sexual behaviours" OR "sibling abuse" OR "sexual assault")
Search 7	AB (Incest* OR "Sexual Abuse" OR Victimization OR Perpetrat* OR Sex Offenses OR "Child Abuse" OR Rape OR "Child sexual abuse" OR "Harmful
	Sexual Behavior" OR "Harmful sexual behaviors" OR "Harmful sexual behaviour" OR "Harmful sexual behaviours" OR "sibling abuse" OR "sexual assault")
Search 8	S5 OR S6 OR S7
Search 9	S4 AND S8
Search	Limit date of publication: 19790101-present
10	
Search	Limit to English only
11	

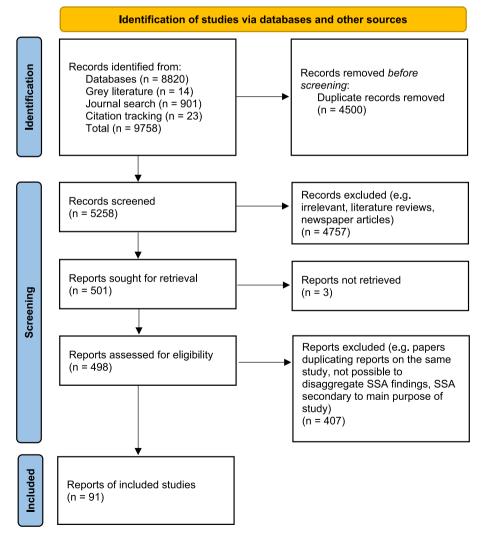


Fig. 1. Flow diagram adapted from PRISMA-ScR (Tricco et al., 2018), combining the initial and updated search and screening.

refining our principles for screening to include references for full-text review if they 1) looked relevant but their relevance was unclear; 2) were about sibling violence; 3) were subject-relevant but unclear if they constituted research. We blind-screened 100 further citations, agreeing on 93 % (a kappa-coefficient of 0.5986, indicating moderate to good inter-rater reliability). Papers we disagreed on were excluded at full-text screening, suggesting low risk of false exclusion at the initial stage.

We screened the remaining citations independently, and excluded 4328 citations, for reasons such as papers being irrelevant, literature reviews, or related to parent-child abuse. An interim total of 443 papers remained for full-text screening. We then searched grey literature using search terms 'sibling sexual abuse' and 'child abuse siblings' through OpenAIRE, OpenGrey, National Institute for Health and Clinical Excellence (NICE) Evidence Search: Health and Social Care and Social Care Online and Google. An additional 13 citations were identified.

After title and abstract screening, the first and second authors screened full texts. They met to decide on ambiguous papers, excluding papers where SSA findings could not be disaggregated, or where the only information was the proportion of SSA in the sample. Where more than one paper reported on the same study and findings (such as a PhD thesis subsequently published in journals, or a report in later book chapters), we regarded these as duplicates, including only the most comprehensive or earlier paper. We conducted forwards and backwards citation tracking of full-text included papers using Google Scholar. A further 23 citations were identified and full-text screened. From this process 157 papers were initially included.

The updated literature search followed the same process, identifying 966 papers through databases, 20 papers through journal hand-searches and one paper through a grey literature search. After duplicate removal (n = 536), 451 papers remained for screening. The second author conducted title, abstract and full-text screening. Where there was ambiguity, the full team considered the paper against the eligibility criteria. We excluded 429 papers, resulting in 22 additional papers. This provided a total sample of 179 papers.

All four authors were involved in data extraction using a data extraction table we created and piloted to confirm its usability and suitability. In an effort to include quality appraisal (often lacking in scoping reviews), we used the Mixed Methods Appraisal Tool version 18 (MMAT) (Hong et al., 2018). This provides one consistent tool applied across all types of studies, allowing for a more streamlined process and comparison between different study designs and a level of appraisal more consistent with the depth required at this stage of the review. The following data were extracted: author, year, title, country of origin, sample demographics (age, gender, ethnicity), definitions of sibling and SSA, study aim, design, method, sample description, sample size, findings, quality score, limitations, major themes, discussion points.

Following data extraction, we further narrowed the scope to studies focusing on SSA, rather than SSA discussed in the context of a broader study, such as child abuse or intrafamilial sexual abuse. This was for both pragmatic and methodological reasons - to make the number of papers in the review more manageable and because the studies focusing on SSA provided more substantial evidence, supported and not contradicted by the broader studies. This resulted in our final core sample of 91 papers. A summary of the search and screening process (initial and updated search combined) is represented in the Prisma diagram (see Fig. 1).

Analysis then followed the PAGER framework (Patterns, Advances in knowledge, Gaps in knowledge, Evidence for practice and Research recommendations) (Bradbury-Jones et al., 2022). Major themes were first analysed to produce a list of patterns, and each pattern was then analysed to identify advances, gaps, evidence for practice and research recommendations.

3. Findings

Our guiding research question was: What is known about sibling sexual abuse?

Our scoping review of 91 papers identified eight key patterns: Definitions; Prevalence; Characteristics of the abuse; Family Characteristics; Aetiology; Disclosure; Impact; and Professional responses and intervention. Before we present these patterns, we first make a brief note on language and then outline a broader descriptive summary of the sample.

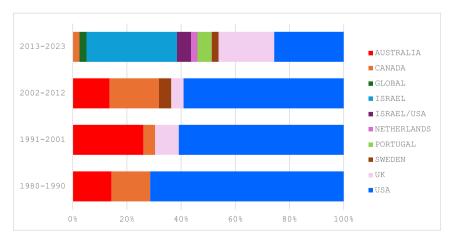


Fig. 2. Proportion of publications by decade and country.

3.1. Language

Multifarious language is used throughout the papers to describe the child who has harmed and the child who has been harmed through abusive sibling sexual behaviour. It is difficult to find language that accurately and satisfactorily describes the roles of the children in the abuse, as children and later as adults, while also providing a readable paper. For ease, we refer to 'child/ren responsible', 'adult CR/s' (child responsible who is now an adult), 'child/ren harmed' and 'survivors'. Biological or legal parents, caregivers or others in parenting roles will be referred to as 'parents' throughout.

3.2. Descriptive summary

Ninety-one papers over more than 40 years reflects a lack of research in this field, but there has been increasing interest over the last 10 years. Of the 91 included papers, 7 % are from 1980 to 1990; 20 % from 1991 to 2001; 27 % from 2002 to 2012 and 46 % from 2013 to 2023. However, there is geographical variation, with decreasing interest from the USA and increasing interest from the UK and Israel (see Fig. 2), largely reflecting the academic focus of particular authors and study centres.

To consider what aspects of SSA have garnered research interest and where there may be gaps, the first and second authors categorised the broad focus of the studies in our sample (see Fig. 3). The categories are not mutually exclusive and based on the stated aims or overall focus of the paper. The factors around SSA, such as family and abuse characteristics, were the most common category (24 papers). There were also many studies examining professional responses (17 papers) and studies comparing SSA with other forms of non-sibling child sexual abuse, such as father-daughter abuse and sexual abuse of unrelated children (23 papers). The high level of interest in professional responses and interventions may reflect the relative ease in gaining research access to professionals as opposed to families affected by SSA. While there has also been considerable interest in the impact of SSA on children harmed and their experiences of disclosure, almost nothing is known about the experiences and impact on children responsible.

There are some excellent examples of rigorous research with 23 % (n=21) of studies meeting all seven of the quality criteria outlined in the MMAT (e.g. Griffee et al., 2016; Kiegelman, 1997; Krienert & Walsh, 2011; Marmor & Tener, 2022; McCartan et al., 2022; McGrath, 2008; Welfare, 2010). Most of the research (n=62, 68 %), however, consists of small-scale, qualitative and quantitative research of moderate to good quality (meeting 4–6 MMAT criteria), with a small number (n=8, 9 %) of poor-quality studies (meeting 0–3 MMAT criteria). Overwhelmingly, the main sources of information in our sample are adult female survivors, providing retrospective accounts, and professionals, either through interviews or official records (see Fig. 4). Much less comes from the perspective of children harmed, children responsible, families affected, or the general population.

3.3. Definitions of 'sibling' and 'sibling sexual abuse'

Unclear definitions characterise most of the studies throughout the review. Only 44 % (n = 40) of the papers define what is meant by 'sibling', and only 57 % (n = 52) define either 'sibling sexual abuse' or the particular behavioural concept they are studying (e.g. 'sibling incest' or 'sibling sexual behaviour'). In 24 % (n = 22) of papers neither 'sibling' nor 'sibling sexual abuse' is defined. There is sometimes a rationale for a lack of definition, such as preferring survivors themselves to define their relationships and the behaviours they have experienced (e.g. Bateson Brazeau, 2009).

Most of the research concerns children, who are biologically or legally related and have lived and grown up together in the same household or organised family. We discerned 27 different definitions of 'sibling sexual abuse'. There is broad agreement since 2010 that, in addition to brother-sister abuse, SSA can involve brother-brother, sister-brother, and sister-sister abuse, and groups of siblings as well as dyads. No papers since Krienert and Walsh (2011) specify an age disparity between the children as a requirement for defining sexual behaviours between siblings as abusive (as opposed to appropriate, inappropriate or problematic behaviours). While one paper

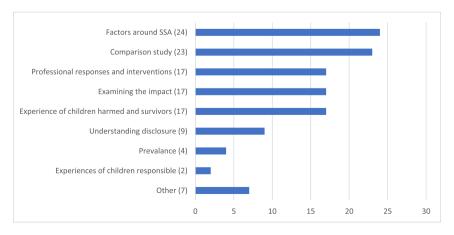


Fig. 3. Broad focus of papers.

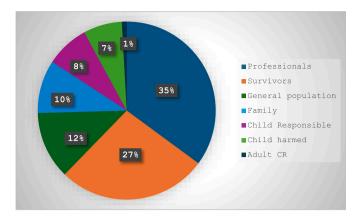


Fig. 4. Sources of data.

requires 'force' to have been used, 10 papers define SSA as involving a power differential without requiring the use of force or other coercion. Six papers invoke the idea that a victimising outcome (such as anger, fear, or sense of betrayal) may be either necessary or sufficient for the behaviour to be regarded as abusive. Since 2014, 10 papers define SSA as 'age-inappropriate behaviour', or 'age-inappropriate behaviour that is not transitory or fleeting'. Such definitions risk net-widening or, conversely, excluding very serious behaviour, such as if the evidence suggests there was one instance. It is vital that future research defines 'sibling' and 'sibling sexual abuse'.

3.4. Prevalence

We identified four independent studies in our sample specifically examining the prevalence of sibling sexual behaviours and abuse, all drawing participants primarily from University populations (Finkelhor, 1980; Griffee et al., 2016; Hardy, 2001; Relva et al., 2017). This small number is reflective of our inclusion criteria: some broader studies of child sexual abuse prevalence note the proportion of SSA (e.g. Atwood, 2007; Cawson et al., 2000; Mathews et al., 2024). The papers in our sample suggest prevalence is between 1.3 % and 7 %, which is consistent with these broader prevalence studies, but further studies examining the prevalence of SSA and its dyadic and group characteristics in different countries, beyond a primarily university population, is needed to understand its scale and dynamics.

3.5. Abuse characteristics

Meaningful information is provided by 57 papers about abuse characteristics, such as the sex and age of the children involved, and the nature and duration of behaviours.

3.5.1. Sex of the child responsible

Predominantly male children are identified as responsible for SSA, with a significant minority of cases involving female children responsible. We noted sex discrepancies between law enforcement and survivor reports. For example, Krienert and Walsh (2011) found from 13,103 incidents of SSA reported to law enforcement that 92.2 % of the children responsible were male and 7.8 % female; whereas, in McDonald and Martinez's (2017) online survey of 33 survivors, 19 % of children responsible were female. McGrath's (2008) study of 43 survivors recruited from counselling agencies, found brother-sister abuse accounted for 62.9 % of cases, followed by brother-brother (20.9 %), sister-brother (13.9 %) and sister-sister abuse (2.3 %). Although most older studies focus solely or predominantly on brothers abusing sisters, more recent studies (i.e. post 2014) report on both sexes. However, we still know very little about SSA by girls.

3.5.2. Sex of the child harmed

Sex of the child harmed was predominantly reported as female (60–80 %), with males making up between 20 and 40 % of children harmed.

3.5.3. Age

In our sample, the youngest age recorded for children harmed was 0 years (e.g. Collin-Vézina et al., 2014; Krienert & Walsh, 2011) with a mean age of 6–9 years, but the abuse may start and/or continue into adulthood (e.g. Carlson et al., 2006). The age of children responsible ranged from 5 or 6 years old to adult siblings (e.g. Collin-Vézina et al., 2014; McGrath, 2008; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020; Yates et al., 2012), with a mean age of 12 to 16 years. A significant proportion of SSA takes place at age 12 and under (31.8 %) and over the age of 16 (11.2 %) (n = 13,013) (Krienert & Walsh, 2011). The evidence strongly indicates that SSA can begin or occur with children of any age. The use of mean rather than modal age may obscure important information about the ages of children responsible and harmed.

3.5.4. Age difference

Age differences between the child harmed and child responsible ranged from 0 to 12 years, with 19 studies reporting the age gap as five years or more and 19 reporting it as less than five years. The child responsible is usually older than the child harmed. However, contrary to previous reviews, which stated that the child responsible is always older than the child harmed (Tidefors et al., 2010), nine papers in our review report instances where the child responsible was younger (Caffaro & Conn-Caffaro, 2005; Cyr et al., 2002; Doyle, 1996; Hardy, 2001; Kiegelman, 1997; Krienert & Walsh, 2011; McDonald & Martinez, 2017; McLaurin, 2005; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020). Using an age gap of two years or more to indicate sibling sexual behaviour is abusive (e.g. De Jong, 1989; Gilbert, 1992; Yates & Allardyce, 2021) is not substantiated in this review. While a large age gap may be indicative of abusive behaviour, relying on age differentials to make sense of sibling sexual behaviour risks mis-identifying behaviours as non-abusive or making incorrect assumptions about which child is responsible. As such we recommend that the respective ages of the children are considered within the context of an assessment of the power dynamics of the sibling relationship, and that specifying age gaps should no longer be included in practice guidance or research to identify or define sibling sexual behaviour as abusive.

3.5.5. Duration and frequency

Thirty papers report on the duration of the sexual abuse, and 19 on frequency. For the most part, SSA appears to be sustained over long periods of time, some specifically noting abuse taking place over a period of up to 10 years (e.g. Carlson et al., 2006; Marmor, 2023) and with frequencies ranging from one incident to hundreds (i.e. too many to count). Seven papers note that while some people experienced one or two incidents of abuse or endured it for less than six months, this was not typical. In Winters and Jeglic's (2023) study (n = 38) almost 74 % of cases involved abuse lasting more than one month, while in McGrath's (2008) study (n = 43) over half the children experienced 26 or more instances spanning at least four years. Gioro (1992) (n = 44) found that the younger the child responsible at onset, the longer the duration of the abuse was likely to be. Studies using case file review processes (e.g. Adler & Schutz, 1995; Falcão et al., 2014; O'Brien, 1989) report lower numbers of instances than studies involving surveys (e.g. Gioro, 1992; McDonald & Martinez, 2017) or interviews (e.g. Bateson Brazeau, 2009; Katz & Hamama, 2017; Monahan, 2010), suggesting duration and frequency may be underreported in official documents. While single, isolated instances of SSA do occur, children harmed are likely to have experienced a number of harmful instances over extended periods of time.

3.5.6. Nature of the abusive behaviours

The nature of abusive behaviours reported ranged from exposure, to contact sexual behaviours, through to vaginal and anal rape and forms of sexual torture. Studies of clinical/forensic populations tended to report higher rates of penetrative sexual behaviours (e.g. Grant et al., 2009; Laviola, 1992; Welfare, 2010) compared to non-clinical populations (e.g. university students), where kissing or fondling were more commonly reported (e.g. Bevc, 1988; Collin-Vézina et al., 2014).

Twenty papers reported use of force and/or threats, with some abuse characterised by a high degree of violence (e.g. McGrath, 2008; Welfare, 2008). Children responsible also used other forms of coercion such as bribery, manipulation and leveraging a 'special relationship' (Brown, 1997). The evidence around age difference and force is equivocal. Some studies report the greater the age difference, the greater the use of force and severity of abusive sexual behaviours (e.g. Finkelhor, 1980; Gioro, 1992; James, 2015; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020), while Grant et al. (2009) (n = 38) found age was not a determinant of severity and Cyr et al. (2002) (n = 24) found younger brothers as sexually intrusive as older ones. Compared to other forms of child sexual abuse, SSA has been found to be more likely to involve penetrative sexual intercourse (Cyr et al., 2002; Gioro, 1992; O'Brien, 1989) or use of force (Rudd & Herzberger, 1999).

Little is known about how the abusive behaviour begins and develops. Abuse may begin with fondling but escalate quickly to penetration (McLaurin, 2005; Tener & Katz, 2018). Winters and Jeglic (2023) (n = 38) examined 'grooming' behaviours, finding abuse facilitators included the child being compliant/overly trusting (n = 25; 67.6 %), lacking supervision (n = 24; 63.2 %), and lacking confidence (n = 23; 62.2 %). While behaviours are described as intentional to facilitate abusive behaviour, Katz and Hamama (2017) highlight grooming behaviours may be embedded in sibling relationships making the abusive behaviour routine. SSA is a serious form of child sexual abuse and assumptions should not be made about abuse severity according to the children's age or age differential.

3.5.7. Multiple children involved in the abuse

Ten studies reported some children harmed were abused by more than one sibling, such as 10.3% of Krienert and Walsh's (2011) sample of 13,013 incidents. Nine studies reported that some children responsible abused more than one child, often other siblings but also non-siblings (e.g. Grant et al., 2009; Krienert & Walsh, 2011; O'Brien, 1989; Richardson et al., 1997; Tener & Katz, 2018). In 13% of Krienert and Walsh's (2011) records, children responsible abused multiple children of different sexes. O'Brien (1989) (n=50) and Grant et al. (2009) (n=38) report some children abused both brothers and sisters (20 % and 12 % respectively), with the mean number of children harmed per child responsible between 1.34 and 1.8. As such there may be more than one child responsible and more than one child harmed in a family.

3.5.8. Sibling relationship

The type of relationship between the siblings is reported in five papers. Gilbert (1992) (n = 14) reported more than 50 % of relationships were step-siblings; whereas, Krienert and Walsh (2011) and Tener and Katz (2018) (n = 42) noted the majority of children were biological siblings (72.6 % and 86 % respectively), compared to step-siblings (27.4 % and 14 %). Due to the wide variety of definitions around 'sibling' and selection criteria studies used, we cannot draw conclusions regarding what impact the type of sibling

relationship has on the likelihood, nature or duration of SSA.

3.6. Family characteristics

Meaningful information is provided by 59 papers on family characteristics and dynamics, such as the characteristics of children responsible, children harmed and parents or the general family culture. There is very limited information on sibling relationship dynamics. The overall message is SSA can take place in any kind of family with children. It often takes place within the context of wider family stress, but in a minority of families it occurs in the absence of any obvious stress.

3.6.1. Ethnicity

Ethnicity of the children does not appear to affect the likelihood of SSA, although it is often unreported or unexamined in the research. Where reported, ethnicity largely reflects the wider population studied. Krienert and Walsh (2011), for example, found that offenses reported in the USA concerned children who were: White (83.8 %), Black (15.4 %) and Other (0.8 %). However, SSA within non-White and non-Western populations remains under-studied.

3.6.2. Family stress

SSA takes place in families from any socioeconomic background (e.g. Carlson et al., 2006; Cyr et al., 2002; Smith & Israel, 1987; Welfare, 2008) and within households with one or two parents of any marital or relationship status (e.g. Falcão et al., 2014; Tener et al., 2018; Thomsen et al., 2023). Domestic abuse often features in the households of children responsible (e.g. Latzman et al., 2011), as do high levels of parental conflict, parental affairs and family discord (Adler & Schutz, 1995; Bevc, 1988; Fontana, 2001; Hardy, 2001; Smith & Israel, 1987; Worling, 1995). Financial concerns are also highlighted as relevant stressors (Adler & Schutz, 1995; Laviola, 1992; Rudd & Herzberger, 1999). Some small studies have found higher than average numbers of siblings is a factor (e.g. Cyr et al., 2002; Gilbert, 1992; Laviola, 1992; Tener et al., 2018; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020), but SSA also takes place in families of two children (Adler & Schutz, 1995). Griffee et al. (2016) found bed-sharing was a risk factor for SSA, which may relate to overcrowded conditions; however, Collin-Vézina et al. (2014) reported low rates of household overcrowding (9 %) in 974 cases involving SSA.

3.6.3. Parental physical and emotional absence

Thirteen papers highlight parental physical and/or emotional absence as contributing to SSA (e.g. Halse et al., 2012; King-Hill, Gilsenan, & McCartan, 2023; King-Hill, McCartan, et al., 2023; Lewin et al., 2023; Smith & Israel, 1987). Parental absence may result in a lack of supervision, older siblings having increased power and caring responsibilities for younger siblings, and children feeling their parents are unavailable so they cannot tell them about the abuse. Parental alcohol dependency, substance misuse and long working hours are highlighted as possible factors contributing to parental absence. While identified in only 1 % of cases in Collin-Vézina et al.'s (2014) study (n = 974), 52.3 % of the 63 families in Thomsen et al.'s (2023) study featured parental substance misuse. Parental physical or mental illness and disability may also contribute (e.g. Collin-Vézina et al., 2014; Laviola, 1992; Rudd & Herzberger, 1999; Smith & Israel, 1987). In Thomsen et al.'s (2023) study, 39.7 % of children responsible had a parent with a formal history of mental illness.

3.6.4. Sexual boundaries

In a small number of studies, families' sexual boundaries were described as either very rigid or very loose. Loose boundaries include children witnessing parents watching pornography, being shown pornography, or parents having sex in communal areas (Fontana, 2001; Griffee et al., 2016; King-Hill, Gilsenan, & McCartan, 2023; King-Hill, McCartan, et al., 2023); fathers being naked around the house (Fontana, 2001); and children sharing a bed or bath (Griffee et al., 2016). Father-daughter sexual abuse preceded brother-sister sexual abuse of the same child harmed in 32 % of cases in Smith and Israel's (1987) study of 25 families. Examples of rigid boundaries include sex being a taboo topic with sexual inquiries or sexual expression of any kind being discouraged (McLaurin, 2005; Smith & Israel, 1987). Marmor et al. (2022) found children in such environments lacked sexual knowledge and appropriate outlets for sexual expression.

Some studies highlight family gendered power relations as contributing to SSA. This may include girls being expected to be submissive and domestic, and boys to be dominant, controlling and perhaps sexually active (King-Hill, Gilsenan, & McCartan, 2023; King-Hill, McCartan, et al., 2023; Laviola, 1992; Marmor et al., 2022; McLaurin, 2005; Owen, 1998).

3.6.5. Parents' own histories of abuse

There is limited information about the abuse histories of parents; however, seven papers note high proportions of parents with a history of physical and sexual abuse. Thomsen et al. (2023) found 25.9 % of parents experienced their own sexual abuse, close to double the rate of parents of young people who had sexually abused non-siblings. Even higher rates are found in other studies (e.g. Cyr et al., 2002; O'Brien, 1989).

3.6.6. Characteristics of children responsible

Most studies describing the characteristics of children responsible involve mainly professional descriptions of boys from clinical populations (e.g. Becker et al., 1986; Schutte, 1992; Tidefors et al., 2010; Worling, 1995). We know little about girls.

3.6.6.1. Experience of abuse. Most studies corroborate that a significant proportion of boys who have sexually abused a sibling have themselves experienced abuse and trauma, although not necessarily sexual trauma. Latzman et al. (2011) for example, examining the characteristics of 100 boys who had abused siblings, found 58 % had been sexually abused, exposed to pornography and domestic abuse, 49.5 % had been physically abused, 33 % had experienced neglect and 15 % emotional abuse. Smaller studies report variable but broadly similar findings (e.g. Becker et al., 1986; James, 2015; McGrath, 2008; Rayment-McHugh & Nisbet, 2003; Richardson et al., 1997; Tidefors et al., 2010). Grant et al.'s (2009) study of 38 boys found 71 % had experienced at least some form of abuse, while 29 % were not known to have experienced any form of abuse. Welfare (2008) reports that five of the 21 boys in their study had experienced bullying or some other social or peer disruptions, to which they attributed their abusive behaviour. Some studies report higher rates of abuse experienced by boys who sexually abused siblings than boys who have abused non-sibling children (Latzman et al., 2011; O'Brien, 1989; Thomsen et al., 2023; Worling, 1995). However, boys who have abused across different contexts (e.g. siblings and non-siblings) have experienced higher rates of abuse than boys who have abused in only one context (e.g. siblings only or non-siblings only) (Richardson et al., 1997; Yates et al., 2012). It is likely that children responsible will have experienced significant abuse and trauma, and the degree of this abuse may be one factor differentiating boys abusing in one or in multiple contexts. However, importantly, not all children responsible are reported to have prior abuse experiences.

3.6.6.2. Other behavioural concerns. A small number of studies outline other behavioural problems. In Richardson et al.'s (1997) study over half of the 20 children responsible had a conduct disorder, 35 % school behaviour problems, 30 % a Statement of Special Educational Needs, 35 % convicted of theft and 10 % convicted of assault. Other small studies report similar findings about conduct disorder and behavioural problems in school (Adler & Schutz, 1995; Rayment-McHugh & Nisbet, 2003). Where present, other behavioural problems need to be addressed alongside the SSA.

3.6.6.3. Learning disability and neurodiversity. Children with a learning disability or issues of neurodiversity may be over-represented among boys who have sexually abused siblings, but data on this is scant. In Adler and Schutz's (1995) study, four of the 12 boys had a learning disability and two had Attention Deficit Hyperactivity Disorder (ADHD). In Yates et al.'s (2012) study involving 17 boys who had abused siblings, three had autism spectrum disorder, three had ADHD and one had a global developmental delay. The prevalence of learning disability and neurodiversity among children responsible, and what relevance this may have to aetiology and intervention, require further investigation.

3.6.7. Characteristics of children harmed

As Krienert and Walsh (2011) note in their study, the initial baseline demographics reveal that children harmed and children responsible will share similar characteristics as they typically grow up in the same family environment, sharing similar experiences of family stress. Beyond sex and age, a limited number of studies (n = 20) discuss the characteristics of children harmed. Sixteen of these studies note many children harmed are subject to other forms of abuse by the child responsible (e.g. physical or emotional abuse) and sexual abuse by others, including other siblings (e.g. Bevc, 1988; Caffaro & Conn-Caffaro, 2005; McDonald & Martinez, 2017; McLaurin, 2005); a parent or step-parent, most commonly a father (e.g. Cole, 1990; Cyr et al., 2002; Doyle, 1996; Laviola, 1992; McLaurin, 2005; Monahan, 2010); a grandparent (Laviola, 1992); or a sibling's friends (Taylor, 1996). Carlson et al. (2006) (n = 41), for example, found that 51.2 % of survivors had been sexually abused by another family member.

Two studies highlight children harmed are often socially isolated, such as identifying few good friends at age 12 or endorsing the statement "I was lonely and/or isolated" (Bevc, 1988; Winters & Jeglic, 2023). Winters and Jeglic (2023) (n = 38) found over two-thirds of participants categorised themselves as compliant and trusting of adults, lacking confidence or having low self-esteem; many said that they were distant from their parent and felt unloved or unwanted. Children harmed are likely to be a particularly vulnerable group.

3.6.8. Sibling relationship between children harmed and children responsible

There is very limited research regarding the nature and quality of sibling relationships in which SSA takes place, with no clear pattern apparent other than that the relationships are highly varied, complex, multi-faceted and often conflicted. Some studies report children responsible may feel jealous, anger and hate towards the children harmed (Brown, 1997; Fontana, 2001; Martinez & McDonald, 2017; Yates et al., 2012), but this is not always the case (Yates et al., 2012). Power and hierarchical disparities between children responsible and children harmed are noted (Bass et al., 2006; Fontana, 2001; Marmor & Tener, 2022; McDonald & Martinez, 2017; Tener, 2021; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020), as are sentiments of love and closeness (Lewin et al., 2023; McLaurin, 2005). Johnston (1998) found, in their survey of 28 female survivors abused, participants described mixed perceptions of the sibling relationship prior to the abuse, such as playful, close, abusive, or distant. In a study involving both children responsible and children harmed, Fontana (2001) found the siblings from the same dyad had quite different perceptions of the sibling relationship, with no clear pattern across the dyads other than, again, complex and conflicted feelings. Evidence suggests the sibling relationship changes over time, particularly because of the abuse, disclosure, and/or responses to disclosure (Fontana, 2001; McLaurin, 2005; Monahan, 2010; Tener, 2021). Abusive sibling sexual behaviour takes place in the context of a sibling relationship; as such we need to develop our understanding of the dynamics of sibling relationships in which such abuse takes place, both in research and in practice, to support assessment, intervention and prevention.

3.7. Aetiology

The research suggests SSA is often, but not always, associated with experiences of abuse and highly stressful family environments, perhaps interacting with a lack of supervision, emotional unavailability of parents, a patriarchal culture and developmentally harmful sexualisation. However, the literature is under-theorised, with little evidence of causation, and few attempts to make sense of the possible links between these factors and SSA, particularly in the face of evidence that it may occur in the absence of these factors. There is little research examining the role of the sibling relationship itself in the aetiology of SSA.

Griffee et al. (2016) found factors associated with 'coerced sibling incest' (in order of magnitude from highest to lowest) were: witnessing parental physical fighting; parent-child incest; siblings sharing a bed, and family nudity. These factors must, however, be understood within their cultural context. Family nudity, for example, is likely to have quite different significance where nudity is a cultural norm, Yates et al. (2012) suggest there may be different pathways to abusive sibling sexual behaviour, with a younger age of onset and more extensive abuse and trauma histories for boys abusing both siblings and children outside of the family, and less extensive abuse histories coupled with sibling dynamics involving jealous anger for boys abusing only siblings. Significant further research and theorisation is required to understand what the potential pathways to abusive sibling sexual behaviour are.

3.8. Disclosure

We identified 49 papers featuring disclosure. The vast majority of SSA remains undisclosed during childhood, many survivors not disclosing until late adulthood, if at all (e.g. Caffaro & Conn-Caffaro, 2005; Carlson et al., 2006; Falcão et al., 2014; Marmor, 2023; McGrath, 2008; Monahan, 2010; Winters & Jeglic, 2023). In Cole's (1990) survey involving 122 adult women survivors, for instance, only 9 % disclosed within a year of the abuse and 33 % did not disclose for 20 years or more. Nonetheless, most papers focus on retrospective reports of disclosure during childhood by women abused by brothers, with some research examining the disclosure experiences of survivors in adulthood.

Multiple barriers to disclosure or reasons for non-disclosure emerged in this review. While not unique to SSA, the extent to which these barriers hinder disclosure may be greater due to the dynamics of SSA and the family context in which it occurs. Cole (1990) (n =270), for instance, found significantly more sisters than daughters did not disclose due to feeling responsible for the abuse, feeling ashamed, and not knowing who to tell. Most commonly cited is feeling ashamed and/or a sense of culpability or guilt (e.g. Johnston, 1998; Lewin et al., 2023). Other reasons include parents (particularly mothers) being absent or otherwise unavailable; being threatened; not understanding the experience was abuse; and lacking the sexual knowledge, vocabulary and language to be able to describe their experiences (e.g. Cole, 1990; King-Hill, McCartan, et al., 2023; Taylor, 1996; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020). Children's sensitivity to parents' upset and distress may also limit the extent to which the details of the abuse are disclosed (e.g. Welfare, 2008), and Tener and Katz (2018) found that in forensic investigations most children did not want parents to be present while they described their experiences.

A positive response to disclosure from parents (e.g. believing the disclosure, taking it seriously, taking practical steps to promote safety) is described in only a small minority of cases. Only seven from 17, and eight from 56 disclosures in Welfare's (2008) and Tener et al.'s (2018) studies respectively received a positive response. Disclosures being met with outright disbelief, minimisation, blaming or rejection of the child harmed, taking the side of the child responsible, or simply just a lack of response, are more commonly reported (e. g. Rowntree, 2007; Tener et al., 2018; Welfare, 2008). All these responses are experienced as re-traumatizing and devastating for the children concerned (Rowntree, 2007; Shaw, 2008). Survivors also report minimising responses to disclosure by parents during adulthood (Lewin et al., 2023; Shaw, 2008; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020).

A similar mix of reactions is found in papers reporting responses of professionals to disclosures by children and survivors (Doyle, 1996; Itzick et al., 2023; Katz & Hamama, 2017; King-Hill, McCartan, et al., 2023; McCartan et al., 2022). Professionals were regarded as positive figures in the disclosure process if they believed the person's account, if they were encouraging, and especially if they made clear that the abuse was not the person's fault (Rowntree, 2007; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020). SSA is rarely disclosed during childhood, and both children harmed and survivors often experience unhelpful responses from others, including family members and professionals.

3.9. Impact

Forty-two papers present meaningful findings relating to the impact of SSA, on the child harmed, parents, different family members, and on the family as a whole. No papers focused specifically on the impact of SSA on the child responsible. Most studies rely on small, clinical samples or self-reports of self-selecting adults, usually women, often already in therapy (e.g. Carlson et al., 2006; Corotis, 1992; Laviola, 1992; McLaurin, 2005), or surveys of university students (e.g. Gioro, 1992, Morrill, 2014; Stroebel, O'Keefe, Beard, et al., 2013). Only one study involved children as participants (Fontana, 2001) and very few papers comment on the impact of SSA during childhood. Earlier papers tend to focus on individual consequences, while later papers begin to explore relational consequences. As many of the children harmed have also experienced other forms of abuse, identifying the specific impact of SSA is challenging, except for survivors' own attribution. While there are some nuances, SSA involving any sex-pairing is harmful to both children involved (Beard et al., 2013; King-Hill, McCartan, et al., 2023; McGrath, 2008; O'Keefe et al., 2014; Stroebel, O'Keefe, Griffee, et al., 2013), but the majority of papers concern brother-sister abuse. What follows is a summary of the findings from those papers.

Many harmful consequences of SSA are similar to those experienced by survivors of other forms of child sexual abuse, the traumatic

nature of brother-sister sexual abuse having been found to be similar to and as harmful as father-daughter abuse on a range of measures (Cole, 1990; Cyr et al., 2002; Rudd & Herzberger, 1999; Tyler, 2011). These include, in the short-term (during childhood), physical injury, fear, hypersexualisation, feeling betrayed, manipulated or fooled, post-traumatic stress disorder (PTSD) and complex PTSD, and guilt and shame (e.g. Brown, 1997; Falcão et al., 2014; Gioro, 1992; Welfare, 2008). Sometimes a sense of shame is associated with feelings of physical pleasure during some of the abuse, and confusion about where responsibility lies for the sexual behaviours with their sibling (Corotis, 1992; King-Hill, McCartan, et al., 2023). Long-term impacts include ongoing guilt and shame, depression, low self-esteem, alcohol or substance misuse, dissociative symptoms, suicide attempts and suicidal ideation, difficulties around sex, somatic complaints, extreme fear, and PTSD or complex PTSD, among others (e.g. Brown, 1997; Carlson et al., 2006; Cole, 1990; Rudd & Herzberger, 1999). Due to the nature of the study samples, it is not known the extent to which these consequences are experienced by people who have experienced SSA within the general population.

What sets SSA apart are the short- and long-term implications for family relationships and the impact on other relationships in adulthood, as highlighted by 20 papers. This is due to the context of family stress in which SSA often takes place, the person responsible being not only a child but a sibling child, and as a consequence particular confusion among family members and others about where responsibility lies for the abuse and whether the behaviour is indeed abuse. The related confusion, guilt and shame experienced by children harmed and survivors, the (anticipated or experience of) minimising, blaming or disgusted responses of family members and others (e.g. Brown, 1997; Cole, 1990; Doyle, 1996; Kiegelman, 1997; King-Hill, McCartan, et al., 2023; McCartan et al., 2022), and the interaction effects of the impact of the abuse and disclosure on different family members (Welfare, 2008) all contribute to the impact on family and other relationships. Complex, strained or estranged relationships with family members may often result, as well as emotional distance from sexual partners who are either not told about or respond unhelpfully to knowledge of the sexual abuse (e.g. Brown, 1997; Kiegelman, 1997; King-Hill, McCartan, et al., 2023; McCartan et al., 2022).

Very little is known about the impact on the child responsible. Vandegriend (2002) interviewed three brothers who had abused sisters, reporting that they held negative views of themselves, had high levels of self-harm and suicidal thoughts alongside continuing to minimise the SSA. Depression, hyper-eroticisation, alcohol or substance dependence are also reported (Beard et al., 2013; Marmor & Tener, 2022; O'Keefe et al., 2014; Stroebel, O'Keefe, Beard, et al., 2013; Stroebel, O'Keefe, Griffee, et al., 2013; Taylor, 1996) but significant further research is required in this area.

The impact on parents and the wider family depends upon several factors, including the level of family stress, parents' own abuse history and their coping ability. The family may be thrown into crisis (Fontana, 2001; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020) and parents' immediate reactions may not be indicative of actions they subsequently take to protect the child harmed from further abuse (Grant et al., 2009; Lafleur, 2009). Parents' feelings of anger, shame, self-blame, loss and grief, self-harm behaviours, PTSD, depression, nightmares, suicidal thoughts, adverse effects on physical health, stigma, and isolation and estrangement from friends and the wider family are all reported (Bass et al., 2006; Boyers, 2020; Lafleur, 2009; Welfare, 2008; Welfare, 2010; Westergren et al., 2023). The challenges for parents of attending to the children's needs, while feeling torn between those of the child harmed and child responsible (Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020) and while trying to manage their own emotions, is highlighted by Westergren et al. (2023). Parents report difficulty in accessing appropriate services following disclosure (Grant et al., 2009; Lafleur, 2009). Nonetheless, some parents report positive changes in their parenting resulting from the crisis, including stronger, closer relationships with their children as well as the children's developed ability to manage emotionally and relationally (Grant et al., 2009; Lafleur, 2009; Welfare, 2008; Westergren et al., 2023).

Westergren et al. (2023) observe that non-abused siblings are totally dependent upon their parents' ability to explain and make sense of the whole situation, and this is something many parents find difficult for the reasons outlined above. Non-abused siblings may become very protective of the child harmed, angry with them for splitting up their family, or frightened they will be abused themselves (Fontana, 2001; Welfare, 2008). Some non-abused siblings withdraw from family engagement altogether (Welfare, 2008). SSA is a serious form of child sexual abuse that affects not only the child harmed, but also the child responsible, parents and other siblings, their responses all interacting with each other.

3.10. Professional responses and intervention

Professional responses and intervention are discussed by 27 papers, but only three papers report on evaluations of just two interventions (Grant et al., 2009; Halse et al., 2012; Streich & Spreadbury, 2017). Earlier papers found professional responses mostly minimised survivors' experiences as SSA was not taken seriously. These responses were noted to re-victimise the children harmed and survivors, compromise the disclosure and recovery process, and reinforce problems within the family (Boyers, 2020; O'Brien, 1989; Rowntree, 2007). Interventions to address the behaviour of the child responsible were undertaken in isolation from any support offered to the child harmed and without consideration for the reciprocal implications of each other's recovery in the context of their sibling and family relationship.

Later papers differentiate between professionals with experience and expertise of working in this area and those without. While minimising responses continue to be common, catastrophising and exaggerating responses (King-Hill et al., 2022; King-Hill, Gilsenan, & McCartan, 2023; King-Hill, McCartan, et al., 2023) and a range of confused, confusing as well as helpful responses are reported (Boyers, 2020; McCartan et al., 2022; Tener & Silberstein, 2019; Yates, 2015). Responses are influenced by the jurisdiction in which the professionals work as well as the views and attitudes of the professionals themselves (Collin-Vézina et al., 2014; Daly et al., 2014; Harper, 2012; O'Brien, 1989; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020). We found overwhelming agreement, however, that experienced professionals (across the disciplines) from the UK, USA, Australia and

Israel, as well as people with lived experience, understand SSA as a complex, multi-faceted phenomenon that requires a collaborative, multi-disciplinary, and whole-family response (Grant et al., 2009; Harper, 2012; James, 2015; King-Hill et al., 2022; Streich & Spreadbury, 2017; Taylor et al., 2021; Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020; Welfare, 2008; Welfare, 2010).

However, there is no clear articulation or evaluation of a whole-family intervention with an underpinning theory of change. The evaluation of the SafeCare Young People's program in Australia (Grant et al., 2009; Halse et al., 2012) reports positive changes in a number of important areas (e.g. boundary-setting, self-control and social skills) and highlights the value of involving parents in interventions to support children responsible; however, it does not clarify support for the whole family or the effectiveness of any input for children harmed. The evaluation of the pilot of the Restore project in the UK (Streich & Spreadbury, 2017) similarly records positive progress for children harmed (e.g. improved symptoms of trauma, anxiety and depression) but lacks representation of the views of parents and children responsible.

A key factor in recovery for children harmed and survivors is that they are able to recognise what they experienced was abuse and locate responsibility with the sibling who harmed them (e.g. Fontana, 2001; Harper, 2012; King-Hill, Gilsenan, & McCartan, 2023; King-Hill, McCartan, et al., 2023; Tener & Silberstein, 2019; Welfare, 2008). Recovery within the family is supported by this recognition from parents, and ideally the child responsible (Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener & Silberstein, 2019; Tener, Tarshish, & Turgeman, 2020; Welfare, 2008). Fontana (2001) and Harper (2012) found the clarification process (through which, at a suitable point in therapy, siblings are supported to come together to clarify what happened and who was responsible for the abuse) is critically important to the recovery of both the child harmed and the child responsible.

Streich and Spreadbury (2017) found criminal justice processes could be detrimental to family recovery, while more restorative approaches in Israel and Australia have shown promise (Tarshish & Tener, 2020; Daly & Wade, 2014). Different systems of justice are available in different countries and questions remain as to the appropriateness of these approaches depending on the particular circumstances (Tener, Katz, & Kaufmann, 2020; Tener, Newman, et al., 2020; Tener, Tarshish, & Turgeman, 2020). Professional opinion also remains divided over whether and in what circumstances the child responsible should be separated from the child harmed (Taylor et al., 2021). There is no research on the long-term outcomes for families of separation and reunification to inform such decision-making.

Further work is needed to articulate and evaluate a whole family approach to SSA, to inform when such an approach may be contraindicated, and to better understand what supports recovery for adult survivors. Frontline professionals need a better understanding of the complexities of SSA to make informed decisions and to intervene sensitively and appropriately.

4. Discussion

We aimed to answer the question 'What is known about SSA?' Although the increased interest over the last 10 years has developed our knowledge in this field, misconceptions prevail (such as around prevalence, gender, age differences, family characteristics and impact), and the evidence-base to support practitioners and families affected by SSA remains thin. Our review challenges some of these misconceptions. The main advances and gaps in knowledge, evidence for practice and recommendations for future research are summarised in Table 3.

Here we will outline six key recommendations for areas of research, which we regard as requiring urgent attention. First, establishing a consistent definition of SSA is necessary in order to bring coherence to the concept; to enable children, survivors and practitioners to recognise abuse; and to ensure that research examining different aspects of the phenomenon can be compared and synthesised. We aim to examine this in more depth in a subsequent paper.

Second, establishing the prevalence of SSA within the general population of different countries, broken down according to children's sex and different types of sibling relationship, is essential for planning the services required to support families affected. We did not find sufficient evidence to support claims often made (e.g. Yates & Allardyce, 2021) that SSA may be three times as common as parent-child abuse, or even the most common form of intrafamilial child sexual abuse. However, SSA still affects a huge number of people. In a recent Australian national survey, Mathews et al. (2024) found a prevalence rate of 1.6 %, which if replicated would equate to over one million people in the UK and over five million people in the USA sexually abused by a sibling, not to mention the numbers of children responsible, parents and other siblings also affected.

Third, we need to develop evidence-based theories of the aetiology of SSA, which include a deeper understanding of the nature of sibling relationships, to understand how the abuse begins and is sustained and what may differentiate children who present extra- as well as intra-familial risks. This is vital for prevention, risk assessment and management, and to tailor intervention. As with previous reviews (Bertele & Talmon, 2021; Tidefors et al., 2010), our review found families in which SSA takes place are often characterised by high levels of stress, including high levels of parental conflict and domestic abuse. However, theoretical links between family factors and SSA are under-developed. A significant proportion of parents have themselves experienced sexual and other abuse, and are often experienced as emotionally unavailable to their children. Understanding parents' own upbringing and how they manage stress and trauma may give insight to children's pathways into – and out of – abusive sibling sexual behaviour. Why some children sexually abuse siblings without having apparently experienced abuse or family stress also needs examination. Our knowledge around SSA has largely been shaped by research in Western cultural contexts (see Fig. 2); investigating SSA in other cultural contexts will expand and deepen our understanding. As Allardyce and Yates (2018) argue with respect to harmful sexual behaviour more broadly, the heterogeneous nature of the children and the range of behaviours involved in SSA suggests different theories may be required to understand abusive behaviour in different family and cultural circumstances.

Fourth, and also relevant for prevention, we need to investigate what prompts and supports children to disclose and the impact of

(continued on next page)

 Table 3

 Summary of patterns, advances in knowledge, gaps, evidence for practice and research recommendations.

Pattern	Advances	Gaps	Evidence for practice	Research Recommendations
Definitions	*SSA may include girls abused by brothers and/or sisters, and boys abused by brothers and/or sisters. *Age disparity or use of force no longer feature as required criteria to consider the sibling sexual behaviour as abusive.	*Lack of clear and consistent definitions of 'sibling' and 'sibling sexual abuse'.	*Research mostly focuses on siblings who are biologically related and have grown up together in the same household. When relationships deviate from this definition, the applicability of research must be evaluated. *While some signs (like force or threats) indicate abuse, absence of such signs does not negate abuse. *Understanding sibling relationship dynamics is crucial.	*Linking SSA literature with sibling relationship studies is crucial for understanding sibling power dynamics. *Defining "sibling" is essential for comparing different relationships and bringing coherence to the concept of SSA. *Establishing a clear definition for "sibling sexual abuse" is a priority.
Prevalence	*Sibling sexual behaviour and abusive sibling sexual behaviour are common and widespread. *While brother-sister abuse is the most common pairing, brother-brother, sister-brother and sister-sister abuse are also widespread.	*No large-scale studies with a more representative sample of the population and broken down according to different sex pairings and sibling types have yet been undertaken to establish a more accurate picture of the prevalence and dynamics of SSA.	*Frontline professionals must be able to recognise SSA as they are likely to encounter affected individuals. *A significant proportion of sibling sexual behaviour is coercive, so practitioners should be cautious about dismissing it as harmless exploration. *When identifying child sexual abuse indicators, siblings should be considered among those having the potential to cause harm.	*Conduct populational studies on the prevalence of SSA.
Characteristics of the abuse	*SSA primarily involves boys as the child responsible, with a significant minority being girls. Children harmed are mainly girls but include boys. *Abuse can start at any age. Children responsible are typically older but sometimes younger. *Abuse usually entails repeated incidents over long periods, but single instances do occur. *Official records likely understate its extent. *Some children responsible may harm both siblings and non-family members, while children harmed may suffer abuse from multiple siblings.	*Historical research bias towards boys leaves girls' involvement in SSA understudied. A focus on brothers abusing sisters neglects understanding of boys harmed and other sexpairings. *The impact of sibling relationships (biological, step, foster) remains poorly understood due to inconsistent definitions. *Research on the relationship between age and the nature of behaviours is inconclusive. Younger children and sibling abuse in older teen or adult years lack research attention. *Understanding the developmental trajectory of abusive behaviour within sibling relationships is also lacking.	*Children harmed are primarily pre-adolescent and children responsible are primarily adolescent, yet younger children can also be responsible and children harmed can be 16 years old or more and remain vulnerable. *Age alone should not be used to determine abuse severity or responsibility. *Abuse often occurs over extended periods of time and may involve multiple incidents. Single incidents should not be dismissed as non-abusive and it should be considered that more abuse may be disclosed over time. *Abuse is not necessarily confined to a single	*Using modal age may aid understanding of onset and aetiology more than mean age. *Large-scale, current studies are needed to grasp SSA characteristics, including differences between older and younger children, different age disparities, sex-pairings (especially with females responsible), sibling relationship types, single versus multiple incidents, sustained abuse, and underlying patterns. *Further research is needed to comprehend the course of SSA and factors contributing to its cessation, beyond disclosure, discovery, or changes in living arrangements.
Family Characteristics	*SSA can take place in any kind of family, transcending socioeconomic status and family types. *It is often associated with family stress (e.g. domestic abuse, parents' affairs and emotionally unavailable or absent parents). *Loose or rigid family sexual boundaries and gendered power dynamics can foster abuse. *Children responsible often have a history of trauma, while children harmed share similar stressors and may face additional abuse.	*Understanding why children may sexually abuse siblings in the absence of family stress and without prior abuse or trauma remains unclear. *Knowledge gaps exist regarding girls as children responsible, different sex-pairings, and diverse ethnic backgrounds. *The impact of learning disabilities and neurodiversity warrants exploration. *Limited data on children harmed and children not involved hinders understanding of abuse dynamics and victim selection within families.	support. Addressing family stress is important in its own right and in terms of its possible role in	*Further research is needed to distinguish between children who abuse siblings only, those who abuse outside the family only (despite having siblings), and those who abuse in various settings. *Understanding differences across sex-pairings and cultural backgrounds, and the potential role of learning disabilities, is crucial. *Conducting more robust research examining larger, well-known samples of children responsible, children harmed, non-involved siblings and the nature of sibling relationships as well as systematic reviews with meta-analyses will enhance understanding, inform risk assessments and support prevention.

Table 3 (continued)

Pattern	Advances	Gaps	Evidence for practice	Research Recommendations
Aetiology	*SSA is often linked to prior trauma and family stress, harmful sexualisation and lack of parental availability and supervision. *There are likely to be different pathways to abuse for different children.	*The field is generally under-theorised insofar as explaining what might link backgrounds of abuse and trauma with behaving in a sexually abusive way. *It remains unclear why some children may sexually abuse siblings in the absence of experiences of abuse and family stress.	*Practitioners should consider the likelihood of children harmed experiencing other abuse forms. *A detailed, individualised assessment of a child's developmental history is required to understand why they have abused, how likely they are to abuse again, against whom and in what circumstances, to inform what can be done to reduce risks and to promote healthy development and positive outcomes. An examination of the sibling relationship should inform this assessment.	*More research with larger samples, a more comprehensive range of factors and in-depth qualitative studies with families is needed to theorise the aetiological connections between family stress, abuse experiences and sibling sexual abuse, and to address different sex-pairings, cultures, younger and older children, children abusing in different contexts and children who displaying other forms of anti-social behaviour.
Disclosure	*Childhood disclosure of SSA is rare due to multiple barriers and discomfort in talking with or in front of parents. *Positive responses to disclosures from parents or professionals are uncommon. *Parents' initial reactions may not reflect subsequent protective actions.	*Further research is needed on disclosure patterns among boys and girls abused by sisters and boys abused by brothers. *Understanding what prompts and supports the disclosure process, especially for children with communication challenges, is crucial. *Studying disclosure in diverse cultural contexts would be valuable.	*Children need comprehensive sex education in primary school, including recognising siblings as potential sources of abuse.	*Up-to-date surveys are crucial to assess disclosure rates, recipients, and responses to guide awareness initiatives and monitor training effectiveness.
Impact	*Sibling sexual abuse has similar consequences to other forms of sexual abuse, proving equally harmful as abuse by a parent. *SSA affects the whole family, including parents and non-abused siblings.	*Limited knowledge exists about the childhood versus adulthood impact and the timing of trauma manifestation. *Research is needed to grasp impact variations among different sex pairings and groupings. *Short-term and long-term outcomes for children responsible are poorly understood. *Further studies on parental, sibling, and widerfamily impact, including impact interactions, is essential.		*Further research is needed to grasp SSA impact and its manifestation during childhood. Disentangling the characteristics of children harmed pre-abuse from the impact of the abuse
Professional responses and intervention	*A range of minimising, catastrophising, exaggerating, confused, confusing and helpful responses by professionals are reported. *Specialists and people with lived experience agree that SSA is a complex phenomenon requiring a collaborative, multi-disciplinary, and whole family response. *Restorative approaches that recognise the abuse and establish accountability and responsibility may aid family recovery.	*Clear articulation and evaluation of the long-term outcomes of whole-family interventions with an underpinning theory of change are lacking. *Questions remain regarding the appropriateness and effectiveness of different approaches to justice. *An evidence base to guide decision-making regarding sibling living and contact arrangements following SSA is lacking, with professional opinions remaining divided.	*Specialist professionals and interdisciplinary collaboration with shared language and common goals are essential in addressing SSA. *Training for frontline health, education and social work professionals is imperative. *A whole-family response is required that recognises the sibling sexual behaviour as abusive and as a potential symptom of wider stress within the family.	*More research is needed to explore responses

the family and cultural context on the disclosure process. While much attention has been given to barriers to disclosure, given the common family factors identified here and in other reviews (Adams, 2024; Bertele & Talmon, 2021; Tidefors et al., 2010), it is perhaps unsurprising children harmed rarely disclose the abuse, and when they do that they report unhelpful or harmful responses. There appears to be a disjuncture between understanding the family context in which SSA often happens and expectations of how that same family might understand and respond to children harmed and responsible. Maintaining an ideology of 'family' as a place of stability and security (Yates, 2020), as also observed in social services more widely (Dingwall et al., 1983; Munro, 1990), is likely to misalign with the support needs of children and parents. Our findings suggest a further barrier to disclosure is children lacking the knowledge and vocabulary to understand their experiences as abusive. Contrary to current UK government proposals to ban sex education in schools for children under the age of nine (Morton & Evans, 2024) and restrictive policies in other jurisdictions, our findings suggest sex education should be provided universally in school from a young age as part of a child sexual abuse prevention strategy. Equally, we need a better understanding of how children try to alert others to the abuse in the absence of having the language to do so, and how we shift responsibility away from the child having to tell and towards supporting professionals and family members to recognise signs of abuse and intervene effectively.

The fifth area we propose needs examination is the impact of SSA on children harmed and children responsible to develop effective interventions. SSA can be as harmful as sexual abuse by a parent including consequences for ongoing family and other adult relationships, but we know less about its impact during childhood and in non-clinical populations, and what factors may influence the impact of abusive and other forms of sibling sexual behaviour for different people and in different circumstances. Particular investigation is required to understand the impact of the abusive sexual behaviour on children responsible throughout the lifecourse, in order to inform holistic programmes of support to promote these children's long-term welfare and healthy developmental trajectory (Hackett et al., 2022).

Sixth, a clear articulation and evaluation of a whole-family intervention with an underpinning theory of change is a priority to guide practice developments in this field. In order to inform such an intervention, we need to have a greater understanding of the needs, lived experiences and perspectives of all stakeholders in the family, whose voices are so far marginal in the research undertaken. We need to take account of the family context (e.g. domestic abuse and parent-child sexual abuse) in considering when a whole-family approach may be contra-indicated, and what family involvement might be appropriate for adult survivors. Limited research suggests that criminal and youth justice responses may, in some circumstances, impede recovery of the child harmed and of the family as a whole. Further examination and comparison of different systems of justice across jurisdictions could usefully identify which systems may effectively support family recovery and, if appropriate, restoration.

5. Conclusion

Our guiding research question asked: What is known about sibling sexual abuse? To begin to answer this question we intentionally adopted a broad approach. Further articles will report on stage two of the review and provide greater critical depth about particular aspects of SSA. This paper presents key findings across eight patterns from the literature, as well as a summary of practice and research recommendations. The inclusion of 91 empirical papers represents, to date, the most comprehensive (albeit not complete) overview of the current body of knowledge in this field. This review builds on the research in this area by synthesising what we know about sibling sexual abuse and presenting a research agenda to further develop our understanding. In this way, we hope to support children, families, professionals and survivors.

CRediT authorship contribution statement

Peter Yates: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Eve Mullins:** Writing – review & editing, Writing – original draft, Project administration, Investigation, Formal analysis, Data curation. **Amy Adams:** Formal analysis. **Stephanie Kewley:** Writing – review & editing, Formal analysis.

Data availability

No data was used for the research described in the article.

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