

Original citation:

Wolke, Dieter, Tippet, Neil and Dantchev, Slava. (2015) Bullying in the family : sibling bullying. The Lancet Psychiatry.

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<http://www.thelancet.com/journals/lanpsy/issue/current>

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Bullying in the Family: Sibling Bullying

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Key terms: sibling bullying, family, parenting, mental health, intervention

Number of words: 4450

Conflict of Interest: None

Contributors: DW conceived the review; DW, NT and DS conducted the literature searches for different parts of the review, read the articles and summarised these in tables. DW and NT drafted the manuscript and DS critically reviewed the first version. All authors critically reviewed the revised versions.

Abstract

Sibling relationships have a significant and lasting impact on children's development. Many siblings experience some occasional conflict, however, up to 40% are exposed to sibling bullying every week, a repeated and harmful form of intra-familial aggression. Evidence on the precursors, relationship with peer bullying, and mental health consequences of sibling bullying are reviewed. Parenting quality and behaviour are the intra-familial factors most strongly related to bullying between siblings. Sibling bullying increases the risk of being involved in peer bullying, and is independently associated with concurrent and early adult emotional problems, including distress, depression and self-harm. The effects appear to be cumulative, with those bullied by both siblings and peers having highly increased emotional problems, likely because they have no safe place to escape from bullying. The link between sibling and peer bullying suggests interventions should start at home. Health professionals should ask about sibling bullying and interventions are needed for families to prevent and reduce the health burden associated with sibling bullying.

Introduction

There is increasing evidence that sibling bullying, a form of aggression which is carried out repeatedly, adversely affects the mental health of children. We review how and why sibling relationships may influence child development and mental health, what sibling bullying is and how it relates to rivalry and aggression between siblings, and how prevalent sibling bullying is and what family factors are associated with it. Furthermore, the association between sibling and peer bullying will be reviewed and the impact of sibling bullying on mental health outcomes explored. Some general programmes dealing with sibling relationships in families are identified and future directions of research and clinical interventions are discussed. It is argued that sibling bullying is an important factor to consider in children's development in general, and in particular, by health professionals involved with mental health.

Siblings

Worldwide, most children have siblings. In the UK over 85% of adolescents have at least one sibling¹; in other regions it is normal for families to have several siblings², with the largest offspring size found in sub-Saharan Africa³. There are exceptions, such as the China "One Child Policy (OCP)" which restricted the number of children that urban couples could have to one between 1979 and 2013 when it was relaxed⁴.

Sibling relationships are usually the most enduring relationships in a lifetime⁵⁻⁷ and by middle childhood children spend more time interacting with siblings than with parents⁸. Siblings play an important role in each other's lives as companions, teachers, and caregivers⁹ and can significantly contribute to each other's development and adjustment. Siblings may have either a direct (i.e., related to child-sibling interactions) or indirect effect (i.e., related to one child's impact on parents and therefore on siblings) on each other's development¹⁰.

Positive sibling ties and interactions can facilitate the acquisition of skills that are important in cognitive development^{11, 12}, provide emotional support¹³, and buffer siblings from adverse life events¹⁴, including marital conflicts¹⁵ or poor peer relationships¹⁶. Furthermore, sibling relationships are independently associated with later adolescent adjustment and well-being, even after controlling for parental and peer influences¹⁷⁻¹⁹.

Sibling rivalry

Sibling relationships however are not always harmonious and supportive. Severe sibling jealousy and rivalry have been documented since ancient times, most notably through the story of Cain and Abel (Old Testament, Genesis 4). The term sibling rivalry was coined by child psychiatrist and psychoanalyst D. M. Levy to refer to jealousy of the mother's love²⁰. He used an experimental projective approach with children aged 2-13, where clay dolls were used to represent a baby at the mother's breast and an older child standing next to them. Children were asked: "And then the [brother/sister] sees the new baby at the mother's breast. [He/she] never saw him before. What does he do?" The young children's responses often involved attacking the baby doll i.e. destroying, biting, tearing or crushing it with his feet²¹. This was often justified as being a prohibitive parent: "The baby is bad" or "because she was bad. She wanted to hit the baby". "We don't need two babies in one house" [p. 361]. Levy's observations of various populations and tribal societies led him to conclude that sibling rivalry is a universal situation among people regardless of their various cultural forms, arising directly out of biologic behaviour. He concluded that sibling rivalry, the aggressive response to the new baby, is so typical that it is a common feature of family life²².

Sibling rivalry stemming from a new-born baby may be conceptualised within Miller's²³ Frustration-Aggression hypothesis, that postulates that the occurrence of aggression always presupposes the existence of frustration. It is easy to see that a first child may be frustrated by

the arrival of a new child in the family. Assuming equal care, the 100% attention that the first child once had will be at least halved, while a second child will only ever have had 50% of attention. For a new arrival this will be further reduced to 33% and so on. In the triangle of sibling rivalry, which comprises the sibling, their beloved parent, and their rival sibling, this is shown in the form of initial frustration and later jealousy, a complex social emotion. Indeed, it has been found that jealousy and related behaviour is linked to persisting poorer sibling relationship quality²⁴.

Some cultural variations in the nature and dynamics of sibling relationships have been observed, most notably according to individualistic or collectivistic norms. In collectivistic societies, which place greater focus on group rather than individual goals, siblings spend more time together, and have more hierarchical relationships, with older siblings commanding greater respect, but also taking on the responsibility of providing care for younger siblings^{25, 26}. Accordingly, cross-cultural comparisons have found sibling relationships show greater support, companionship, intimacy, and satisfaction in collectivistic or family orientated societies compared to individualistic ones^{25, 27-29}.

Sibling Aggression or Sibling Bullying

The lack of an accepted definition, as well as the use of differing terms, such as aggression, violence, abuse, bullying, or rivalry, has been a barrier to research on sibling aggression^{1, 7, 30}. Where possible we focus on sibling bullying, which is a form of aggression between siblings that involves direct or indirect acts, which are performed intentionally, over time, and involve an imbalance of power (see Box 1). It thus excludes infrequent or singular acts of aggression, which may be better described as sibling rivalry, and incidents of extreme violence or sexual abuse, which may be criminal in their nature⁷.

BOX 1. Definition of sibling bullying

Sibling bullying may be defined as “any unwanted aggressive behaviour(s) by a sibling that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated; bullying may inflict harm or distress on the targeted sibling including physical, psychological, or social harm. It encompasses two modes of bullying (direct and indirect) as well as four types of bullying (physical, verbal, relational, and damage to property).”

Adapted from CDC uniform definition of peer bullying³¹

Considering the similarities between children’s relationships with siblings and with peers³²,³³, bullying seems to be the most appropriate term to use for several reasons: Firstly, bullying occurs in settings where individuals do not have a say in which group they want to be in. This is the situation for both children in school classrooms and those at home with their siblings. In an analogy to experimental studies on social defeat in animals, this may be considered as siblings being “caged” together in the same space³⁴, often in the absence of an adult, which leads to familiarity that can breed contempt³⁵. Secondly, siblings differ by sex and age, thus are rarely equal in terms of size or physical or mental strength. Older siblings may use their size advantage to bully a younger sibling, and males may have more physical strength than a female sibling; therefore there is an imbalance of real or perceived power. Thirdly, repeated direct or indirect acts of aggression are a hallmark of bullying definitions³⁶. As with peers, repeated acts of aggression may not be seen simply as a reaction to frustration, but as an effort to establish a social hierarchy and access to resources (attention, love, material goods etc.), a characteristic of peer bullying traced across societies and time³⁷. It has been shown that conditions that foster higher density and are conducive to hierarchies, i.e. unegalitarian

conditions that reward getting ahead of others, increase bullying in classrooms^{38, 39}, at home³³ or even in nations⁴⁰, and are associated with greater stability of bullying over time⁴¹.

Considering the conditions (siblings are not chosen friends), repeated use of aggression, an imbalance of power, and the effort to seek access to resources, then this aggression between siblings may be considered as *sibling bullying* (see Box 1).

BOX 2. Search Strategy

To identify research on the nature and correlates of sibling bullying, systematic searches were carried out using the PsycINFO, PubMed, Web of Knowledge, and Google Scholar databases, using the keyword “sibling” in combination with the terms “bullying”, “aggression”, “rivalry”, “abuse”, “violence”, and conflict”. Searches were limited to peer-reviewed studies, published since 1990. Additional hand searches were carried out by checking article reference lists. All search results were screened for relevancy to sibling bullying, yielding a total of 19 studies.

An additional search focusing on intervention programmes was performed using the PsycINFO, PubMed, ScienceDirect, and Google Scholar databases, with the terms “sibling intervention” or “improving sibling relationship” in conjunction with the words “bullying”, “aggression”, “rivalry”, “abuse”, “violence”, and conflict”. After screening for relevancy, the search returned 7 results.

Prevalence

There is surprising paucity of studies on sibling bullying, or even sibling aggression more generally. Systematic searches of online databases show that in the last 25 years, only a small

number of studies have predominately focused on bullying behaviour among siblings (N =19; see Box 1). All of these studies fit with the definition provided above, in that they consider physical (e.g. hitting, kicking, pushing,), verbal (name calling, threats), or relational (exclusion, rumour spreading) acts of aggression between siblings, that are used repeatedly over time. Most studies rely on child self-reports, and although some also use parent reports, particularly among younger children, these are likely to be underestimates, as parents are probably unaware of every physical fight between siblings, and may know even less about indirect bullying, as this is not always disclosed to the parents, just as with peer bullying⁴².

Table 1 here

As Table 1 shows, studies vary greatly in their approach to measuring sibling bullying, using differing instruments and cut-off points (e.g. ever vs within the last six months), yet despite these differences, all agree that sibling bullying is widespread, and experienced by a large proportion of children and adolescents. When considering any form of involvement, prevalence rates vary from around 15-50% for victimisation by siblings, and 10-40% for perpetrating sibling bullying. This prevalence rate is higher than found for peer bullying, where typically between 5-20% of children are victimised, and 2-20% bully others⁵⁰. Direct comparisons show a higher frequency of sibling than peer bullying^{33, 35, 48}.

A unique aspect of sibling bullying is the high prevalence of bully-victims, children who are both victimised by, but also bully their siblings^{1, 33, 35}. Most children involved in sibling bullying fall into this category, contrasting distinctly with peer bullying, where children tend to adopt stable victim or bully roles (although these decline with age)^{51, 52}, and only a small minority are identified as peer bully-victims⁵⁰. The ability to change between roles in sibling relationships may be evidence of a more fluid power dynamic, whereby siblings use their familiarity to gain an advantage over each other, thus they are less likely to become confined to being only victims or only bullies.

The behaviours involved in sibling bullying closely resemble findings on peer bullying, with most children reporting a range of physical, verbal, or relational behaviours^{1, 35, 43, 44}. There are also similarities regarding age and sex variations. As with peer bullying^{53, 54}, incidence of sibling victimisation and bullying perpetration shows some decline with age, particularly in physical aggression^{1, 6, 49}, and males are more likely to perpetrate acts of sibling aggression, although there are no clear gender differences in regards to victimisation^{1, 35, 44, 55}. While these characteristics show individual associations, the sex and age composition of the sibling relationship can have a significant impact on overall rates, with more sibling bullying reported in male-male³⁰ or older male-younger female sibling dyads⁵⁵.

Overall, the evidence obtained from both national surveys and opportunistic studies in the USA, UK, Italy, Israel and Australia suggest that sibling bullying is the most frequent form of maltreatment, more so than by parents, adult strangers, or peers^{5, 45, 56, 57}. As a result, relationships with siblings are likely to be the most aggressive relationships that children will ever encounter during their childhood.

Family Factors associated with Sibling Bullying

As the primary environment in which sibling's interact, household and family characteristics may have some influence on rates of aggression. A handful of studies (Table 2) have explored these associations. Household or family characteristics can be broadly grouped into three categories: structural factors, including household composition, number, age and sex of siblings; socioeconomic factors, including household income, parental education and occupation; and adult/caretaker behaviour, such as child maltreatment and parenting behaviour.

Table 2 here

The composition of the household has some impact on rates of sibling victimisation and bullying perpetration. Consistent with self-reports, overall rates of sibling bullying are higher in households with male siblings^{1, 6, 30}, and younger children tend to experience more victimisation, often at the hand of an older sibling^{47, 55}. Supporting Levy's hypothesis²⁰, some found sibling bullying occurred more often among siblings who were close in age (less than a year apart)³⁰. Furthermore, as the number of children within a household increases, so does the rate of sibling bullying^{1, 47}. There is no evidence to show that living in a single-parent or step family increases the risk of sibling bullying with the exception of one study⁶².

Few studies examined the association between socioeconomic characteristics and sibling bullying, despite evidence showing greater rates of any intra-familial violence within low socioeconomic families^{6, 57}. At present, findings are mixed. Although higher rates of aggression have been found in low income families⁶ or those experiencing financial stress¹, higher parental education also predicts more sibling bullying^{1, 30, 62}. Similar to findings on peer victimisation⁶³, sibling bullying is frequent in families of all social strata .

Cultural variations have also been found through comparisons between native born and immigrant US children. Immigrant siblings spent more time together, were more intimate, and provided greater social support^{59, 64, 65}, while native born US siblings experienced greater conflict and bullying^{6, 7, 30}. It is not yet clear how cultural differences interact with other societal characteristics, such as socioeconomic status or parenting behaviour, to affect sibling relationships²⁶.

The most consistent associations have been found with adult/caretaker behaviour. Child maltreatment or adult-to-child violence significantly increases the risk of sibling victimisation and bullying perpetration^{6, 43, 45, 47}. Similarly, a lack of parental warmth⁵⁹, harsh parenting¹, and low supervision^{59, 62} have also been linked with more bullying between siblings. Studies

on general sibling conflict^{66, 67}, as well as on sibling bullying⁵⁹, identified a link with differential parental treatment of siblings, suggesting that sibling bullying may be motivated by inequality and a desire to improve one's status, thus mimicking the motivations that underlie bullying at school³⁷.

Sibling bullying – is there a link to peer bullying?

There are reasons to suggest that interactions within the family, including sibling relationships, may generalise to children's interactions with peers in other contexts, such as school². Social learning theory suggests that children learn particular behaviours in relationships with their parents and siblings and that these behaviours generalise to their interactions with peers and friends^{68, 69}. Attachment theory proposes that children's relationships with peers and siblings are influenced by internal working models of relationships which are carried forward from their earliest relationships with attachment figures^{70, 71}. Furthermore, there is evidence that children's enduring characteristics, such as temperament, may elicit similar responses from different relationship partners⁷². While each of these theories suggests some transference between children's relationships with siblings, friends and peers; the proposed mechanisms linking relationships differ.

Alternatively, there are also reasons to expect few associations between children's familial and extra-familial relationships. Firstly, siblings growing up in the same context only share, on average, 50% of their segregating genes, and they are subject to non-shared experiences in the family and to differential treatment by their parents⁷³. Secondly, children in peer relationships are from different families and may have different temperamental characteristics, interests and talents. Their previous experiences in relationships vary and their beliefs and expectations about how to behave in relationships are likely to differ also. Finally, societal norms and culturally held beliefs about how one should behave in particular

relationships, such as sibling relationships compared to best friendships, encourage differences and may decrease the likelihood of associations between them⁷⁴. Indeed, the pattern of findings has been inconsistent with no simple 'carry-over' from sibling relationships to friendships⁷⁴. However, is this also true for adverse sibling experiences such as sibling bullying?

Studies that have investigated the relationship between sibling and peer bullying are shown in table 3.

Table 3 here

Two studies just looked at sibling victimisation^{2, 48} while the others looked at both bullying perpetration and victimisation among siblings^{1, 35, 55}. Firstly, all findings support a significant carry over from sibling bullying to involvement in peer bullying. Secondly, where studied, the findings indicate a homotypic (i.e. same role in sibling and peer bullying) carry over across contexts¹ and this may apply more so for boys than girls⁵⁵. However, as reported above, most children involved in sibling bullying get victimised and retaliate (bully/victims). The two studies that provided statistics investigated just sibling victimisation and perpetration. Not surprisingly both were highly correlated. Clearly more studies are needed but the evidence supports the theory that adverse sibling relationships transfer to similar experiences in peer relationships.

All studies were cross-sectional investigations and do not allow for causal interpretation. Longitudinal studies are necessary to conclude that sibling bullying is a precursor of peer bullying. One innovative study combined direct observation of sibling directed antisocial behaviour in the family's homes at 3 and 6 years and interaction of unfamiliar peers in an experimental setting⁷⁵. Antisocial behaviour between siblings was observed at home when the children were 3 and 6 years old, and at 6 years they were invited to the laboratory where they

were paired with two other unfamiliar children for a triadic play situation. Those young children who showed sustained high antisocial behaviour towards their siblings (3 and 6 years) were more likely to bully or refuse to share or interact with unfamiliar peers. Thus, at least in young children, experiences with siblings are predictive of aggressive behaviour towards unfamiliar peers.

Sibling bullying and emotional and behaviour problems

Considering that sibling bullying is widespread, the crucial question is whether it has any adverse emotional or psychiatric outcomes or is just a phenomenon without consequences. As shown in table 4, there are currently 5 cross-sectional studies and only one prospective study that specifically investigated the relationship between sibling bullying and emotional problems. Four of the five studies found highly raised depression and loneliness scores³⁵ and more behaviour problems within the clinical range using the Strengths and Difficulties Questionnaire (SDQ)^{2, 44}, a reliable and valid screening questionnaire for psychiatric problems in childhood and adolescence^{76, 77} or increased mental distress⁷⁸. Three of the studies also reported that a) the associations with behaviour problems were stronger the more severe the sibling victimisation was, i.e. involved both verbal and physical bullying² or mental distress was increased the more severe the physical assault⁷⁸; or b) the odds of behaviour problems were increased up to 14 times if the child was bullied both at home and by peers at school^{2, 44}. The effects of sibling and peer victimisation were found to be additive rather than interactive in the US survey⁷⁸. Where investigated, it appears that those who were both victims and bullies (sibling bully/victims) were at higher risk of behaviour problems than those who were only victimised. No increased risk was found for bullies². In contrast, the UK survey of maltreatment found only increased mental distress (reported by the parents) in relation to sibling victimisation in children 0-9 years but not in the self-reports of

adolescents or young adults⁴⁵. The two national maltreatment surveys in the USA and the UK revealed two other important findings in multivariate regression analyses. Firstly, the US survey found that sibling bullying independently predicted mental distress as much as child maltreatment and more so than sexual victimisation by adults⁷⁸. Secondly, both US and UK surveys found that peer victimisation had stronger associations with mental distress than maltreatment by adults (see peer bullying in this issue)⁴⁷.

Table 4 here

The cross-sectional studies do not allow for the interpretation of the direction of influence. It is possible that children who have emotional or behavioural problems are more likely targets of sibling bullying. A large prospective study of peer and sibling bullying recruited mothers in pregnancy and regular assessments of child and parent mental health and peer bullying were carried out. When the children were 12 years old they completed a detailed questionnaire about sibling bullying and mental health (depression, anxiety diagnoses) and self-harm experiences were assessed at 18 years of age⁴⁷. This study found that after controlling for a range of family factors, pre-existing behaviour, and emotional problems as well as peer bullying, child maltreatment by adults, and domestic violence in the household, sibling bullying uniquely increased the risk of clinical depression and self-harm about two-fold (table 4). Furthermore, a dose-response relationship was found, indicated by a linear trend: with increasing exposure to sibling bullying, the odds of mental health problems in young adulthood increased. Together, this suggests a causal relationship between sibling bullying and subsequent mental health problems.

Balanced sibling relationships

Just as in relationships between friends, it is normal to have occasional conflict and disagreement between siblings. There is some evidence that small amounts of sibling conflict and their resolution may even have some beneficial effects on child development. Balanced sibling relationships, in which children experience both conflict and support, have been associated with the development of better social-emotional skills, including perspective taking, and the ability to understand and talk about emotions^{8, 79-81}. Links have also been found with peer relationship quality, whereby having a balanced sibling relationship, comprising equal amounts of conflict and support/warmth, promotes greater social competence and can lead to better quality friendships with peers⁸². Indeed, occasional conflict in non-dominant sibling relationships has been reported to predict less peer victimisation, which may be explained by children acquiring and practicing conflict management skills at home, and transferring these to the school environment^{81, 83}. While it is clear that sibling bullying increases the risk of behavioural and mental health problems, occasional conflict, as part of a balanced, supportive and involved sibling relationship, provides opportunities for constructive conflict resolutions that can also have some positive benefits on children's emotional and social development⁸.

Sibling bullying being “near normative” does not mean it is not harmful

Considering the accumulating evidence of how widespread sibling bullying is and its adverse effects, it is surprising that there is still so little research on it. Some suggest that this can be traced to the general discounting of the frequency and seriousness by those individuals who most aptly could intervene at an early stage. “The age old adage “Kids will be kids” seems to have led to a pervasive belief that aggression and bullying between brothers and sisters is a rite-of passage and thus likely rarely investigated” (p.341)⁷. For example, while the act of being hit or shoved off a chair in the office would lead to alarm and possible police

involvement if done by a stranger, the same act may just attract a “come on, stop it now” by some parents at home³³. Why do we assume that if it is done by a stranger it is harmful but if it is perpetrated repeatedly by a sibling it has no ill effects? Why is there a belief that because it is so frequent it does not need any intervention? Let us consider other frequent conditions where nobody doubts that they require prevention and treatment. The lifetime risk of any fracture has been found to be 53.2% by the age of 50 years among women, and 20.7% at the same age among men⁸⁴. It is frequent and nearly normative to fracture a bone but nobody suggests just because it is frequent it can be left untreated and does no harm! The scars of sibling bullying can include physical injury which is often under reported and recorded⁷ but many of the scars are also psychological.

In reaction to a press release and report of our prospective sibling bullying study⁴⁷, the BBC News received so many emails and letters from the public reporting on their experiences of sibling bullying and how it has affected their life that they ran a Magazine story using reader's experiences of sibling bullying (see Box 3 for an example).

Box 3: BBC News Magazine story: Sibling bullying: ‘I wished I hadn’t been born’

<http://www.bbc.co.uk/news/magazine-24867267>

Kathy, UK: I was bullied by my older brother throughout my childhood. He was eight years older and put a lot of energy into bullying. He drew scary pictures on the wall near my bed when I was three years old. He used a soldering iron to write a horrible message - "you are a fat pig" - on a school pencil case my Mum made for me. At age 11 I remember wishing that I hadn't been born.

I stopped speaking to him at home for two years. My parents did very little to stop it.

Christmas was always ruined by it. I was also bullied at school but it wasn't as bad as the

bullying at home. I suffered from depression for many years and have experienced workplace bullying and domestic violence. I know it is all connected to my childhood.

Interventions

There are no interventions so far that have been tailored to treat or prevent sibling bullying specifically. However, a number of intervention programmes have been developed which focus on improving sibling relationship quality by fostering socio-emotional competencies, emotion regulation abilities, and interpersonal skills, as well as offering parental guidance on how to intervene and mediate disputes or conflicts between their children.

These general sibling interventions have reported positive effects on both parents and their children and the quality of sibling relationships (see table 5). They integrate many aspects of behavioural and communication interventions, ranging from reinforcing positive communication and behavioural modelling, to the use of video-clips guiding parents and children to understand and find solutions for conflicts. Parents are often perceived as the “co-therapists” of how to manage and moderate fights and conflicts⁸⁵. Considering the consistent finding of parenting being related to sibling bullying (reviewed above), teaching evidence-based effective mediation strategies for parents, encouraging children to vocalise and seek out conflict resolutions, to become more aware of their siblings perspectives, reflect on their feelings, control emotions and impulses and identify common ground⁸⁶ may be promising for developing intervention packages dealing with sibling bullying. Although some of these principles are part of interventions, they have not been sufficiently evaluated as yet. An alternative approach is to improve the wellbeing of the victims of sibling maltreatment and reduce negative emotional consequences by strengthening their family relationships and

enhancing their self-esteem by assertiveness training and cognitive restructuring rather than the focusing on the sibling relationships per se⁸⁷.

Table 5 here

Furthermore, clinical treatment approaches using case examples or small evaluation studies have been considered for maltreated children placed in foster homes⁹² or children who have experienced sibling abuse^{93, 94}. One such programme, the Promoting Sibling Bonds (PSB)⁹² used for maltreated children may provide an innovative integrated intervention model for children bullied by siblings in regular families. PSB integrates emotion regulation, social learning, family systems approaches as well as parental mediation to deal with sibling conflict.

Considering how widespread the problem of sibling bullying is in all types of families, the use of social media and healthy game approaches (e.g. via the internet) that can reach all families may be considered in future prevention or intervention programmes, both for siblings and their parents.

Future Research

The research evidence on sibling bullying, its precursors and consequences, is still weak with just one, as far as we know, prospective study on the consequences of sibling bullying. This needs to be strengthened, and requires funding bodies to hear the voices of those who have been affected by sibling bullying. Firstly, as shown here, there is enough evidence to warrant further investigation of sibling bullying, its precursors and consequences. Secondly, all evidence so far comes from highly developed industrialised countries such as the USA, UK, Italy, Israel or Australia. There is a paucity of research in low and middle income countries and considering cultural differences in sibling relationships, studies among different cultures

is required. Thirdly, there is a need to investigate whether reduction of sibling bullying can lead to reduced peer bullying and reduced mental health consequences of children. This requires the development of prevention and intervention programmes specifically against sibling bullying and their evaluation.

Conclusions

Sibling bullying is widespread with up to 40% being targets of sibling aggression every week or several times a week⁴⁷. Sibling bullying, just like peer bullying⁶³, is not a problem explained by poverty, poor parent education or single parenting, but is related to parenting quality in all socio-economic strata¹. Sibling bullying also increases the risk of being involved in peer bullying, with sibling victims more often the target of peer bullying, and sibling bullies more often bullies or bully-victims at school. Sibling bullying is associated with concurrent emotional problems and distress and with diagnoses of depression and increased self-harm in early adulthood. Current evidence suggests that those who are both bullied at home and at school have highly increased emotional problems, likely because they have no safe place and thus no respite from bullying. Where investigated, there is a suggestion that early sibling aggression and bullying is a precursor of adverse relationships with peers⁷⁵. Thus, if one wants to prevent sibling bullying and peer bullying, intervention has to start at home.

TAKE HOME MESSAGE.

While most sibling relationships may involve some rivalry and conflict between siblings, when the conflict results in direct physical or indirect psychological aggression that is repeated with the intent to harm (bullying), then it requires firm and fair intervention by

parents or caretakers. Indeed, conflict needs to be solved in an amenable way before it becomes sibling bullying and there is a need for general prevention and early intervention trials and their evaluation. Clinicians should ask routinely about sibling bullying.

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Table 1: Summary of studies describing prevalence of sibling bullying

Authors	Country	Sample	Age(years)	Measures	Prevalence	Types of Sibling Bullying
Duncan (1999) ³⁵	USA	Total N: 375 178 Females 194 Males With siblings: 336 (89.6%)	Range: 12-14 M = 13.4	Adapted Peer Relations Questionnaire (Rigby & Slee, 1993) ⁴¹	<i>Victims:</i> 3% were victimised pretty often or very often <i>Bullies:</i> 14.6% bullied their siblings pretty often or very often <i>Bully-Victims:</i> 28.6% both bullied and were victimised by their siblings pretty often or very often	<i>Victims (incl Bully-Victims):</i> Picked on/called names: 49.1% Hit and pushed around: 22% Beaten up: 8.1% <i>Bullies (incl Bully-Victims):</i> Called names: 41.6% Picked on: 30% Hit, pushed around: 24.4% Beat up: 11.2%
Wolke & Samara (2004) ²	Israel	Total N: 921 473 Female 448 Male 449 Jewish 472 Arabic With siblings: 898 (97.5%)	Range: 12-15 M = 13.7 SD = 0.9	Adapted Bullying Questionnaire (Olweus, 1991) ⁴³ ; (Wolke et al. 2000) ⁴⁴	<i>Victims:</i> 16.9% were victimized at least once a week or more often in the last 6 months	<i>Victims:</i> Verbal only: 6.6% Physical and Verbal: 5.4% Physical only: 3.3%
Finkelhor et al. (2006) ⁵	USA	Total N: 2030 50% Male 76% White	Range: 2-7	Juvenile Victimization Questionnaire (Hamby et al, 2004) ⁴⁵	<i>Victims:</i> 35% had been hit or attacked by a sibling in the past year. Of these, 40% were chronically victimized (more than 4 attacks in a year)	
Button & Gealt (2010) ⁴³	USA	Total N: 8122 3704 Male	Range: 12-18	Measure derived by authors to	<i>Victims:</i> 42% were victimised within the last month	<i>Victims:</i> Verbal: 31.3% Shoving, pushing: 32.5%

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		4343 Female 64.7% White		assess types of sibling aggression		Punching, kicking: 17.9% Threats: 12.4% Weapons: 2.9%
Wolke & Skew (2011) ⁴⁴	UK	Total N: 2163 1078 Female 1085 Male	Range: 10-15 Median: 12.5	Sibling Bullying Questionnaire (Wolke & Samara, 2004) ²	<p><i>Victims:</i> 16% were victimised by siblings quite a lot or a lot during the last 6 months</p> <p><i>Bullies:</i> 4.5% bullied their siblings quite a lot or a lot in the last six months</p> <p><i>Bully-Victims:</i> 33.6% were both victimised and had bullied their siblings quite a lot or a lot over the last six months</p>	<p><i>Victims:</i> Physical: 30.8% Verbal: 29.5% Teasing: 25.4% Stealing: 17.6%</p> <p><i>Bullies:</i> Physical: 22.5% Verbal: 21.8% Teasing: 21.0% Stealing: 10.1%</p>
Radford et al. (2013) ⁴⁵	UK	Total N: 6196 2160 parents (for 0-10 year olds) 2275 children (11-17) 1761 young adults (18-24) 51.6% Female	Range: 0-24	Modified version of the Juvenile Victimization Questionnaire (Hamby et al, 2004) ⁴⁵	<p><i>Victims:</i> In their lifetime, victimization by siblings was reported by:</p> <ul style="list-style-type: none"> • 28.4% of 0-10 year olds • 31.8% of 11-17 year olds • 25.2% of 18-24 year olds 	
Skinner & Kowalski (2013) ⁴⁶	USA	Total N: 54 24 Male 29 Female	M = 19.15 SD = 1.94	Adapted Olweus Bullying Questionnaire (Olweus, 1991) ⁴³	<p><i>Victims:</i> 78% were victimized once or more during childhood</p> <ul style="list-style-type: none"> • 13% 2-3 times per month • 17% once a week 	<p><i>Victims:</i> Verbal: 83% Physical: 69% Exclusion: 66%</p> <p><i>Bullies:</i></p>

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					<ul style="list-style-type: none"> 15% several times per week <p><i>Bullies:</i> 85% had ever bullied their sibling during childhood</p> <ul style="list-style-type: none"> 26% 2-3 times per month 11% once a week 13% several times per week 	Verbal: 91% Physical: 72% Exclusion: 61%
Tucker, Finkelhor, Shattuck & Turner (2013) ³⁰	USA	Total N: 1705 51% Male 63% White	Range: 0-17	Adapted from the Juvenile Victimization Questionnaire (Hamby et al, 2004) ⁴⁵	<i>Victims:</i> 37.6% experienced at least one incident of victimisation by siblings in last year	<i>Victims:</i> Physical: 32.3% Property based: 9.8% Psychological: 2.7%
Bowes et al. (2014) ⁴⁷	UK	Total N: 6928 Females: 3692 Males: 3236	Range: 11-15 M = 12.1 SD = 9.5	Adapted Bullying Questionnaire (Olweus, 1991) ⁴³ ; (Wolke et al. 2000) ⁴⁴	<i>Victims:</i> 47.4% were victimised in the last 6 months 30.3% were regularly victimised (2-3 times per month or more often)	
Tippett & Wolke (2014) ¹	UK	Total N: 4237 49.3% Male	Range: 10-15 M = 12.52	Sibling Bullying Questionnaire (Wolke & Samara, 2004) ²	<i>Victims:</i> 45.8% were victimised quite a lot or a lot during the last 6 months <i>Bullies:</i> 36.5% perpetrated bullying quite a lot or a lot during last 6 months	<i>Victims:</i> Physical: 28.1% Verbal: 26.5% Teasing: 23.5% Stealing: 17.1% <i>Bullies:</i> Physical: 20.4% Verbal: 20.3%

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					<i>Bully-Victims:</i> Significant correlations ($r=0.32-0.72$, $p<0.001$) were observed between all forms of victimisation and perpetration indicating many children were sibling bully-victims	Teasing: 19.6% Stealing: 9.9%
Tucker, Finkelhor, Turner & Shattuck (2014) ⁴⁸	USA	Total N: 1726 51% Male 58% White	Range: 0-17	Adapted from the Juvenile Victimization Questionnaire (Hamby et al, 2004) ⁴⁵	<i>Victims:</i> 47% of children experienced victimisation by siblings within the past year	
Tanrikulu & Campbell (2015) ⁴⁹	Australia	Total N: 455 262 Female 177 Male	Range: 10-18	Adapted from the Traditional Bullying and Cyberbullying Questionnaire (Campbell et al, 2012) ⁵⁴	<i>Bullies:</i> 13.6% had bullied their siblings in the past year <i>Bully-Victims:</i> 25.4% had bullied and been victimised by their siblings in the past year	<i>Bullies:</i> Traditional: 12.5% Cyber: 0.4% Both: 0.7% <i>Bully-Victims:</i> Traditional: 19.1% Cyber: 0% Both: 6.3%

Table 2: Summary of studies describing associations between family factors and sibling bullying

Authors	Country	Sample	Age (years)	Family Factors	Significant Associations
Hardy (2001) ⁵⁸	USA	Total N: 203 52 Males 151 Females 74.9% White	Range: 17-48 M = 21.21 SD = 5.43	<i>Structural:</i> Family constellation Number of siblings <i>Adult/caretaker behaviour:</i> Family cohesion Family stress	<i>Structural:</i> No association was found with rates sibling aggression <i>Adult/caretaker behaviour:</i> Experience of family stress was associated with both sibling victimisation ($F_{(1;202)}=18.73$; $p<0.001$) and perpetration ($F_{(1;202)}=4.79$; $p<0.05$)
Updegraff et al (2005) ⁵⁹	USA	Total N: 185 sibling pairs Older sibling: 99 Male 89 Female Younger sibling: 94 Male 94 Female	Older sibling: M = 15.95 SD = 0.72 Younger sibling: M = 13.47 SD = 1.02	<i>Adult/caretaker behaviour:</i> Parental warmth Parental involvement Differential treatment	<i>Adult/caretaker behaviour:</i> Higher rates of relational aggression between siblings were associated with: <ul style="list-style-type: none"> • Less maternal warmth ($\gamma=-1.35$, $SE=0.35$, $p<0.001$) • Less paternal warmth ($\gamma=-1.21$, $SE=0.31$, $p<0.001$) • Less paternal involvement ($\gamma=-5.16$, $SE=2.43$, $p<0.05$) Younger siblings reported less relational aggression when they felt older siblings were not treated differently (in relation to parental warmth): <ul style="list-style-type: none"> • Maternal warmth: $F_{(2,179)} = 5.08$, $p<0.01$ • Paternal warmth: $F_{(2,179)} = 6.75$, $p<0.01$
Yu & Gamble (2008) ⁶⁰	USA	Total N: 433 families (mothers and older/younger sibling dyads)	Younger child M = 11.6 SD = 1.8 Older child M = 14.3	<i>Adult/caretaker behaviour:</i> Family cohesion Differential treatment Maternal psychological control	<i>Adult/caretaker behaviour:</i> Negative and less cohesive family environments predicted greater aggression between siblings: <ul style="list-style-type: none"> • Overt aggression: $b= -0.20$, $SE= 0.05$, $p<0.001$

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			SD = 2.1		<ul style="list-style-type: none"> Relational aggression: $b = -0.41$, $SE = 0.07$, $p < 0.001$ <p>Maternal psychological control was also associated with greater sibling aggression:</p> <ul style="list-style-type: none"> Overt aggression: $b = 0.14$, $SE = 0.03$, $p < 0.001$ Relational aggression: $b = 0.11$, $SE = 0.03$, $p < 0.01$
Eriksen & Jensen (2009) ⁶	USA	Total N: 994 parents	Range: 0-17	<p><i>Structural:</i> Biological or adopted/step child Parental divorce/separation Percentage of male children Time in house/neighbourhood Years married/together</p> <p><i>Socioeconomic:</i> Parental employment Parental education Family income Financial concerns</p> <p><i>Adult/caretaker behaviour:</i> Household equality Partner violence Parent-to-child violence Parental temperament Marital satisfaction Use of physical punishment</p>	<p><i>Structural:</i> Experience of less severe sibling violence (defined as hitting and minor injurious forms of physical contact) was associated with:</p> <ul style="list-style-type: none"> More male children ($b = 0.13$, $p < 0.01$) Less time lived in house ($b = -0.11$, $p < 0.05$) Fewer years married ($b = -0.16$, $p < 0.001$) <p><i>Socioeconomic:</i> Higher rates of sibling violence were found in households with lower family incomes ($b = -0.12$, $p < 0.01$)</p> <p><i>Adult/caretaker behaviour:</i> Characteristics which increased the likelihood of sibling violence included:</p> <ul style="list-style-type: none"> More parent-to-child violence ($b = 0.28$, $p < 0.001$) Wife loses temper more easily ($b = 0.14$, $p < 0.01$)
Button & Gealt (2010) ⁴³	USA	Total N: 8122 3704 Male 4343 Female	Range: 12-18	<p><i>Adult/caretaker behaviour:</i> Child Maltreatment Domestic violence</p>	<p><i>Adult/caretaker behaviour:</i> Greater likelihood of sibling victimisation was associated with higher levels of:</p> <ul style="list-style-type: none"> Child maltreatment ($OR = 4.01$, $p < 0.05$) Domestic violence ($OR = 2.06$, $p < 0.05$)

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		64.7% White			
Menesini, Camodeca & Nocentini (2010) ⁵⁵	Italy	Total N: 195 98 Males 97 Females	Range: 10-12	<i>Structural:</i> Age of siblings Sex of siblings	<i>Structural:</i> Having male siblings was associated with more bullying perpetration ($F_{(1;165)}=5.14$; $p<0.05$; $\eta^2=0.03$) and victimisation ($F_{(1;158)}=14.26$; $p<0.001$; $\eta^2=0.09$). Children with older siblings were more often victimised ($F_{(1;158)}=13.81$; $p<0.001$; $\eta^2=0.08$). A sex X age interaction was found, with males more often bullying younger siblings, while females bullied older siblings ($F_{(1;165)}=5.18$; $p<0.05$; $\eta^2=0.03$).
Miller et al. (2012) ⁶¹	USA	Total N: 150 (Mother-child dyads)	Range: 3-5.5	<i>Adult/caretaker behaviour:</i> Intimate partner violence Adult-to-child aggression Violent TV viewing Maternal depression	<i>Adult/caretaker behaviour:</i> Greater rates of sibling aggression were associated with: <ul style="list-style-type: none"> Maternal depression ($\beta=0.23$; $p<0.01$) Watching more violent TV ($\beta=0.30$; $p<0.01$)
Radford et al. (2013) ⁴⁵	UK	Total N: 6196 2160 parents (for 0-10 year olds) 2275 children (11-17) 1761 young adults (18-24) 51.6% Female	Range: 0-24	<i>Adult/caretaker behaviour:</i> Parental maltreatment	<i>Adult/caretaker behaviour:</i> Any experience of maltreatment by a parent or guardian was associated with an increased risk of victimisation by siblings for all age groups: <ul style="list-style-type: none"> Under 11: OR=1.26, $p<0.05$ 11-17: OR=1.56, $p<0.001$ 18-24: OR=1.77, $p<0.001$
Tucker, Finkelhor, Shattuck & Turner	USA	Total N: 1705 51% Male	Range: 0-17	<i>Structural:</i> Sex of siblings Age of siblings Sibling relative age	<i>Structural:</i> Higher rates of sibling victimisation were reported in male-male sibling pairs ($\chi^2=11.30$, $df=3$, $p<0.05$).

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(2013) ³⁰		63% White		<i>Socioeconomic:</i> Parental education	<p>Less victimisation was found among siblings with a large age gap (of 5 or more years) when compared to those only 1 year apart ($z=-1.99$)</p> <p><i>Socioeconomic:</i> Living with parents who had any level of college education increased the risk of sibling victimisation (compared to parents who attended only high school or less; $z=2.39$)</p>
Bowes et al (2014) ⁴⁷	UK	Total N: 6928 Females: 3692 Males: 3236	Range: 11-15 M = 12.1 SD = 9.5	<p><i>Structural:</i> Birth order Parental divorce/separation Number of children Gender of siblings</p> <p><i>Socioeconomic:</i> Social class Maternal education</p> <p><i>Adult/caretaker behaviour:</i> Child maltreatment Domestic violence Maternal depression</p>	<p><i>Structural:</i> Greater rates of sibling victimisation were associated with:</p> <ul style="list-style-type: none"> • Being the younger child ($p<0.001$) • Having more than 3 children ($p<0.001$) • Having an older brother ($p<0.001$) <p><i>Socioeconomic:</i> Slightly more sibling victimisation was observed among low social class families ($p=0.05$)</p> <p><i>Adult/caretaker behaviour:</i> Sibling victims experienced greater:</p> <ul style="list-style-type: none"> • Domestic violence ($p<0.001$) • Maltreatment by an adult ($p<0.001$) • Maternal depression ($p<0.001$)
Tippett & Wolke (2014) ¹	UK	Total N: 4237 49.3% Male	Range: 10-15 M = 12.52	<p><i>Structural:</i> Number of siblings Sex of siblings Birth order Parental divorce/separation</p> <p><i>Socioeconomic:</i> Parental qualification Household income</p>	<p><i>Structural:</i> Greater rates of victimisation and perpetration of sibling and aggression were associated with:</p> <ul style="list-style-type: none"> • Having more than one sibling ($\beta=0.10$, $p<0.001$) • Having all male siblings (for only having sisters $\beta=-0.05$, $p<0.05$) • Being the eldest sibling ($\beta=0.06$, $p<0.05$)

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				<p>Poverty Deprivation Financial Stress</p> <p><i>Adult/caretaker behaviour:</i> Parent-child relationships Parenting behaviour</p>	<p><i>Socioeconomic:</i> Experience of sibling aggression as both a victim and perpetrator was associated with:</p> <ul style="list-style-type: none"> Moderate to high parental education (for university or higher $\beta=0.06$, $p<0.05$) Greater financial stress $\beta=0.04$, $p<0.05$ <p><i>Adult/caretaker behaviour:</i> Characteristics which predicted greater sibling aggression included: Poor parent-child relationships ($\beta=0.21$, $p<0.001$) Harsh parenting behaviour ($\beta=0.18$, $p<0.001$)</p>
Tucker, Finkelhor, Turner & Shattuck (2014) ⁴⁸	USA	<p>Total N: 1726</p> <p>51% Male</p> <p>58% White</p>	Range: 0-17	<p><i>Structural:</i> Biological/single/step family</p> <p><i>Socioeconomic:</i> Parental education</p> <p><i>Adult/caretaker behaviour:</i> Parental warmth Parental supervision Inconsistent/hostile parenting Exposure to family violence Parental conflict</p>	<p><i>Structural:</i> Children in stepfamilies experienced more sibling victimisation overall (OR=1.96, $p<0.01$), while children in single parent families reported more severe victimisation (OR=2.50, $p<0.01$).</p> <p><i>Socioeconomic:</i> Higher parental education predicted more sibling victimisation (OR=1.56; $p<0.001$ for any college education vs none)</p> <p><i>Adult/caretaker behaviour:</i> More victimisation was associated with:</p> <ul style="list-style-type: none"> Parental inconsistency/hostility (OR=1.15, $p<0.001$) Less parental supervision (OR=0.72, $p<0.05$) Witnessing family violence (OR=1.60, $p<0.05$)

Table 3. Summary of studies of the association between sibling and school bullying

Authors	Country	Sample	Age (years)	Sibling Bullying (SB)	Peer Bullying (PB)	Sibling to Peer Bullying association
Duncan (1999) ³⁵	USA	Total N: 375 Females: 178 Males: 194 With siblings 336 (89.6%)	M: 13.4	Total N: 336 None: 186 (55.4%) Victim: 10 (3%) Bully: 49 (14.6%) Bully/victim: 91 (28.6%) Classification: Pretty often/ very often	Total N: 373 None: 207 (55.5%) Victim: 60 (16.1%) Bully: 72 (19.3%) Bully/victim: 34 (9.1%) Classification: Pretty often/ very often	60% of peer bully/victims reported being bullied by their brothers or sisters. The majority of peer/bully victims (76.7%) and peer bullies (56.5%) reported they bully their siblings Less than half of the peer victims (38.2%) and peer not involved (32.1%) reported bullying their siblings (No significance tests done)
Wolke & Samara (2004) ²	Israel	Total N: 921 Females: 473 Males: 448 Jews: 449 Arabs: 472 With siblings: 898 (97.5%)	M: 13.7 SD: 0.9	Total N: 898 Victim: 152 (16.9%) • Physical only: 3.3% • Verbal only: 6.6% • Both: 5.4% Classifications: Every week/several times a week	Total N: 921 Victim: 145 (15.8%) Bully/bully-victim: 120 (13.1%) Classifications: Every week/several times a week	SB victims: 152 children that were victims at home, 77 (50.7%) were also victims at school, in contrast to only 95 of 769 non-victims at school (12.4%; odds ratio: 7.3; 95% CI: 4.9-10.6). The study did not ask about SB bullying perpetration

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Menesini, Camodeca and Nocentini 2010) ⁵⁵	Italy	Total N: 195 Females: 97 Males: 98 (selected from N:562. All had siblings \pm 4 years of age)	10-12 years	No report on prevalence	No report of prevalence	The correlations between the victimization and bullying scales were: SB victim – PB victim .32 (M); .44 (F) PB bully .24 (M); .39 (F) SB bully – PB bully .50 (M); .27 (F) PB victim .04 (M); .41 (F) There were generally stronger relationships with the same role for males SB victimization and SB bullying were highly correlated $r=.69$ indicating most were both perpetrators and victims
Tippett & Wolke (2014) ¹	UK	N: 4899 Final sample: 4237 (with siblings; 87%)	10-15 years	Total N: 4237 Victimisation: 45.8% Perpetration: 36.5% Classification: Quite a lot or a lot during last 6 months	Total: 3906 Victims: 416 (10.7%) Bullies: 98 (2.5%) Bully-victims: 34 (0.9%) Classification: Quite a lot or a lot in last 6 months (Data not reported)	Homotypic association between roles in SB and PB SB victims: OR 1.69 PB victims SB bullies: 2.63 PB bullies 3.44 PB bully/victims
Tucker et al. (2014) ⁴⁸	USA	N: 3059 (with at least 1 sibling <18)	3-17 years; split in	<u>Victimisation:</u> <i>Children</i> By sibling: 15%	<u>Victimisation:</u> <i>Children</i> By peer: 12%	Sibling victimisation predicting peer victimization (logistic regression):

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		years) 51% male 58% white	two groups for analysis 3-9 years (N: 1536) 10-17 (N: 1523)	By sibling and peer: 33% <i>Adolescents</i> By sibling: 14% By sibling and peer: 15% Classification: Any in last year	By peer and sibling: 33% <i>Adolescents</i> By peer: 22% By sibling and peer: 15% Classification: Any in last year	Childhood: OR 1.41 95% CI(1.11-1.80) Adolescence: OR 1.88 95% CI (1.47-2.42) (controlled for a range of social factors, child maltreatment, witnessing community and family violence)
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Table 4. Sibling bullying and behaviour and emotional problems in childhood to early adulthood

Authors	Country	Sample	Age	Mental Health Instrument	Associations with Behaviour or Emotional Problems																								
Duncan (1999) ³⁵	USA	Total N: 375 Females: 178 Males: 194 With siblings 336 (89.6%)	Mean: 13.4 years (7-8 graders)	Multi-score Depression Inventory for Children (MDIC) Children's Loneliness Questionnaire (CLQ)	As most siblings involved in any bullying were bully/victims, all subgroups collapsed into siblings involved in Bullying (N: 150) <ul style="list-style-type: none">• had highly raised scores in overall depression (MDIC).• higher loneliness scores (CLQ)• a significant sibling involvement by peer involvement interaction was found:<ul style="list-style-type: none">– those who were bully-victims at school and involved in bullying at home had the highest level of psychopathology– those not involved at home or at school had the lowest psychopathology and loneliness																								
Wolke & Samara (2004) ²	Israel	Total N: 921 Females: 473 Males: 448 Jews: 449 Arabs: 472 With siblings: 898 (97.5%) Median Number of siblings: 3	Mean: 13.7 years SD: 0.9 years (7-9 graders)	Strength and Difficulties Questionnaire (SDQ)	<ul style="list-style-type: none">• SDQ factor analysed and standardized for sample. Scales: Total Problems, Hyperactivity/Conduct problems defined borderline/clinical range as >80th percentile.• analyzed close-response relationship of sibling bullying and SDQ scores<ul style="list-style-type: none">a) Severity of victimisation: None, physical <u>or</u> verbal, both.b) Across contexts: neither, home or at school, both <table><tr><td>Severity:</td><td>None</td><td>Physical</td><td>Both</td></tr><tr><td></td><td></td><td></td><td>or Verbal</td></tr></table> <table><tr><td>SDQ Borderline/ Clinical</td><td></td><td></td><td></td></tr></table> <table><tr><td>Total Difficulties</td><td></td><td></td><td></td></tr><tr><td></td><td>16%</td><td>31%</td><td>57%</td></tr></table> <table><tr><td>Hyperactivity Conduct Problems</td><td></td><td></td><td></td></tr></table>	Severity:	None	Physical	Both				or Verbal	SDQ Borderline/ Clinical				Total Difficulties					16%	31%	57%	Hyperactivity Conduct Problems			
Severity:	None	Physical	Both																										
			or Verbal																										
SDQ Borderline/ Clinical																													
Total Difficulties																													
	16%	31%	57%																										
Hyperactivity Conduct Problems																													

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Authors	Country	Sample	Age	Mental Health Instrument	Associations with Behaviour or Emotional Problems
					<div> <div>13%34%56%</div> <div> <div>Cross Context</div> <div>NoneSchool or homeBoth</div> </div> <div>SDQ Borderline/ Clinical</div> <div>Total Difficulties</div> <div>16%24%46%</div> <div>Hyperactivity Conduct Problems</div> <div>12%22%52%</div> </div>
Wolke & Skew (2011) ⁴⁴	UK	Representative sample from Household Panel N: 2163 1872 (87%) had siblings both biological parents: 57% one biological	Median: 12.5 years Range 10-15 years	Strength and Difficulties Scale (SDQ) Overall Unhappiness Scale	Relationship between sibling bullying roles and SDQ Total Difficulties clinical range (>90 th percentile) (adjusted for school bullying) Bully: Adj. OR: 2.1 (0.9, 5.0) ns Bully/victim: Adj. OR: 3.2 (2.2, 4.7) Victim: Adj. OR: 1.7 (0.9, 3.0) ns Relationship between bullying victimisation (victims, bully/victims) home and/or school and SDQ Total Difficulties (clinical range) or Unhappiness

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Authors	Country	Sample	Age	Mental Health Instrument	Associations with Behaviour or Emotional Problems
		parent: 29% step-parent: 13% no biological parent: 2% biological siblings: 87% half sibling: 10% step-sibling: 3% oldest: 40% middle/Co-twin: 23% youngest: 38%			<div>SDQ (clinical range) Unhappiness</div> <div>Sibling <u>or</u> Adj. OR: 2.7 (1.8, 4.1) Adj. OR: 2.2 (1.5, 3.1) School</div> <div>Sibling <u>and</u> Adj. OR: 14.1 (8.4, 23.5) Adj. OR: 10.5 (6.6, 16.7) School</div> <div>(adjusted for age of adolescents (10-12; 13-15 years), sex, family type (2 categories: natural parents; other), highest parental qualification and family income (in quintiles)</div>
Radford et al. (2013) ⁴⁵	UK	50.000 households contacted (64% response rate households with children/young people) a) 2160 parents b) 2275 young people and their parents c) 1761 young people	2 months to 10 years	Trauma Symptom Checklist (versions for young children, children and adults)	<ul style="list-style-type: none"> Sibling victimization had significant but overall low association with reported trauma scores in the young age but not in adolescents Peer victimization had consistent and strong associations with trauma scores in multivariate models (controlling for other forms of maltreatment and poly-victimization). These exceeded those for the second best predictor, maltreatment by parent of guardian

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Authors	Country	Sample	Age	Mental Health Instrument	Associations with Behaviour or Emotional Problems															
			11-17 years; 18 - 24 years																	
Tucker, Finkelhor, Turner & Shattuck (2013) ⁷⁸	USA	National Children's Survey of Exposure to Violence Total N: 3599 51% Male 63% White	Two age groups: 0-9 years (parent report) 10-17 years (self-report)	Trauma Symptom Checklist for Children (version for young children (parents); version for older children (self-report)) Total scores were standardized (M: 0; SD: 1)	Mean Mental Health Scores of children and adolescents who did and did not experience Physical assault, property damage or psychological aggression by a sibling ^a <table><tr><td></td><td>Yes</td><td>NO</td></tr><tr><td>Physical assault with no weapon of injury</td><td>0.21</td><td>0.01</td></tr><tr><td>Physical assault with weapon of injury</td><td>0.47</td><td>0.07</td></tr><tr><td>Property</td><td>0.29</td><td>0.06</td></tr><tr><td>Psychological</td><td>0.49</td><td>0.07</td></tr></table> ^a higher mental scores indicate more distress; adjusted for parent education level, ethnicity, language, child gender and all nonsibling victimization by others (parents, strangers, internet) and witnessing family and community violence		Yes	NO	Physical assault with no weapon of injury	0.21	0.01	Physical assault with weapon of injury	0.47	0.07	Property	0.29	0.06	Psychological	0.49	0.07
	Yes	NO																		
Physical assault with no weapon of injury	0.21	0.01																		
Physical assault with weapon of injury	0.47	0.07																		
Property	0.29	0.06																		
Psychological	0.49	0.07																		
Bowes et al. (2014) ⁴⁷	UK	Longitudinal Study Total N: 6928	Sibling bullying: 12 years	Clinical Interview Schedule-Revised (CIS-R)	The results indicate a significant linear trend with increased odds of depression disorder and self-harm at 18 years with increasing severity of sibling victimisation at 12 years.															

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Authors	Country	Sample	Age	Mental Health Instrument	Associations with Behaviour or Emotional Problems
		Females: 3692 Males: 3236	Mental Health outcomes at 18 years	ICD-10 diagnoses of any depression; any anxiety disorder; self-harm	Those being bullied by their siblings several times a week had: Depression: OR 1.85 (1.11-3.09) Self-harm: OR 2.26 (1.40-3.66) (adjusted for a wide range pre-existing psychiatric problems, family factors and peer victimisation at 8 years)

¹ please see the original articles for references instruments used in studies

Table 5. Overview of intervention programmes to improve sibling relationships

Study	N	Intervention	Subjects	Duration and Frequency	Control Group	Training Techniques Utilized	Results
Kramer & Radley (1997) ⁸⁸ USA	42	Fun with Brothers and Sisters	4-6 year old children with siblings under 30 months	4 weekly 40min sessions on campus; 1 30min final session at home	Group discussions, books, and videotapes	Social skill training via instruction, modelling, rehearsal, performance feedback & generalization training.	<p><i>Mother Reports:</i> Less rivalry: $F_{(1,39)}=5.93$, $p<0.05$ More warmth: $F_{(1,39)}=8.10$, $p<0.01$</p> <p><i>Father Reports:</i> Less Status/Power differential over time: $F_{(1,39)}=3.28$, $p<.06$ Less rivalry/competition: $F_{(1,39)}=5.57$, $p<0.05$</p> <p>Children who were rated as getting along better were more likely to display taught social skills i.e. children rated by mothers as displaying more warmth: Increased perspective-taking ($r=0.47$, $p<0.05$) and increased initiation of sibling play ($r=0.37$, $p<0.10$).</p> <p>Intervention rated as helpful by 70% vs. 30% in control.</p>

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Smith & Ross (2007) ⁸⁶	48	Parental Mediation Training	Sibling pairs in the age range of 5-10 years	1 session lasting 1.5 hours involving parents only	Using conflict checklist to record home conflicts	The four stages of mediation process were taught; use of positive communication skills were taught; videotape of mother performing mediation was shown & information handouts on mediation were provided; using conflict checklist	<p><i>Parent Reports:</i> Improvement in their children's conflict tactics compared to control ($t(23) = 5.07, p < 0.01, \eta^2 = 0.53$). Children complained more, but also performed every positive behaviour more often than control ($F(12,35) = 3.43, p < 0.01, \eta^2 = 0.54$). Conflict in mediation group were more likely than expected to be resolved with compromise and reconciliations, ($X^2(3, 236) = 53.65, p < 0.01, V = 0.48$)</p> <p>Children in mediation group more likely to resolve conflicts vs. parents more likely to resolve in control ($X^2(2, 237) = 55.94, p < 0.01, V = 0.49$)</p> <p>Children in mediation talked more about negotiation and identified more issues ($F(11,36) = 2.39, p < 0.05, \eta^2 = 0.42$).</p> <p><i>Home Conflict Interview</i> Children in mediation more concordantly identified sibling's perspective $F(1,46) = 6.82, p < 0.05, \eta^2 = 0.13$).</p> <p><i>Negotiation Interview</i> Children in mediation more concordantly identified sibling's perspective $F(1,46) = 11.22, p < 0.01, \eta^2 = 0.20$).</p>
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Kennedy & Kramer (2008) ⁸⁹ USA	95	More Fun with Sisters and Brothers	Sibling pairs in the age range of 4-8 years	4 weekly 1hr sessions in lab playroom; 1 final session at home	Pre- and post-test; MFWSB intervention provided after experiment	Emotional/social competencies training via modelling, role-play, performance feedback & coaching, transfer of training. Parents observed and received guidelines	<p><i>Parent Reports:</i> Increased warmth ($F_{(1;88)}=5.63$; $p<0.05$; $\eta^2=0.39$) Decreased agonism ($F_{(1;88)}=10.99$; $p<0.001$; $\eta^2=0.48$) Less rivalry/competition ($F_{(1;88)}=5.42$; $p<0.05$; $\eta^2=0.30$).</p> <p><i>Observed:</i> Increased warmth & more involved positive interactions ($F_{(1;91)}=3.57$; $p<0.05$; $\eta^2=0.47$)</p> <p>Down-regulation by parents decreased for both elder born ($F_{(1;76)}=11.87$; $p<0.001$) and later born siblings ($F_{(1;76)}=9.49$; $p<0.01$)</p>
Feinberg, Sakuma et al. (2013) ⁹⁰ USA	256	Siblings are Special (Feasibility)	Sibling dyads with 5 th grader and younger sibling in 2 nd -4 th grade	12 weekly 1.5hr after school sessions; 3 2.5hr family-night sessions	Received popular parenting book on avoiding sibling rivalry	Fostering interpersonal skills & parents' involvement in sibling relationship via active games, written exercises, role-playing & discussions.	<p>High engagement; average attendance rate was 88%. Group Leaders (GL) on average rated programme usefulness above scale midpoint (based on 1-5 rating scale).</p> <p>88 % mothers & 81% fathers rated at least one (out of 6) tool as "somewhat" useful. Fidelity ratings by GLs' & observers were high.</p>
Feinberg, Solmeyer et al. (2013) ⁹¹ USA	348	Siblings are Special	Sibling dyads with 5 th grader and younger sibling in 2 nd -4 th grade	12 weekly 1.5hr after school sessions; 3 2.5hr family-night sessions	Received popular book on parenting siblings	Fostering interpersonal skills & parents' involvement in sibling relationship via active games, written exercises, role-playing &	<p><i>Mothers:</i> More fair-play ($B=0.15$, $SE=0.06$, $p<0.05$, $R^2=0.34$), Less internalizing problems ($B=-0.55$, $SE=0.22$, $p<0.05$, $R^2=0.31$),</p> <p><i>Mothers & Fathers:</i></p>

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			grade			discussions.	<p>More self-control ($B=0.12$, $SE=0.06$, $p<0.05$, $R^2=0.24$ and $B=0.14$, $SE=0.07$, $p<0.05$, $R^2=0.29$ respectively);</p> <p>More parental non-involvement ($B=0.19$, $SE=0.09$, $p<0.05$, $R^2=0.27$ and $B=0.19$, $SE=0.09$, $p<0.05$, $R^2=0.29$ respectively)</p> <p><i>Teachers:</i></p> <p>More social competence ($B=0.22$, $SE=0.08$, $p<0.01$, $R^2=0.32$)</p> <p>Better academic performance ($B=0.08$, $SE=0.04$, $p<0.05$, $R^2=0.2$)</p> <p><i>Observers:</i></p> <p>More sibling positivity ($B=0.28$, $SE=0.13$, $p<0.05$, $R^2=0.32$).</p>
Osarenren & Ajaero (2013) ⁸⁷	180	Cognitive Restructuring & Assertiveness Training	Students from three public co-educational junior secondary schools	5 treatment session spread over five weeks each lasting 1 hour	Students were given a career talk.	<p><i>Cognitive Restructuring</i></p> <p>Taught that lack of self-worth is caused by their negative thoughts; cognitive restructuring package to help modify and substitute logical interpretation for self-denigrating thoughts</p> <p><i>Assertiveness Training</i></p> <p>A range of different</p>	<p>Cognitive restructuring group (CR) had higher improvements in family relations vs control ($t=5.5$, $df118$)</p> <p>CR had higher self-esteem than controls ($t=3.44$, $df118$, $p<0.05$).</p> <p>Assertiveness training had higher self-esteem than controls ($t=2.55$, $df118$, $p<0.05$).</p>

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						assertive skills were taught and retrained by making students practice.	
Pickering & Sanders (2015) ⁸⁵	100	Managing and Fighting Aggression	Parents of 3-to-10 year-old children experiencing elevated levels of sibling conflict	One 2 hour discussion group session made up to 8-12 parents	Families will continue to engage using their usual care strategies; After 6-month follow-up session families were offered participation in same intervention.	Identifying and listing problems the parents currently face & common reasons for sibling conflict; parent traps and how to avoid them; tracking children's process using behaviour-tracking charts; checklist for managing aggression; diaries of quiet time and time out; specific sibling conflict managing techniques; discussing potential barriers	<i>Hypothesized Outcomes (not yet evaluated)</i> Reduced rates of sibling conflict; lower rates of ineffective/coercive parenting strategies; improved child behavioural & emotional adjustment; improved parental confidence & competence