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# **The Socio-Ecological Context of Peer Bullying: Correlates and Consequences**

By

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## **Declaration**

This thesis presents work carried out by myself and does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university. To the best of my knowledge it does not contain any materials previously published or written by another person except where due reference is made in the text; and all substantive contributions by others to the work presented, including jointly authored publications, are clearly acknowledged. Contributions to the five research papers are as follows:

### **Study 1 (Chapter 8): Published in the American Journal of Public Health**

#### *Contributions:*

- Dieter Wolke – planning, supervision of analysis, revisions
- Holly Brook – analysis (abstract screening)
- Tanya Lereya – revisions

#### *Reference:*

Tippett, N., & Wolke, D. (2014). Socioeconomic status and bullying: A meta-analysis. *American Journal of Public Health*, 104(6), e48-e59. doi: 10.2105/AJPH.2014.301960

### **Study 2 (Chapter 9): Published in Aggressive Behavior**

#### *Contributions:*

- Dieter Wolke – planning, revisions

#### *Reference:*

Tippett, N., & Wolke, D. (2014). Aggression between siblings: Associations with the home environment and peer bullying. *Aggressive Behavior*, Early View. doi: 10.1002/ab.21557

**Study 3 (Chapter 10): Published in the Journal of Adolescence**

*Contributions:*

- Dieter Wolke – planning, revisions
- Lucinda Platt – revisions

*Reference:*

Tippett, N., Wolke, D., & Platt, L. (2013). Ethnicity and bullying involvement in a national UK youth sample. *Journal of Adolescence*, 36(4), 639-649. doi: 10.1016/j.adolescence.2013.03.013

**Study 4 (Chapter 11): Under review at the Journal of School Psychology**

*Contributions:*

- Dieter Wolke – planning, revisions

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*Contributions:*

- Dieter Wolke – planning, revisions
- Tanya Lereya – revisions

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## **Abstract**

Bullying is a widespread public health problem. While its prevalence, key correlates and major health outcomes have been well researched, important gaps or controversies remain. In particular, the association between bullying and both socioeconomic status and ethnicity remains unclear. Furthermore, other areas are under-researched, such as sibling aggression and its relationship to peer bullying. Finally, while there is evidence of the adverse effects of bullying on mental health, there is still uncertainty whether any experience of being bullied, or only sustained, chronic victimisation, will lead to adverse consequences. Do those who escape bullying fare better?

This thesis comprises five studies. Study 1, a meta-analysis, explored the relationship between bullying and socioeconomic status, finding victims and bully-victims, but not bullies, more often came from low socioeconomic backgrounds. Study 2 examined sibling aggression, identifying a strong homotypic association with roles taken in school bullying. Study 3 explored ethnic differences in bullying, finding ethnic minority children were not more likely to be victims, but in some cases were more often bullies. Study 4 identified individual, social and sociodemographic correlates of school bullying. Distinct profiles were observed for each bullying role. Finally, Study 5 examined the timing of bullying in relation to individual and social outcomes. Stable and concurrent victimisation was associated with more negative outcomes, while escaping bullying reduced the adverse consequences.

The findings are considered in relation to ecological systems theory. Distant environmental factors, such as socioeconomic status, were only weakly associated with school bullying, while more immediate socio-ecological influences, including sibling relationships and individual characteristics, predicted victim, bully and bully-victim roles. Further research should focus on the association with sibling aggression, and identify characteristics which can explain why some children escape being bullied, thereby limiting the adverse consequences. The findings have implications for interventions, which should take account of children's home environments.

## **Structure of Thesis**

Chapter 1 provides a general background to bullying, detailing the origins of research on school bullying, and addressing key areas, including definition and measurement, types of behaviour, prevalence, and age or sex differences.

Chapter 2 presents ecological systems theory, which is used as an overarching framework to guide the study. Socio-ecological factors from each layer of the model which show an association with school bullying are identified.

Chapters 3, 4 and 5 provide a review of literature on school bullying in relation to three areas: household and family correlates, individual characteristics, and outcomes associated with each role.

Chapter 6 outlines the research questions that guided the five studies included in this thesis.

Chapter 7 establishes the methodological processes underlying the research, outlining the relevant methods and measures used in each of the studies.

Chapters 8, 9, 10, 11 and 12 consist of the five studies presented in this thesis, respectively.

Chapter 13 summarises the five studies, and provides a brief discussion integrating the key findings in relation to ecological systems theory. Strengths and limitations of the research are discussed, and implications and suggestions for future research identified.

# Chapter 1      General Introduction to Bullying

---

School bullying is an international concern. Approximately a third of all children will be involved in bullying, as victims, bullies, or bully-victims, during their school career. Over the past thirty years, researchers have increasingly investigated the issue, yet questions still remain concerning its causes, characteristics, and consequences. This thesis will examine school bullying in relation to two areas: (1) the individual and sociodemographic correlates and risk factors for being victimised or perpetrating bullying, and (2) the effect of stability and recency of bullying on the outcomes for victims. To provide an introduction to the topic, this chapter presents an overview of research on school bullying, detailing the origins of the research programme, and discussing the definition, types, and prevalence of bullying at school. Controversial findings and gaps in current knowledge are identified and discussed in subsequent chapters (Chapters 2-5).

## 1.1    Origins of Research on School Bullying

Research on school bullying has its origins in Scandinavia, where it was first identified as a form of group violence between children (Olweus, 2010). Using a term previously applied to animal behaviour, this type of violence was described as *mobbing*, and involved a group of children collectively attacking an individual child, typically, one who was regarded as deviant by the rest of their peer group (Heinemann, 1973). The term was brought to light by Swedish researcher, Dan

Olweus, who acknowledged the importance of studying this behaviour, but suggested that it may be better described as *bullying* for a number of reasons (Olweus, 2010). Firstly, mobbing referred only to group-led violence; it did not include one-on-one incidents. Secondly, taking an all-versus-one perspective focused disproportionate blame on the victim by suggesting that they were in some way responsible for others actions. Furthermore, this stance treated aggressors as a collective, homogenous group, neglecting the importance of individual differences between the group members. Thirdly, mobbing could be used to describe one-time incidents, which although damaging, may only have a limited impact on the victim. Olweus was concerned with the effects of prolonged and systematic forms of aggression conducted by either individuals or groups against one victim, thus the term mobbing did not accurately reflect the true nature of these behaviours. Subsequently, Olweus adopted the term bullying (Olweus, 2010), and published the first scientific study on the subject, which used teacher and peer nominations to identify victim and bully roles among a sample of 900 teenage boys (Olweus, 1978). This study, combined with the later implementation of a national anti-bullying initiative by the Norwegian Ministry of Education in 1983 (see Olweus, 1993; Olweus, 1994), established the first assessment of school bullying, spawning an international research agenda which continues to grow after more than thirty years (Smith, 2011).

## **1.2 Defining Bullying**

From a research perspective, bullying is viewed as a subtype of aggressive behaviour (Espelage, Bosworth, & Simon, 2000; Smith et al., 2002); in some cases it has been described as a proactive or unprovoked form of aggression (Dodge & Coie, 1987). Bullying can be distinguished from more general aggressive behaviour on the basis of three defining characteristics. Firstly, bullying involves aggressive behaviour that

is used intentionally, with the aim of causing harm, either physical or mental, to the victim (Olweus, 1999). Secondly, bullying is a repeated act which occurs regularly over a period of time (Olweus, 1999). Singular or infrequent incidents, such as a one-time fight, do not constitute acts of bullying. Thirdly, bullying must involve an imbalance of power, either real or perceived, between the victim and the perpetrator, such that the victim feels helpless and unable to defend themselves (Smith & Sharp, 2002). In this sense, power can refer to a range of characteristics, including size, strength, mental prowess, popularity, or social status (Swearer, Espelage, & Napolitano, 2011). These last two concepts, namely repetition and an imbalance of power are particularly important, as they enable bullying to be distinguished from more general acts of aggressive behaviour, such as an isolated fight between individuals of equal strength or power. On the basis of these three characteristics, bullying can be defined as aggressive and intentional behaviour which is carried out by a group or an individual, repeatedly and over time, against a victim who cannot easily defend him or herself (Olweus, 1999; Smith et al., 2002). Additionally, such behaviour must include an imbalance of power or strength between the victim and bully(s), thus bullying can be seen as a systematic abuse of power (Smith & Sharp, 2002).

### **1.3 Types of Bullying**

Bullying can be carried out in a variety of ways, some of which are easily identified, while others are more difficult to observe. Initial research on bullying tended to focus only on physical and verbal types of aggression (Monks & Coyne, 2011), however later studies suggested that bullying could also be carried out using more covert, non-observable methods, such as through rumour spreading or social exclusion (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995, 1996). As a

result, three main types of bullying have been identified: physical, verbal and relational. Physical bullying includes acts such as hitting, kicking, and pushing, but also taking belongings, or damaging personal property. Verbal bullying refers to behaviours such as name calling, teasing, taunting, or making threats. As both of these behaviours involve face-to-face contact, they are often collectively described as direct bullying (Wolke et al., 2000). In contrast, relational bullying involves forms of aggression that are used to manipulate peer relationships or friendships, with the aim of inflicting harm on others (Crick & Grotpeter, 1995). Typical acts include ignoring someone, excluding someone from social activities, or spreading stories or rumours about a person (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995). In some cases relational bullying is described as indirect bullying, however, while some acts are indirect, for example spreading rumours behind a person's back, others may be carried out directly, such as by telling someone face-to-face that they are not allowed to join in. Thus, there is a certain degree of overlap between direct and indirect forms of bullying (Monks & Coyne, 2011; Wolke et al., 2000).

More recently, a new type of bullying has been identified which is linked to the increasing and widespread uptake of communication technologies among children (Smith et al., 2008). Cyberbullying is any type of bullying which is carried out using electronic communication technologies, such as computers, tablets, or mobile phones (Smith et al., 2008). Cyberbullying can take place through a variety of social media, including phone calls, text or picture/video messages, websites, chat-rooms, email, and instant messaging. Although some consider cyberbullying to be a separate and distinct type of bullying, a strong overlap between cyberbullying and traditional forms of bullying (bullying which is not carried out electronically), has been reported (Beran & Li, 2008; Dehue, Bolman, & Völlink, 2008; Smith et al., 2008). The

majority of children who are victimised online are also victims of school bullying, and most cyberbullies are either traditional bullies or bully-victims (Dehue et al., 2012; Olweus, 2012; Smith et al., 2008); thus, cyberbullying appears to be a modern extension of more traditional bullying behaviour (Olweus, 2012).

## **1.4 Bullying Research Methods**

Studies on school bullying differ greatly in their methodology, and both quantitative and qualitative techniques have been used to understand what bullying is, why it occurs, and what impact it can have. One of the most common means of assessing school bullying is through anonymous, self-report questionnaires, such as the Olweus Bully/Victim Questionnaire (Olweus, 2010; Smith, 2011). While questionnaires offer a reliable way of obtaining a large sample in little time, they can be prone to bias, and are dependent on the reading and comprehension skills of the respondent (Wolke & Stanford, 1999). An alternative to this is to use peer nominations, whereby children are asked which of their peers are involved in bullying. This technique has proved reliable (Rigby & Slee, 1991; Smith, 2011), and is useful for identifying group interactions and processes (Salmivalli et al., 1996), but can be time consuming (Wolke & Stanford, 1999). Teacher and parent reports, whereby parents and teachers are asked whether their child or student is involved in bullying are also commonly used, particularly among younger children who may not be able to complete a questionnaire (Monks, Smith, & Swettenham, 2003). A less often used technique is naturalistic observation of bullying behaviours, whereby children's interactions are recorded and analysed (Craig, Pepler, & Atlas, 2000; Craig & Pepler, 1998). The findings are useful in understanding the true nature of bullying behaviour, for example, how incidents originate, participants' underlying motivations, and group processes, however, observations are very time consuming, and prone to researcher

bias, thus they are not as commonly used as other quantitative techniques (Smith, 2011; Wolke & Stanford, 1999).

## **1.5 Roles in Bullying**

How children behave in bullying situations tends to remain relatively stable over time, allowing for individual roles in the bullying process to be identified (Salmivalli, Lappalainen, & Lagerspetz, 1998). Central to acts of bullying is the dyadic relationship between the bully and the victim. Victims are those children that are the targets of bullying behaviour, while bullies are those that perpetrate acts of aggression against them (Olweus, 1994). A third main role has also been identified. Bully-victims are children that are both victims and perpetrators of bullying behaviour (Boulton & Smith, 1994; Olweus, 2010). In some cases they may also be referred to as aggressive or provocative victims (Batsche & Knoff, 1994; Olweus, 1978; Schwartz et al., 1997). Bully-victims differ from both bullies and victims in their behaviour (Nansel et al., 2001; Perren & Alsaker, 2006), and are linked with diverse outcomes in adolescence and adulthood (Arseneault et al., 2006; Wolke, Copeland, et al., 2013), thus they represent a distinct group in bullying (Haynie et al., 2001). Children who are not directly involved in bullying are most commonly referred to as neutrals or non-involved, and effectively act as a control group, against which victims, bullies and bully-victims can be compared. While these four roles form the basis of most research, studies on group processes have also identified a range of other roles children can play in bullying, including defenders, who actively help the victim and try to prevent the bully, assistants, who follow and support the bully, and reinforcers, who may not be actively involved, but provide passive support by acting as an audience (Salmivalli et al., 1996).

## **1.6 Prevalence of Bullying**

Large scale and nationally representative surveys of children in both the UK and US have indicated that up to one-third of children experience bullying on a regular basis, as either a victim, bully or bully-victim (Green, Collingwood, & Ross, 2010; Nansel et al., 2001). Prevalence rates differ greatly between studies, so it is difficult to give an exact estimate, however, Smith (2011) has suggested that that in most cases, around 5-20% of children are identified as victims, and 2-20% as bullies. No similar estimate is available for bully-victims due to a lack of comparable findings.

Prevalence rates differ greatly between studies for a number of reasons, including the use of different research methods (e.g. self vs peer vs other reports), variations in how bullying is defined and measured (e.g. direct and/or relational bullying, time frame of study, cut off point: any vs frequent bullying), and the characteristics of the sample itself. Rates of bullying are also affected by cross-cultural differences, as well as age and sex variations in both the frequency and type of bullying experienced. For example, using identical measures, a comparison of bullying across 28 countries found there were significant variations between countries in the prevalence of victimisation, ranging from a low of 5.1% among Swedish girls, to a high of 41.4% among Lithuanian boys (Due et al., 2005). As such, prevalence rates are somewhat reliant on the measures and sample used within each study (Smith, 2011).

## **1.7 Bullying and Age Differences**

Prevalence rates of school bullying tend to show a steady decline from childhood into adolescence (Craig et al., 2009; Olweus, 1993; Solberg & Olweus, 2003). More children report being victims or bully-victims at primary than at secondary school (Finkelhor et al., 2005; Nansel et al., 2001; Solberg, Olweus, & Endresen, 2007), and

this decrease has been attributed to older children developing better social skills and coping strategies, which enable them to deal more effectively with incidents of bullying (Smith, Madsen, & Moody, 1999). Although the number of children who bully others declines with age, this decrease is far less pronounced than found for victims and bully-victims. Rates of bullying perpetration reach their peak during early adolescence (Analitis et al., 2009; Nansel et al., 2001; Scheithauer et al., 2006), and it has been suggested that this may result from the tendency for bullies to target children who are younger, and therefore less able to defend themselves against bullying (Smith et al., 1999). The type of bullying can also differ according to age. Younger children more often use physical and verbal forms of bullying, but as they get older are more likely to be victimised or to bully others relationally (Smith et al., 1999).

## **1.8 Bullying and Sex Differences**

Initial research on school bullying suggested that males were more likely to be involved in bullying than females (Boulton & Underwood, 1992; O'Moore & Hillery, 1989; Whitney & Smith, 1993), however, many of these studies focused only on direct forms of bullying. When all forms of bullying are considered, sex differences become less clear. Overall, while boys are more likely to be both bullies and bully-victims (Haynie et al., 2001; Nansel et al., 2001; Scheithauer et al., 2006), they are only as likely, or slightly more likely than girls to be victimised (Analitis et al., 2009; Espelage, Mebane, & Swearer, 2004; Veenstra et al., 2005). This was confirmed in a meta-analysis by Cook et al. (2010), who found that bully and bully-victim roles were moderately associated with male gender, but only a weak relationship was observed for victimisation. Distinct differences have been found according to the type of bullying. Young males are more likely to use direct forms of

bullying (Wolke et al., 2001), and are more often physically or verbally bullied than females (Finkelhor et al., 2005; Nansel et al., 2001). In contrast, females are more likely to be victimised and to bully others relationally (Craig, 1998; Crick & Grotpeter, 1996; Nansel et al., 2001). Although these sex differences have been consistently reported among younger age groups, they tend to disappear by the time children reach adolescence (Analitis et al., 2009; Wolke et al., 2001).

## **1.9 Summary and Conclusions**

Bullying can be seen as a subset of aggressive behaviour which is characterised by harmful intent, repetition, and an imbalance of power between the victim and perpetrator(s). It can take many forms, including physical, verbal, and relational forms of aggression, but can also be carried out through online interactions. Children may be involved as victims, bullies, or bully-victims. Each role is associated with different risk factors or outcomes, some of which will be explored in subsequent chapters. Cross-national comparisons suggest that bullying is widespread, with up to a third of children being victimised or bullying others at any one time, however, rates may differ according to age or sex. More bullying is found in primary than secondary school, and both victimisation and perpetration decline with age. Furthermore, while males are slightly more likely to be bullies or bully-victims overall, females are as likely or in some cases more likely to be involved in relational forms of bullying.

## Chapter 2      Ecological Theory of Bullying

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The high prevalence of school bullying, coupled with the damaging impact it can have on an individual's health and wellbeing (Arseneault et al., 2006; Copeland et al., 2013; Schreier et al., 2009), suggests that bullying should be considered as a major public health concern (Srabstein & Merrick, 2013). Identifying factors which are associated with involvement in school bullying can help to explain why some children are bullied or bully others, and enables interventions to be targeted at those who are at greatest risk.

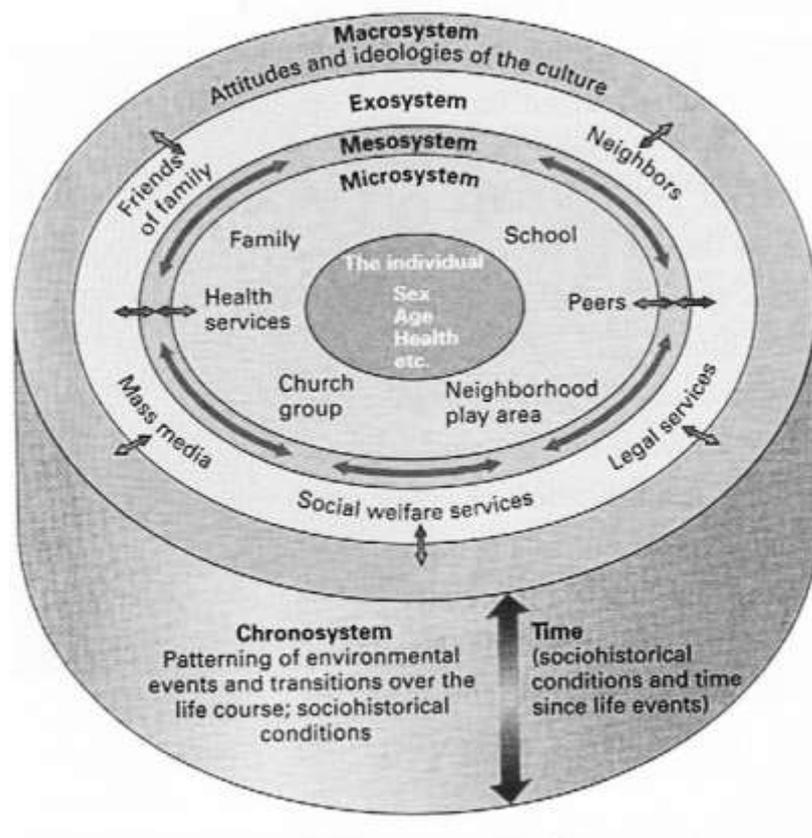
No one factor alone can explain why children become victims, bullies, or bully-victims; rather, it is likely that involvement in school bullying results from complex interactions between individual and environmental characteristics. Ecological systems theory offers an organisational tool through which this can be explored, identifying how individual traits can interact with aspects of the child's interpersonal and contextual environment to explain whether or not they are more likely to be involved in school bullying. This chapter presents an overview of ecological systems theory and discusses its application as a framework through which research on school bullying can be better understood and organised.

## 2.1 Ecological Systems Theory

Ecological systems theory is a frequently employed theoretical framework which explains human development as a function of the interaction between an individual and their environment. It is defined by Bronfenbrenner (1979) as:

The scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings and by the larger contexts in which the settings are embedded (p. 21).

Children's development has been linked with a wide range of individual, social and contextual factors. Using ecological systems theory, these factors can be arranged into a coherent model, which uses a person-in-context approach to explain how individual and environmental characteristics interact to influence a child's development. The model places the individual at the core, surrounded by a series of five nested layers, each of which represents a specific aspect of the child's interpersonal and contextual environment. Starting from the innermost, these layers are termed the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Each layer is represented as a concentric circle to illustrate the reciprocal connections and interactions between them (Figure 1).



**Figure 1** Ecological Theory of Development Model (Santrock, 2008)

At the centre of the model is the individual. This component incorporates a child's individual characteristics, including demographic factors, such as age, sex, or ethnicity, but also individual traits, such as personality or cognitive ability. The first layer surrounding the individual is the *microsystem*, which consists of the child's social interactions and experiences within their immediate environment. Interactions at this level will most commonly be with parents, siblings, peers, or teachers; thus microsystemic factors which may affect children's development include parenting behaviour, domestic violence, peer and sibling relationships, and interactions with teachers. The second layer is the *mesosystem*, which focuses on interrelations or interactions between microsystem components. As such, this layer provides links between children's immediate environments, for example how interactions between a parent and teacher can influence the child, or how relationships with their siblings

may affect their relationships with peers. Mesosystemic factors provide an indication of how well the child is supported across all levels of their immediate environment. The third layer is the *exosystem*, which includes wider social structures which can directly or indirectly impact on the child. Examples of this include governmental or school policies and regulations, neighbourhood characteristics, or socioeconomic situation. Although the child does not play an active role at this level, exosystemic influences can still have a direct influence upon them. For example, a family's socioeconomic status will have an impact on where the child lives, which school they attend, and what resources or social experiences are available to them. The fourth layer is the *macrosystem*, which incorporates the wider socio-cultural context affecting an individual, including political, ethnic, religious or other cultural beliefs or values (Bronfenbrenner 1979; 1977). Macrosystemic factors can be local, such as rates of community violence, or neighbourhood income setting, but also include wider societal characteristics, such as socioeconomic inequality, social disorganisation and individualistic or collectivistic cultural norms (Lee, 2011). The final layer in the model is the *chronosystem*, which focuses on the pattern and relationship of environmental systems over time (Bronfenbrenner, 2005). This layer incorporates the concept of change and development over time and may consist of events that an individual will experience throughout their life, including both direct experiences, such as parental divorce or losing a family member, but also wider events, such as governmental or societal transitions.

## **2.2 Ecological Systems Theory in Bullying Research**

A wide range of individual and environmental characteristics have been linked with involvement in school bullying, however, many studies fail to acknowledge the social context in which these associations are found. Situating the correlates and risk

factors for school bullying within the ecological systems framework provides a more coherent structure, allowing factors individually associated with school bullying to be explored as part of the wider socio-ecological context, and identifying how interactions between the individual and their environment can affect whether they bully others or are more often victimised. Although researchers have only recently begun to apply ecological theory to research on school bullying (Papatraianou, Levine, & West, 2014), associations have already been found across most levels of the ecological model.

As the central component in ecological theory, individual characteristics have a major influence on children's development, and accordingly, an extensive body of research has identified individual factors associated with school bullying, including age, sex, attitudes towards aggression, social skills, and conduct problems (Carney & Merrell, 2001; Hawker & Boulton, 2000; Nansel et al., 2001; Reijntjes et al., 2010). While some individual factors have been heavily researched and show conclusive links with roles in school bullying (for example age, sex, or social skills), others, such as ethnicity or self-esteem, have received less attention, or show inconsistent findings. Individual characteristics which are linked with school bullying, including demographic, behavioural, and psychological factors, will be discussed in depth in Chapter 4.

Outside of the individual, much of the research on bullying and children's environments has concerned microsystemic interactions. The microsystem is a key stage in influencing children's development, and interactions with peers and parents are considered to have a particularly strong impact (Bronfenbrenner, 1979; 1977). This is reflected in the research on school bullying, which has shown links between roles in bullying and parenting characteristics, including maltreatment, parenting

style, and relationships between children and their parents (Baldry & Farrington, 1998; Hong et al., 2012; Lereya, Samara, & Wolke, 2013; Shields & Cicchetti, 2001). Similarly, characteristics of peer relationships, including quantity and quality of friendships (Hodges, Malone, & Perry, 1997; Rigby, 2007; Wolke, Woods, & Samara, 2009), loneliness (Cook et al., 2010; Juvonen, Graham, & Schuster, 2003; Veenstra et al., 2005) and social isolation or peer rejection (Salmivalli et al., 1996; Warden & Mackinnon, 2003) are linked with roles in school bullying. Less attention has been placed on children's interactions with their siblings, however, there is some evidence that sibling relationships, and in particular, involvement in sibling bullying, is linked to bullying among peers (Duncan, 1999b; Wolke & Samara, 2004; Wolke & Skew, 2012). Chapter 3 focuses on gaps in the current literature by discussing the association between school bullying and children's relationships with their siblings and parents.

Moving outside of the child's immediate environment, some mesosystemic influences on bullying have been identified, particularly interactions between parents and teachers (Flouri & Buchanan, 2003; Lee, 2011), however, the findings are inconsistent, with some studies suggesting that a lack of parental involvement in a child's education is linked with greater rates of victimisation and bullying perpetration (Flouri & Buchanan, 2003; Ma, 2001), while others show no significant association (Barboza et al., 2009; Lee, 2011) Although other mesosystemic interactions may be important, such as those between parents and siblings, these have not yet been explored in relation to school bullying.

Exosystemic factors pertaining to the school and home environments have shown some association with bullying roles. School characteristics, particularly school climate and safety, have been linked with overall rates of bullying (Lee & Wong,

2009; Yoneyama & Rigby, 2006), and socioeconomic status has been identified as a key exosystemic factor within the home environment. Although this has been the focus for several studies, some find greater rates of victimisation and bullying perpetration among lower socioeconomic strata (Alikasifoglu et al., 2007; Jansen et al., 2011; Jansen et al., 2012; Wolke et al., 2001), while others have noted no difference (Garner & Hinton, 2010; Ma, 2001; Shetgiri, Lin, & Flores, 2012), therefore it is unclear whether bullying involvement differs across socioeconomic levels. Due to these inconsistent findings, the association between socioeconomic status and involvement in school bullying is discussed further in Chapter 3.

Fewer studies have identified links between the latter two layers of the model and bullying at school. At the macrosystemic level, cross-national or cross-cultural variations have been observed in rates of school bullying (Due et al., 2005; Due, Merlo, et al., 2009; Genta et al., 2011; Smith et al., 2002), and there is evidence that greater social inequality at both the school and country level is associated with more victimisation by peers (Due, Merlo, et al., 2009). Chronosystemic factors incorporate the concept of time, and as such, can refer to a wide range of influences. One recent factor which has arisen concerns the stability of bullying behaviour over time.

Children who experience stable, concurrent victimisation show poorer outcomes than those who were bullied for a short period of time (Bogart et al., 2014; Takizawa, Maughan, & Arseneault, 2014; Wolke, Copeland, et al., 2013); however, evidence of this effect is currently limited. The stability of bullying over time, in relation to both correlates and consequences, is discussed further in Chapter 5.

## **2.3 Summary and Conclusions**

Ecological systems theory is an organisational tool which places individual and environmental factors affecting human development into a layered model, with each layer representing a specific aspect of the child's social and cultural environment. Ecological theory offers a heuristic way to integrate knowledge of the correlates and risk factors for school bullying into a more coherent narrative, which can explain roles in school bullying as a function of the individual and their wider socio-ecological environment. At present, clear associations have been found between bullying and some individual or environmental characteristics, however other factors, such as ethnicity, sibling relationships, socioeconomic status, or the stability of bullying are less researched. Identifying individual and environmental factors linked with bullying, and understanding the interactions between them, is crucial in determining those who are at risk of being bullied or bullying others, and enables intervention efforts to be more effectively designed, targeted, and implemented. In the following chapters I will explore key individual and environmental characteristics which are linked with bullying involvement, and address gaps in current research which may help to better explain why some children are victimised or bully others at school.

## **Chapter 3      Household and Family Factors and Bullying**

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The family environment provides children with their first experience of social relationships, acting as a training ground in which children learn how to behave in social settings, develop their interpersonal skills, and understand what to expect from their relationships with others (Duncan, 2004). As such, the family environment has been linked with behavioural outcomes throughout childhood and adolescence, including how well children fare in peer relationships. A substantial body of literature has found that the family environment and household experiences of victims, bullies and bully-victims consistently differ from those found for children not involved in school bullying. This chapter will review the association between household and family characteristics and roles in school bullying. Four aspects of the home environment are considered: socioeconomic status, household characteristics, parenting, and sibling relationships.

### **3.1 Socioeconomic Status and Bullying**

Socioeconomic status is a broad construct which loosely relates to a family's income, parental education and occupational status. It has been linked with a range of outcomes throughout childhood and adolescence (Bradley & Corwyn, 2002). Low socioeconomic status is predictive of poor health (Aber et al., 1997; Chen, Matthews, & Boyce, 2002; Condliffe & Link, 2008; Goodman, 1999; Hanson & Chen, 2007),

low cognitive ability and academic achievement (Caro, McDonald, & Willms, 2009; Duncan, Brooks-Gunn, & Klebanov, 1994; Hackman & Farah, 2009; Kishiyama et al., 2009; Sackett et al., 2009; Sirin, 2005), greater socio-emotional problems, including mental health disorders (Miech et al., 1999; Wight, Botticello, & Aneshensel, 2006), and maladaptive social functioning (Dodge, Pettit, & Bates, 1994; Korenman, Miller, & Sjaastad, 1995; McLeod & Shanahan, 1993; Mistry et al., 2008; Schneiders et al., 2003). In particular, there are strong links with aggressive behaviour, including externalising behaviours (Amone-P'Olak et al., 2009; Dodge et al., 1994; Duncan et al., 1994; Scaramella et al., 2008) and conduct disorder (Lahey et al., 1995; Loeber et al., 2000; McLoyd, 1998; Murray & Farrington, 2010), suggesting that associations may also be found with involvement in school bullying.

In practice, socioeconomic status is an aggregate concept, comprising both resource-based (i.e. material and social resources) and prestige-based (i.e. individual's rank or status) indicators of socioeconomic position, which can be measured across societal levels (individual, household and neighbourhood), and at different periods in time (Krieger, Williams, & Moss, 1997). It can be assessed through individual measures, such as education, income, occupation, or deprivation, but also through composite measures, which combine or assign a weighting to different socioeconomic aspects to provide an overall index of socioeconomic level (Galobardes, Shaw, Lawlor, & Lynch, 2006; Galobardes, Shaw, Lawlor, Lynch, et al., 2006). There is no standard measure of socioeconomic status, rather indicators are used to measure specific aspects of socioeconomic stratification (Galobardes, Shaw, Lawlor, Lynch, et al., 2006). Accordingly, different measures of socioeconomic status may show varying effects, which can result from differing causal pathways, or through interactions with other social characteristics, such as sex or race (Braveman et al., 2005).

The relationship between socioeconomic status and roles in school bullying has been explored to some extent; however, the multi-faceted nature of socioeconomic status has meant that few studies use comparable measures of socioeconomic status, leading to conflicting or inconsistent findings. Currently, the literature suggests there is a link with peer victimisation, whereby children from low socioeconomic backgrounds are more likely to be a victim or bully-victim at school (Alikasifoglu et al., 2007; Due, Damsgaard, et al., 2009; Jansen et al., 2011; Kim et al., 2009).

According to the type of measure used, being a victim has been associated with poor parental education (Jansen et al., 2012; Lemstra et al., 2012; Nordhagen et al., 2005), low-level parental occupation (Lemstra et al., 2012), economic disadvantage (Bowes et al., 2009; Glew et al., 2005; Lumeng et al., 2010), low affluence (Alikasifoglu et al., 2007; Analitis et al., 2009; Due, Damsgaard, et al., 2009), and low overall socioeconomic status (using composite measures) (Due, Damsgaard, et al., 2009; Kim et al., 2009; Pereira et al., 2004). Similarly, the likelihood of being a bully-victim at school is associated with low overall socioeconomic status (Jansen et al., 2011; Kim et al., 2009), as well as greater disadvantage (Bowes et al., 2009), poor maternal education (Alikasifoglu et al., 2007), and maternal unemployment (Magklara et al., 2012). Although the majority of studies confirm these associations, others have found little or no relationship between socioeconomic status and either victim or bully-victim roles (Garner & Hinton, 2010; Ma, 2001; Veenstra et al., 2005). The type of bullying considered may matter, as victims of physical and relational bullying have been found more likely to come from families of low affluence, while victims of cyberbullying did not (Wang, Iannotti, & Nansel, 2009).

Fewer studies have explored the link between socioeconomic status and bullying others (as bully only), however, a similar pattern of findings have emerged. Some

have found that bullying perpetration is linked with low overall socioeconomic status (Jansen et al., 2011; Pereira et al., 2004; Wolke et al., 2001), and more specifically, greater economic disadvantage and poverty (Bowes et al., 2009; Glew et al., 2005) and poor parental education (Jansen et al., 2012); however, others have found no association between bullying others and measures of socioeconomic status (Ma, 2001; Shetgiri et al., 2012; Veenstra et al., 2005).

There are several reasons for the lack of consistent findings. Firstly, studies differ in their approach to measuring socioeconomic status; some use composite measures, combining multiple indicators such as parental education, wealth and occupation, while others concentrate on a single socioeconomic indicator, most often parental education, occupation or affluence. How bullying relates to socioeconomic status may differ according to which indicator is used, therefore it is important to consider the way in which socioeconomic status was measured, and how this may have influenced the result. Furthermore, while the majority of research indicates an association between bullying roles and low SES, the reported effect sizes vary greatly across studies, with some reporting a weak relationship (e.g. Alikasifoglu et al., 2007; Jansen et al., 2012) while others suggest moderate to strong associations (e.g. Bowes et al., 2009; Kim et al., 2009). These measurement issues prevent a definitive conclusion being drawn from current findings, therefore as yet, it is unclear whether roles in bullying are associated with individual socioeconomic measures, or indeed socioeconomic status more generally. Overall, the evidence tends to suggest that low socioeconomic status slightly increases the risk of involvement in school bullying and perhaps more so for victims or bully/victims.

### **3.2 Household Characteristics and Bullying**

Household characteristics encompass both structural and functional aspects of the home environment. Structural aspects include the size and make-up of one's family, such as the number of siblings or number of natural parents living at home, while functional aspects refer to interactions and experiences within the family, such as family cohesion and time spent with family members. Interactions with parents and siblings can be considered part of this, but they both show strong, independent associations with school bullying, and are therefore discussed separately in this chapter. Although findings are limited, there is some evidence that household characteristics can have a significant impact on children's development and functioning. Children living in single parent families are at risk of poor educational achievement (Amato, 2001; DeLeire & Kalil, 2002; Manning & Lamb, 2003) and display greater emotional, psychological and behavioural problems than those who live with both natural parents (Amato, 2001; Amato & Keith, 1991; Harland et al., 2002). Overall family size has also been linked with poor cognitive, academic and behavioural outcomes (Black, Devereux, & Salvanes, 2005; Blake, 1981; Yeung, Linver, & Brooks-Gunn, 2002), suggesting that, in terms of the number of children within a household, there is a trade-off between quantity and quality (Black et al., 2005; Fogelman, 1975; Hanushek, 1992). Low levels of family cohesion have been linked with a range of behavioural problems, including internalising/externalising behaviour (Lucia & Breslau, 2006; Richmond & Stocker, 2006), conduct disorder, and delinquency (Deković, Janssens, & Van As, 2003; Matherne & Thomas, 2001; Woolfenden, Williams, & Peat, 2001). Strong family cohesion mediates the risk of poor outcomes among children who have a large number of siblings, or live with

only one parent (Lansford et al., 2001; Taanila et al., 2002), and has been identified as a key area for intervention programmes (Woolfenden et al., 2001).

Despite the links with behavioural problems throughout childhood and adolescence, only a handful of studies have explored whether a similar association exists with school bullying. Overall, victimisation does not appear to be related to household characteristics. Although Spriggs et al. (2007) reported that victims were more likely to live in single parent families, other studies have found no association between victim roles and either family size (Bowers, Smith, & Binney, 1992; Espelage et al., 2000), or whether children lived with one or both parents (Holt, Kaufman Kantor, & Finkelhor, 2008). Examining the home environment of victims of bullying, Bowers et al. (1992) found pure victims experienced relatively good family cohesion and interaction, while bully-victims reported poorer levels of family cohesion, and were more likely to live with only one parent.

Bullying perpetration appears to be more strongly linked with household characteristics. Bullies are more likely to live in single parent families (Spriggs et al., 2007), particularly ones in which the father was absent (Bowers et al., 1992), however no relationship has been found with overall family size, suggesting that the number of siblings a child has is not related to whether they bully their peers (Espelage et al., 2000). Bullying perpetration has also been linked with a more dysfunctional home environment. Bullies report poorer family cohesion than victims and non-involved children (Bowers et al., 1992; Stevens, De Bourdeaudhuij, & Van Oost, 2002), and are less likely to spend time interacting with adults in their household (Espelage et al., 2000).

### **3.3 Parenting and Bullying**

There is substantial evidence to indicate that parenting characteristics have a significant and lasting impact on children's development. Dysfunctional and maladaptive parenting practices have been linked with poor academic achievement (Fan & Chen, 2001; Jeynes, 2007; Spera, 2005), worse physical and mental health (Borawski et al., 2003; Hussey, Chang, & Kotch, 2006; McLeod, Weisz, & Wood, 2007; McLeod, Wood, & Weisz, 2007; Wood et al., 2003), and a range of behavioural problems (Aunola & Nurmi, 2005; Connell & Goodman, 2002; Paolucci & Violato, 2004), including aggression (Chang et al., 2003; Stormshak et al., 2000) and delinquency (Griffin et al., 2000; Hoeve et al., 2009). Accordingly, there is a large volume of research similarly focused on the relationship between parenting and school bullying. The findings suggest that bullying involvement is linked with a range of parenting characteristics, including discipline or maltreatment (Chang et al., 2003; Hong et al., 2012; Shields & Cicchetti, 2001), parenting style (Baldry & Farrington, 1998, 2000), parent-child relationships (Bowers et al., 1992; Stevens et al., 2002), parental supervision (Espelage et al., 2000; Georgiou, 2008), and support (Desforges & Abouchaar, 2003; Zimmerman et al., 2005).

The association between bullying involvement and parenting characteristics differs markedly between roles. Victims of school bullying experience greater maltreatment at home, including the use of harsh punishment and abuse (Baldry, 2003; Lereya, Samara, et al., 2013; Schwartz et al., 1997; Shields & Cicchetti, 2001), and are more likely to have overprotective (Lereya, Samara, et al., 2013; Rigby, Slee, & Martin, 2007; Veenstra et al., 2005) or authoritarian parents (Baldry & Farrington, 1998), who place high demands on the child, and use punishment rather than positive reinforcement as a means of control (Baumrind, 1971).

Bully-victims share some of the same characteristics as victims. They are more likely to reside in harsh, punitive home environments (Baldry & Farrington, 1998; Schwartz et al., 1997; Stevens et al., 2002), and experience greater maltreatment and abuse (Lereya, Samara, et al., 2013). In addition, bully-victims report less parental involvement (Haynie et al., 2001; Lereya, Samara, et al., 2013), including a lack of supervision or monitoring (Baldry & Farrington, 1998; Marini et al., 2006), poor communication with parents (Alikasifoglu et al., 2007), and low parental warmth (Bowes et al., 2010). In contrast, parental characteristics such as good communication, warm and affectionate relationships, and adequate supervision have been found to be protective against the risk of being both a victim or bully-victim (Lereya, Samara, et al., 2013).

Bullying perpetration has been linked with a lack of parental involvement and greater maltreatment and abuse. Bullies tend to come from families where there is less parental involvement or supervision (Pepler et al., 2008; Smith & Myron-Wilson, 1998; Veenstra et al., 2005), as well as little warmth (Bowes et al., 2009) or support (Perren & Hornung, 2005). Furthermore, bullies report difficulties in communicating with their parents (Alikasifoglu et al., 2007), and are more often exposed to authoritarian parenting practices (Baldry & Farrington, 2000). In addition, bullies also experience harsh but infrequent discipline more often than children not involved in bullying (Carney & Merrell, 2001; Shields & Cicchetti, 2001).

### **3.4 Sibling Relationships and Bullying**

While much of the research attention has focused on parenting as an explanation for adolescent outcomes, the importance of sibling relationships on children's development and behaviour has been largely overlooked. Relationships with siblings

do appear to impact on how well children get on with their peers, independent of other family characteristics (Vespo, Pedersen, & Hay, 1995). Negative relationships, where there are high levels of violence or hostility between siblings, have been linked with behavioural and mental health problems in adolescence and adulthood (Bank, Patterson, & Reid, 1996; Dunn, Slomkowski, & Beardsall, 1994; Pike, Coldwell, & Dunn, 2005; Snyder, Bank, & Burraston, 2005), including problematic peer relationships (Duncan, 2004; Wolke & Skew, 2012), and anti-social or delinquent behaviour (Bank, Burraston, & Snyder, 2004; Compton et al., 2003). In contrast, positive sibling relationships, characterised by warmth and affection, can foster social adjustment, improving peer relationships and friendship quality, and reducing the likelihood of adolescent delinquency or anti-social behaviour (Sapouna & Wolke, 2013; Sherman, Lansford, & Volling, 2006; Yeh & Lempers, 2004).

Few studies have looked directly at the impact of sibling relationships on involvement in school bullying, and it is not yet clear how these two characteristics might relate. At first glance, it might be expected that children's behaviour with their siblings will closely resemble how they interact with their peers. Behaviour learnt from parents or siblings influences children's exchanges with peers (Ensor et al., 2010; Patterson, Dishion, & Bank, 1984), suggesting that those who have aggressive relationships with siblings are likely to also be aggressive with their peers, and therefore are more likely to be involved in bullying. Alternatively, peer relationships may be more positive than sibling relationships, as children are given the option to choose those peers with whom they form relationships. Peer relationships involve children from different families who may have different temperamental characteristics, interests, and talents, and who have differing experiences of social relationships and how to behave within them (Stocker & Dunn, 1990). As such,

when children interact with their peers, they may behave differently to how they do with siblings. Accordingly, there is evidence to show that children who experience aggressive sibling relationships are able to form positive relationships with their peers (Volling, Youngblade, & Belsky, 1997).

Although there is no research which considers the general quality of sibling relationships in relation to school bullying, a handful of studies have identified links between bullying among siblings, and involvement in school bullying. Overall, the findings suggest that the two forms of bullying are closely related (Wolke & Skew, 2012). Children who are bullied by their siblings are more likely to be bullied by their peers (Duncan, 1999b; Menesini, Camodeca, & Nocentini, 2010; Wolke & Samara, 2004; Wolke & Skew, 2012), while children who are bully-victims at school report being both victimised, but also bullying their siblings (Duncan, 1999b; Wolke & Skew, 2012). Similarly, children who bully their siblings, but are not victimised by them, are more often bullies at school (Duncan, 1999b; Menesini et al., 2010). While all of this research is cross-sectional, an experimental study among young children has found that aggression towards siblings is predictive of bullying of peers one year later within a laboratory setting a year (Ensor et al., 2010), suggesting that sibling bullying may predict later involvement in school bullying. Although parenting characteristics have been the focus of much research in this area, sibling relationships may prove equally important in understanding why children are victimised or bully others at school.

### **3.5 Summary and Conclusions**

Household and family characteristics appear to show some associations with school bullying, however, research in this area is far from complete. Much of the research

attention has focused on parenting as an explanation of bullying involvement, and negative parenting characteristics show moderate to strong associations with all roles in school bullying. Wider familial characteristics, including socioeconomic status and household structure have received less attention, and based on current findings, it is unclear whether these characteristics may increase the likelihood of children being bullied or bullying others at school. Similarly, the importance of sibling relationships has been largely overlooked, however, the limited findings available suggest that negative sibling interactions, and sibling bullying in particular, may be moderately-to-strongly related to roles in school bullying. Further research to identify how school bullying relates to family and household factors is required. Chapters 8 and 9 (Studies 1 & 2) address gaps in the current literature by focusing on the association between school bullying and both socioeconomic status, and sibling relationships.

## **Chapter 4      Individual Characteristics and Bullying**

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Individual characteristics encompass a range of psychological, behavioural and demographic traits which are unique to the individual. While some of these characteristics remain unchanged over the course of a lifetime, others can be environmentally patterned, changing according to an individual's life experiences. As the central component in Bronfenbrenner's ecological systems model, individual characteristics have garnered much of the research attention, and distinct differences have been observed among victims, bullies and bully-victims. This chapter will explore the association between school bullying and individual characteristics. Firstly, demographic characteristics associated with each bullying role will be reviewed. Secondly, the association between ethnicity and school bullying will be discussed in detail, due to the conflicting research findings. Finally, the relationship between behaviour, psychosocial characteristics, and roles in school bullying will be explored and controversial associations identified.

### **4.1 Demographic Characteristics**

Each role in school bullying has been linked with a unique set of individual characteristics, which can be used to identify those children who are already involved, or at risk of becoming involved in school bullying. Associations are discussed separately for each role in school bullying.

Historically, victims of school bullying have been painted as young, male, and in some way different from their peer group, be it physically, mentally, or behaviourally (Olweus, 1978). Although this remains true to some extent, over the course of the last two decades, more detailed associations between demographic characteristics and victimisation have been described. Among adolescents, rates of victimisation decline with age, such that younger children more often report being victims than older children (Finkelhor et al., 2005; Nansel et al., 2001). This decline in victimisation has been linked to adolescents' improved social skills and the development of more effective coping strategies as they age, enabling them to avoid bullying, or deal with incidents more effectively (Smith et al., 1999). Although some studies report that boys are more often victims of bullying than girls (Whitney & Smith, 1993), others have found no difference by sex (Analitis et al., 2009; Espelage et al., 2004; Scheithauer et al., 2006). A meta-analysis of research findings suggests that overall, males are only slightly more likely to be victims than females (Cook et al., 2010). Type of bullying may be important to consider, as boys more often report being victims of physical bullying (Finkelhor et al., 2005; Nansel et al., 2001), while girls are as likely or more likely to be bullied relationally (Craig, 1998; Crick & Grotpeter, 1996). Victimisation is also linked with appearance, as studies show that any individual characteristic which distinguishes a child from their peer group can increase the likelihood of being bullied. As such, characteristics including obesity, attractiveness, or physical disability are all linked with a greater likelihood of peer victimisation (Cappadocia, Weiss, & Pepler, 2012; Janssen et al., 2004; Mishna, 2003; Sweeting & West, 2001; Taylor et al., 2010; Twyman et al., 2010).

Although less research has identified demographic associations with bully-victim status, clear associations have emerged from research findings. The number of

children who report being bully-victims declines with age; fewer older adolescents are bully-victims compared to children or young adolescents (Solberg et al., 2007). Males are also more likely to be bully-victims than females (Haynie et al., 2001; Nansel et al., 2001; Scheithauer et al., 2006). A meta-analysis by Cook et al. (2010) found the bully-victim role was moderately associated with the male sex. As with victims, some associations have also been reported with physical characteristics. Compared with children who are only victimised, bully-victims have been found to be physically stronger (Haynie et al., 2001; Schwartz et al., 1997), which may explain why they choose to fight back against bullies. Children with some special educational needs, including attention deficit hyperactivity disorder, learning difficulties, and autism or Asperger's syndrome are also more likely to be bully-victims (Cappadocia et al., 2012; Mishna, 2003; Taylor et al., 2010; Twyman et al., 2010).

The overriding perception of bullies has been one of physically large, older males, who use their size and age as an advantage to victimise younger children. This fits into the definition of bullying, namely the imbalance of power, whereby bullies use their physical or mental prowess to overpower a weaker victim. The demographic characteristics associated with bullying perpetration tend to confirm this. Bullies are more often male, a finding confirmed cross-culturally (Haynie et al., 2001; Nansel et al., 2001; Scheithauer et al., 2006), and supported by meta-analyses (Cook et al., 2010). The number of children who bully others declines slightly with age. Rates of bullying perpetration reach their peak during early adolescence (Analitis et al., 2009; Nansel et al., 2001; Scheithauer et al., 2006), which may result from the tendency of bullies to single out children who are younger than themselves (Smith et al., 1999). Links with other personal characteristics have also been established. Bullies are

generally large in stature, and use their physical prowess to dominate smaller and weaker children (Felson, 1996). Some studies have found that children with special educational needs or disabilities, specifically attention deficit hyperactivity disorder and learning difficulties may more often bully others than children without special needs or disabilities (Mishna, 2003; Taylor et al., 2010; Twyman et al., 2010).

## **4.2 Ethnicity and Bullying**

Ethnicity is another key demographic factor that may contribute to exposure to peer victimisation; however, there is continuing debate over whether rates of bullying differ between ethnic groups. While there has been substantial discussion in both academic and policy literatures relating to the prevalence of racist bullying and stereotyping in schools (Abrams, 2010; Eslea & Mukhtar, 2000; House of Commons Education and Skills Committee, 2007), small sample studies in the UK which compared single or mixed ethnic minority groups to majority White children found no difference in the prevalence of bullying among ethnic groups (Durkin et al., 2012; Eslea & Mukhtar, 2000; Moran et al., 1993); although ethnic minority children are more likely to identify their race or culture as the reason for them being bullied, they appear no more likely than white majority children to be victimised or to bully others (Boulton, 1995; Monks, Ortega-Ruiz, & Rodríguez-Hidalgo, 2008).

Outside the UK, findings are more varied. Several European studies comparing immigrant and native-born children found immigrant children are more likely to report being bullies or victims (Fandrem, Strohmeier, & Roland, 2009; Verkuyten & Thijs, 2002; von Grunigen et al., 2010), although this appeared somewhat dependent on children's language competence (von Grunigen et al., 2010) or the ethnic mix of the school they attended (Verkuyten & Thijs, 2002). In contrast, other European

studies have found no difference in bullying between ethnic groups (Monks et al., 2008), or show native born children to bully others more often than immigrant children (Strohmeier, Spiel, & Gradinger, 2008).

More consistent findings have been reported in the United States, where large datasets have been used to compare rates of bullying among White, African American and Hispanic children. The results suggest African American children are less likely to be victimised than those from other ethnic groups (Hanish & Guerra, 2000; Sawyer, Bradshaw, & O'Brennan, 2008; Spriggs et al., 2007), however, children from ethnic minority groups appear more likely to participate in bullying others (Carlyle & Steinman, 2007; Nansel et al., 2001; Wang et al., 2009).

The consistency of the findings notably differs between Europe and the US, and this may result from use of differing sampling methods; research in the US mostly employs large-scale representative surveys, whereas European studies tend to rely on smaller classroom or school-based convenience samples (Durkin et al., 2012). In addition, the US represents a different context, with higher levels of overall group segregation than in the UK (Johnston, Wilson, & Burgess, 2004). Bullies and victims are therefore more likely to come from the same ethnic group, rather than bullying crossing ethnic divides.

Using the ecological systems model may provide a better understanding as to how ethnicity relates to bullying involvement. Where differing rates of bullying have been found between ethnic groups, this has been explained as a function of other environmental characteristics, such as variations in parental communication (Spriggs et al., 2007), discipline (Lansford et al., 2004), or supervision (Peeples & Loeber, 1994). As Chapter 3 illustrates, household factors, particularly parenting, are linked

with involvement in school bullying, and thus differences in parenting behaviours across ethnic groups may partly account for the variations in bullying involvement. Similarly, socioeconomic factors merit consideration, as ethnic minorities tend to experience greater poverty and deprivation than ethnic majorities (Platt, 2007).

Given that household characteristics can differ substantially between ethnic groups, the use of the ecological systems model in understanding school bullying may be an important consideration, as it helps to identify interactions between these environmental factors, and provides a framework to explain school bullying as a function of these interrelated personal and environmental characteristics.

### **4.3 Behaviour and Psychosocial Profile**

Much of the research examining individual factors associated with bullying behaviour has focused on the behavioural and psychosocial characteristics of children involved in school bullying. Each role is linked with a distinct set of characteristics, which are briefly discussed below.

Victims of school bullying exhibit a range of psychosocial problems (Fekkes et al., 2006; Forero et al., 1999; Gini & Pozzoli, 2009), including depression (Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Ivarsson et al., 2005; Nansel et al., 2001), anxiety (Craig, 1998; Slee, 1994; Swearer et al., 2001), and low self-esteem (Egan & Perry, 1998; O'Moore & Kirkham, 2001; Wild et al., 2004), which may lead to them being victimised by other children. In addition, their behaviour may distinguish them as a target to their peer groups, and explain why victims experience difficulties forming and maintaining peer relationships (Gifford-Smith & Brownell, 2003; Ladd, 1999; Perren & Alsaker, 2006), report having fewer friendships and poorer quality friendships than children not involved in bullying (Hodges et al., 1997; Rigby, 2007;

Wolke, Woods, et al., 2009), and are more likely to be rejected and isolated by their peers (Cook et al., 2010; Juvonen et al., 2003; Rigby, 2005; Veenstra et al., 2005). As a result victims often report being lonely at school (Mynard & Joseph, 1997; Salmivalli et al., 1996; Warden & Mackinnon, 2003). In contrast, good peer relationships have been identified as a key protective factor against victimisation. Children who have many friends, or even a handful of good quality relationships are at significantly less risk of being bullied at school (Bollmer et al., 2005; Boulton, Trueman, et al., 1999; Rigby, 2005).

Greater rates of victimisation have also been linked with wider behavioural problems, including emotional symptoms, such as stress or anxiety (Bond et al., 2001; Due et al., 2005; Gini & Pozzoli, 2009). While there is some evidence that victims of bullying are more likely to be hyperactive (Johnson et al., 2002; Smith et al., 2004; Wiener & Mak, 2009), and to display conduct problems (Gini, 2008), other studies have found no association with either of these behavioural characteristics (Juvonen et al., 2003; Kokkinos & Panayiotou, 2004; Toblin et al., 2005).

Bully-victims tend to display similar problems to victims in terms of their psychological and behavioural characteristics. They are commonly found to be more anxious and depressed than their peers (Arseneault et al., 2006; Swearer & Doll, 2001), and have the lowest self-esteem of all bullying roles (Egan & Perry, 1998; O'Moore & Kirkham, 2001; Wild et al., 2004). Bully-victims also display internalising behaviour and emotional symptoms (Kaltiala-Heino et al., 2000), scoring higher than all other bullying roles on psychosocial adjustment problems (Klomek et al., 2007). Furthermore, they are often isolated and rejected from their peer group; therefore they have few friends (Cook et al., 2010; Nansel et al., 2001; Veenstra et al., 2005). Bully-victims have been linked to a range of behavioural

problems, including conduct disorder and hyperactivity (Haynie et al., 2001; Mynard & Joseph, 1997; Perren & Alsaker, 2006; Toblin et al., 2005), but also display antisocial and aggressive behaviour towards their peers (Carney & Merrell, 2001; Griffin & Gross, 2004; Perren & Alsaker, 2006). Furthermore, bully-victims are more likely to engage in delinquent behaviour (Barker, Arseneault, et al., 2008; Perren & Hornung, 2005), and show greater levels of aggression during childhood years (Carney & Merrell, 2001; Griffin & Gross, 2004; Perren & Alsaker, 2006). They are also more likely to endorse aggressive beliefs, and express the view that violence is justified as a means of coping (Bentley & Li, 1996; Huesmann & Guerra, 1997; McConville & Cornell, 2003). While most children believe that bullying is wrong, bully-victims display the weakest anti-bullying attitudes within their peer group (Boulton, Bucci, & Hawker, 1999).

In contrast to victims and bully-victims, the links between bullying perpetration and behavioural and psychosocial characteristics are less clear. Although there is some evidence that bullies are less happy (Ivarsson et al., 2005; Junger-Tas & van Kesteren, 1999; Rigby & Slee, 1993) and have low self-esteem (Frisen, Jonsson, & Persson, 2007; Jankauskiene et al., 2008), other studies have found bullies perform as well as, or better than non-involved children on both of these measures (Gini, 2008; Rigby & Slee, 1991). Bullying perpetration is strongly linked to delinquent behaviour (Barker, Arseneault, et al., 2008; Perren & Hornung, 2005), and bullies display greater levels of aggression from a young age (Carney & Merrell, 2001; Griffin & Gross, 2004; Perren & Alsaker, 2006). Examining a range of individual and social risk factors for bullying perpetration, Farrington and Baldry (2010) found that anti-social and troublesome behaviour between the ages of 8-10 years most strongly predicted bullying perpetration at age 14. There is substantial evidence that

children who endorse aggressive beliefs are more likely to engage in peer aggression and traditional bullying (Bentley & Li, 1996; Huesmann & Guerra, 1997; McConville & Cornell, 2003), and in particular, positive attitudes towards aggression have been reported to predict pure bully roles (McConville & Cornell, 2003). Similarly Salmivalli and Voeten (2004) found that pro-bullying attitudes were able to moderately predict whether children perpetrated acts of traditional bullying.

Bullies also display a range of other behavioural problems, particularly conduct disorder (Barker, Arseneault, et al., 2008; Junger-Tas & van Kesteren, 1999; Perren & Hornung, 2005; Salmon et al., 2000; Wolke et al., 2000), and have been found more likely to engage in aggressive or antisocial behaviour against their peers (Barker, Arseneault, et al., 2008; Perren & Hornung, 2005). However, other studies report that bullies have relatively good peer relationship skills (Gini, 2008; Juvonen et al., 2003), are less likely to be rejected than victims or bully-victims (Veenstra et al., 2010), and are well-liked and held in high status by their classmates (Garandeau, Ahn, & Rodkin, 2011; Garandeau, Lee, & Salmivalli, 2014). Indeed, new long term research indicates that, after controlling for other family factors, bullies are socially and emotionally well-adjusted in adulthood (Copeland et al., 2013). Furthermore, being a bully may even reduce the risk of developing health problems as indicated by biomarkers (Copeland et al., 2014). While the links between individual characteristics and victim or bully-victim roles are relatively consistent, much less is known about bullies, and further research is required to identify which behavioural and psychosocial characteristics may increase the risk of children bullying others.

## **4.4 Summary and Conclusions**

Individual characteristics which are associated with involvement in school bullying have been intensively researched. While some demographic characteristics, such as age or sex show consistent associations across studies for victims, bullies and bully-victims, others are less clear. In particular, the relationship between ethnicity and bullying roles remains controversial, as findings differ markedly between studies. Chapter 10 (Study 3) aims to resolve this uncertainty by identifying the association between bullying and ethnicity among a nationally representative sample of UK adolescents. Further research is also needed to clarify the association between bullying roles and behavioural or psychosocial characteristics. Most studies have focused on victims, finding links with a range of behavioural, psychological and peer relationship problems. Similar associations have been reported for bully-victims; however, research on bullies is much less consistent, with some studies suggesting significant behavioural or psychological problems, while others suggest bullies are relatively well adjusted. Further research is required to clarify and confirm the exact nature and strength of these associations; therefore, Chapter 11 (Study 4) identifies behavioural and psychosocial correlates (in addition to wider household characteristics) which are associated with roles in school bullying.

## **Chapter 5      Outcomes and Stability/Recency of Bullying**

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The consequences that result from bullying are routinely documented in the media, with news reports illustrating the debilitating and occasionally life-altering impact that being bullied can have (e.g. Kotecha, 2014; Morris, 2014). Research on the effects of bullying has identified a variety of negative outcomes, which range from behavioural problems and psychological disorders, through to poor educational and occupational achievement. In some circumstances, being bullied can also lead to major health concerns, including self-harm and suicide. The consequences of bullying have been studied using a variety of methodologies, including cross-sectional studies, retrospective accounts, and longitudinal research, which follows participants over the course of months or years. This chapter will briefly discuss the consequences of involvement in school bullying. Firstly, behavioural, psychological, health, and life outcomes will be discussed according to each role in bullying. Secondly, due to the highly negative outcomes associated with victimisation, the effect that both stability and recency of bullying have upon the outcomes will be discussed. Finally, to link this with the previously reported research findings, correlates and risk factors associated with the stability and recency of being bullied will be identified and discussed.

## 5.1 Longitudinal Outcomes of School Bullying

There is compelling evidence that involvement in bullying, as either a victim, bully or bully-victim has a significant impact on children's health and wellbeing (Hawker & Boulton, 2000; Reijntjes et al., 2010). In some cases these consequences may last only a short time, but in other cases, bullying can have a profound impact on an individual's development, with the effects lasting long into adulthood (Takizawa et al., 2014; Wolke, Copeland, et al., 2013). Being bullied can have an impact on all aspects of an individual's life throughout adolescence and adulthood, and has been linked with poor physical health (Bogart et al., 2014; Takizawa et al., 2014), behavioural problems (Gini, 2008; Sourander et al., 2007), psychiatric disorders (Copeland et al., 2013; Hawker & Boulton, 2000; Reijntjes et al., 2010), problematic relationships, including romantic partnerships (Connolly et al., 2000; Wolke, Copeland, et al., 2013), and poor occupational and financial achievement (Wolke, Copeland, et al., 2013). Each of the main roles in school bullying is associated with a unique set of outcomes and the consequences for victims, bully-victims, and bullies are discussed below.

Victims of school bullying are at significantly greater risk of developing physical and mental health problems (Arseneault, Bowes, & Shakoor, 2010; Bogart et al., 2014; Gini & Pozzoli, 2013; Wolke, Copeland, et al., 2013), particularly depression (Bogart et al., 2014; Kaltiala-Heino et al., 1999; Zwierynska, Wolke, & Lereya, 2013), anxiety (Arseneault et al., 2006; Reijntjes et al., 2010; Stapinski et al., 2014), and other psychosomatic symptoms (Gini & Pozzoli, 2009, 2013). A meta-analysis on the association between being bullied and psychosocial maladjustment found that victimisation was strongly linked with depression and loneliness, and moderately associated with low social and global self-worth (Hawker & Boulton, 2000). In some

cases, victimisation has led to more serious mental health concerns, and, independent of other problems, has been linked with psychotic disorders, including borderline personality symptoms (Schreier et al., 2009; Wolke, Lereya, et al., 2013). Victims of school bullying are also more likely to self-harm, to have suicidal ideations, and to attempt or commit suicide (Fisher et al., 2012; Winsper et al., 2012). Recent longitudinal research has shown that adults who were victimised as a child exhibit greater substance abuse (Takizawa et al., 2014), poor occupational and financial attainment (Wolke, Copeland, et al., 2013), and lower quality friendships and romantic relationships (Wolke, Copeland, et al., 2013).

Although fewer studies have focused on bully-victims, the findings suggest that the consequences are as severe, if not worse than those for victims of bullying. Among all children involved in bullying, bully-victims are at the greatest risk of maladjustment (Arseneault et al., 2010), and display significant attentional and behavioural difficulties (Gini & Pozzoli, 2009; Marini et al., 2006). As with victims, bully-victims also experience a range of mental health problems, including both anxiety and depression (Gini, 2008; Gini & Pozzoli, 2009; Veenstra et al., 2005), and are especially at risk of serious physical and mental health problems, including suicidal ideation, self-harm, and suicidal behaviour (Fisher et al., 2012; Klomek et al., 2007; Winsper et al., 2012). The negative consequences of being a bully-victim extend throughout adolescence and into adulthood. Although longitudinal findings are limited, bully-victims are at greater risk of poor health and life outcomes. Adults who were bully-victims at school report poorer general health, including serious illness and non-substance related psychiatric disorders (Wolke, Copeland, et al., 2013), and greater mental health problems, including depression, panic disorder and suicidality (Copeland et al., 2013) when compared to the general population.

Furthermore, at adulthood, bully-victims are more likely to engage in illegal or risky behaviour, have fewer qualifications, are more likely to live in poverty, and report poor quality relationships with their parents and friends (Wolke, Copeland, et al., 2013).

Compared to victims and bully-victims, the outcomes for children who bully are more varied. Although it has been found otherwise (e.g. Klomek et al., 2007; Kumpulainen et al., 1998), several studies suggest that, compared to victims and bully-victims, bullies are not at any greater risk of mental health problems in adolescence or adulthood (Juvonen et al., 2003; Sourander et al., 2007). Bullying perpetration at school has been linked to some behavioural problems, particularly a higher likelihood of engaging in anti-social or delinquent behaviour in both adolescence (Sourander et al., 2009; Ttofi et al., 2011) and adulthood (Copeland et al., 2013), and a greater risk of adolescent substance abuse, including smoking, alcohol, and drugs (Farrington, 1993; Vieno, Gini, & Santinello, 2011). It is important to note however, that some of these studies do not make a distinction between bullies and bully-victims. Although there is some evidence that bullies are more likely to offend or have a criminal conviction as either adolescents or adults (Ttofi et al., 2011), Wolke, Copeland, et al. (2013) found that these differences disappeared after controlling for other family adversities. Aside from these behavioural issues, bullying perpetration appears to have little impact on later life outcomes. Adults who bullied others as children are at no greater risk of poor health, criminal or social outcomes in adulthood after controlling for existing family and childhood risk factors (Wolke, Copeland, et al., 2013).

## **5.2 Stability and Recency of Being Bullied on Outcomes**

There is substantive evidence that being bullied has adverse effects on physical, mental, and behavioural outcomes; however, not all victims or bully-victims will experience the same outcomes. Emerging evidence suggests that although any experience of being bullied can have a harmful effect, differences in the exposure to victimisation can directly affect the severity of the outcomes (Bogart et al., 2014; Schreier et al., 2009; Zwierzyńska et al., 2013). Two key factors have been identified: stability of victimisation, and how recently the bullying occurred.

‘Stability’ (also termed chronicity in some cases) refers to the duration of being bullied (e.g. months or years). In effect, it determines whether there is a direct dose-response relationship between victimisation and its associated outcomes (Copeland et al., 2013). To examine the impact of stability, recent longitudinal studies have distinguished between two groups of victims: stable victims, who were bullied over two or more time points, and unstable victims, who were bullied at only one time. In general, the findings indicate that the longer a child is victimised, the more severe the consequences will be (Copeland et al., 2013; Juvonen, Nishina, & Graham, 2000; Rueger, Malecki, & Demaray, 2011; Scholte et al., 2007; Schreier et al., 2009; Smith et al., 2004; Wolke, Copeland, et al., 2013; Zwierzyńska et al., 2013). For example, Bogart et al. (2014) examined the stability of bullying in relation to children’s health across three time points. All children who were victimised displayed poorer outcomes than those who were not bullied; however, stable victims showed poorer mental and physical health, were more depressed, and had lower self-worth than unstable victims. Similarly, using measures of health and victimisation at ages 5 and 12, Bowes et al. (2013) found that children who were bullied at both time points displayed more internalising and externalising behaviour, and were more anxious and

depressed than those who were bullied only at age 5 or only at age 12. Similar findings have been observed in relation to other outcomes, with stable victims also at greater risk of psychotic symptoms (Schreier et al., 2009), self-harm (Lereya, Winsper, et al., 2013), behavioural difficulties (Smith et al., 2004), problematic social relationships (Scholte et al., 2007; Smith et al., 2004), and poorer financial and educational outcomes in adulthood (Wolke, Copeland, et al., 2013) when compared to unstable victims.

While these studies illustrate the direct impact of stable victimisation, Juvonen et al. (2000) argue that it is not only the duration of the bullying that matters, but also the timing of it. 'Recency' can be used to refer to the timing of the bullying experience relative to when outcome data were collected. At present, there is some evidence to indicate that the more recent the bullying experience is, the poorer the outcomes will be (Bogart et al., 2014; Juvonen et al., 2000; Smith et al., 2004). To examine this, unstable victims can be subdivided into two distinct groups: escaped victims, who were bullied at an earlier time point but are no longer victimised, and new victims, who had not experienced any bullying up until the most recent time point.

Comparing escaped and new victims against stable victims on measures of psychological adjustment, Juvonen et al. (2000) found a clear recency effect; only those that were currently being bullied (both stable and new victims) reported significantly poorer outcomes. No differences were found between these two groups on any of the measures used. In contrast, escaped victims appeared to show signs of improvement, and did not differ from non-victims on measures of loneliness, self-worth or depression. Further studies provide partial support for this effect. Scholte et al. (2007) found escaped victims, who had only experienced bullying in childhood (but not adolescence), were not at increased risk of poorer social adjustment in

adolescence, and suggested that the social problems caused by bullying may “disappear once the victimisation is over” (p. 18). Similar results were reported by Smith et al. (2004) in relation to measures of adjustment or school functioning.

The findings have two major implications. Firstly, if new victims suffer the same consequences as stable victims, then it is important to consider the recency of bullying as well as the stability. Although Juvonen et al. (2000) did find evidence for this, more recent studies indicate that new victims do experience significant negative outcomes, but these are not as severe as those identified for stable victims. For example, Bogart et al. (2014) reported that new victims reported poorer physical and mental health, including more depressive symptoms and lower self-worth than non-victims; however, stable victims performed significantly worse than new victims on all of these measures. Similarly, when making direct comparisons, new victims have been found to be less anxious or depressed (Bowes et al., 2013) and displayed fewer behavioural problems overall than stable victims of bullying (Smith et al., 2004).

Secondly, that escaped victims show better outcomes than new or stable victims suggests that the consequences of bullying may be temporary, or can be recovered from. While Smith et al. (2004) reported no differences from non-victims on most measures, they did find some residual effects, with escaped victims continuing to experience peer relationship problems after the bullying had stopped. Recent studies support this residual impact: children who were bullied in primary but not secondary school displayed fewer problems than new or stable victims, but showed more internalising problems, anxiety and depressive symptoms at age 12 than non-victimised children (Bowes et al., 2013). Similarly, Bogart et al. (2014) reported that escaped victims of bullying continued to demonstrate poorer physical and mental health outcomes than children who were never bullied.

### **5.3 Correlates and Risk Factors Associated with Stability/Recency of Being Bullied**

Considering that the stability or recency of victimisation can lead to poorer outcomes, identifying correlates or risk factors associated with victimisation may help to explain why some youth are able to escape bullying, yet others become, or remain victims over time. A broad range of individual and sociodemographic characteristics have been linked with rates of peer victimisation, including age, sex, and ethnic group (Nansel et al., 2001; Tippett, Wolke, & Platt, 2013), behaviour and adjustment (Cook et al., 2010; Gini, 2008), socioeconomic status (Tippett & Wolke, 2014b), parenting behaviour (Lereya, Samara, et al., 2013) and sibling or peer relationships (Bowes et al., 2014; Tippett & Wolke, 2014a; Veenstra et al., 2005); however, few of these characteristics have been explored in relation to whether youth escape, become, or remain victims of school bullying.

Current evidence suggests that stable victimisation seems to be most linked with poor peer relationships. Stable victims have fewer and poorer quality relationships (Hodges et al., 1997), are less likely to receive positive peer nominations (Wolke, Woods, et al., 2009), report more hierarchical classroom structures (Schäfer et al., 2005), and experience more problematic social relationships (Smith et al., 2004). Additionally, Wolke, Woods, et al. (2009) found females were more likely to be stable victims than males. In contrast, escaped victims seem to have higher quality, more reciprocal peer relationships, which may protect them from being bullied further, and could also potentially buffer the negative impact that bullying can have (Hodges et al., 1997). Aside from better friendships however, there appear to be few factors which explain why some youth are able to escape being victimised.

In regards to new victims, youth with emotional health problems have been found at greater risk of becoming victimised (Reijntjes et al., 2010), however, other characteristics, including sex, number of friendships, behavioural problems, or household situations did not explain why some became victimised by their peers (Wolke, Woods, et al., 2009). Completely unknown is whether and how sibling and other family relationships may impact on remaining a victim, escaping being bullied or becoming a victim of bullying. Cross-sectional studies suggest that being a victim of sibling bullying at home may impact on peer relationships at school (Duncan, 1999b; Tippett & Wolke, 2014a; Wolke & Samara, 2004)

#### **5.4 Summary and Conclusions**

There is strong evidence to show that involvement in school bullying, in particular being a victim or bully-victim, can have a detrimental impact on all aspects of a child's life, causing physical and mental health concerns, damaging social relationships, and limiting academic and occupational outcomes. While bullying perpetration is linked to some behavioural problems, it is the experience of victimisation which causes the greatest damage (Arseneault et al., 2008). Recent longitudinal studies have begun to show that stability of bullying matters; those that are bullied for longer report poorer outcomes than those that are bullied for a short time. There is also some evidence of a recency effect, with current experience of bullying predicting the poorest outcomes, and children who escape being bullied showing some evidence of recovery. Further research is required to better understand the effect of stability and recency on the outcomes of being bullied. Linking back to the ecological systems model, it is also important to look at potential correlates or risk factors associated with stability and recency of victimisation. As yet, there are few clues to explain why some children escape victimisation, while others become or

remain as victims. To address these gaps in the literature, Chapter 12 (Study 5) examines the effect of stability and recency of victimisation on behavioural and social outcomes. Furthermore, individual and sociodemographic characteristics associated with escaping, becoming, or staying a victim of bullying are identified.

## Chapter 6      Research Questions

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This chapter introduces the five studies included in this thesis, which are presented in Chapters 8 through to 12. Following the previous overview of literature which highlighted current gaps in knowledge, a brief description of the rationale underlying each study is included, along with the key research questions.

Overall, this thesis aimed to address two key research questions. Firstly, what correlates or risk factors are associated with being a victim, bully, or bully-victim? Chapters 8-10 (Studies 1, 2, and 3) focused on specific factors which at present show inconclusive or inconsistent associations with school bullying; namely, socioeconomic status, sibling relationships, and ethnicity. Chapter 11 (Study 4) then drew these findings together to build a sociodemographic profile, which can be used to identify children who already are, or are at risk of becoming victims, bullies, or bully-victims at school. Secondly, this thesis asked what effect stability or recency of victimisation had on the outcomes for victims of bullying. Study 5 (Chapter 12) used longitudinal data to explore how differences in the exposure to victimisation affected individual and social outcomes. Furthermore, correlates and risk factors associated with the stability and recency of victimisation were identified.

## **6.1 Study 1: Socioeconomic Status and Bullying: A Meta-Analysis**

As shown in Chapter 3, there is a sizeable amount of literature examining the relationship between bullying and socioeconomic status. Although this research tends to indicate that victims, bully-victims and bullies (Alikasifoglu et al., 2007; Jansen et al., 2011; Jansen et al., 2012; Wolke et al., 2001) are more likely to come from low socioeconomic backgrounds, other studies find no association (Garner & Hinton, 2010; Ma, 2001; Shetgiri et al., 2012). Using meta-analytic techniques, this study is the first to systematically investigate the association between bullying and socioeconomic status.

### **Research Question:**

- What is the strength and nature of the relationship between role taken in school bullying (victim, bully, and bully-victim) and measures of socioeconomic status (including affluence, parental education, disadvantage, income, parental occupation, and overall/composite measures)?

## **6.2 Study 2: Aggression between Siblings: Associations with the Home Environment and Peer Victimization**

In comparison to peer aggression, much less is known about aggression between siblings. Research in the area is plagued by definitional and methodological issues which make it difficult to determine the exact nature, extent, or correlates of sibling aggression (Krienert & Walsh, 2011; Tucker, Finkelhor, Turner, et al., 2013). Some discussion of these issues is provided separately in Chapter 9. A handful of studies have identified associations between sibling aggression and school bullying (Duncan, 1999b; Menesini et al., 2010; Wolke & Samara, 2004; Wolke & Skew, 2012),

however, it is not yet clear whether being victimised or perpetrating aggression towards a sibling will influence whether children participate in bullying at school.

### **Research Questions:**

- How prevalent is sibling aggression among a nationally representative sample of UK adolescents?
- What individual or household factors, including demographic characteristics, family and sibling composition, parent-child relationships and socioeconomic status, are associated with involvement in sibling aggression?
- Is sibling aggression homotypically (same behaviour, i.e. sibling aggressor is most likely a school bully) or heterotypically (different roles) related to involvement in school bullying?

### **6.3 Study 3: Ethnicity and Bullying Involvement in a National UK Youth Sample**

While much research has concentrated on age and sex differences, few studies have explored whether involvement in bullying differs according to ethnicity. At present, findings are contradictory. Some studies have suggested there are few differences in rates of victimisation according to ethnic group (Durkin et al., 2012; Eslea & Mukhtar, 2000; Monks et al., 2008; Moran et al., 1993), however, others indicate that ethnic minority children may be less or even more often involved compared to the ethnic majority (Hanish & Guerra, 2000; Nansel et al., 2001; Sawyer et al., 2008; Spriggs et al., 2007). This study aimed to determine whether rates of being bullied or bullying others differed between ethnic groups.

**Research Questions:**

- Does involvement in school bullying differ among ethnic groups among a nationally representative sample of UK adolescents?
- Do these differences remain after controlling for potential confounders, including age, sex, economic situation, parental qualifications, family structure and parent-adolescent relationships?

**6.4 Study 4: Profiling Roles in School Bullying: Individual, Social and Sociodemographic Characteristics**

A wide variety of correlates and risk factors associated with involvement in school bullying have been identified, however, much of this research tends to focus on a specific characteristic, or set of characteristics, such as parenting, age/sex, or behaviour. There are few studies that consider correlates of school bullying across multiple domains. This study identified correlates and risk factors for school bullying across a range of individual, social, and sociodemographic domains, thereby determining which factor or group of factors is mostly strongly associated with involvement in school bullying.

**Research Questions:**

- Using a wide range of measures covering individual, social and sociodemographic characteristics, which measure or group of measures is most strongly associated with roles of involvement in school bullying (victims, bullies, and bully-victims)?

## **6.5 Study 5: Remaining, Escaping or Newly Bullied in Adolescence: Risk Factors and Consequences**

Chapter 5 illustrates the outcomes associated with all roles in bullying. Those who are victimised, as either victims or bully-victims, suffer the greatest consequences; however, recent findings have shown a dose-response relationship, whereby those that are bullied for longer report poorer outcomes (Bogart et al., 2014; Bowes et al., 2013; Wolke, Copeland, et al., 2013). Other studies suggest that recency matters (Juvonen et al., 2000; Scholte et al., 2007; Smith et al., 2004); those who were bullied most recently displayed poorer outcomes than those who had managed to escape victimisation. This study aimed to determine how stability and recency related to the outcomes of being bullied. In addition, this study also considered which factors may explain why some children remain as victims, while others become victims, or manage to escape bullying altogether.

### **Research Questions:**

- What effect does the stability and recency of being bullied have on self-reported individual and family outcomes?
- Which individual, social and household factors can predict whether children escape victimisation, remain stable victims, or become victims of bullying?

## **Chapter 7      Methodology**

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This chapter provides an overview of Understanding Society, the data source used in four of the five studies included in this thesis (Studies 2, 3, 4 and 5; Chapters 9-12). Key features of Understanding Society are discussed, including the design, recruitment of participants, study population, instruments, and methods of data collection. Measures from Understanding Society which are used in the present research are introduced. As involvement in school bullying is a main measure in each of the studies, it is described in full. Key outcome or predictor variables, including ethnicity, sibling aggression, and happiness/behavioural problems are briefly described, however, more detailed information is available in later chapters. Finally, all predictor or control variables used throughout this thesis are presented in Table 2. As Study 1 is a meta-analysis of research, the methods used are discussed separately in Chapter 8.

### **7.1 Overview of Understanding Society**

Understanding Society is a longitudinal panel study which examines the social and economic circumstances of people living in the UK. The primary aim of the study is to provide “high quality longitudinal data about subjects such as health, work, education, income, family, and social life to help understand the long term effects of social and economic change” (McFall, 2013, p. 4). The study uses a household panel design, which selects participants on the basis of their household context, rather than

individual characteristics. The sample comprises around 100,000 individuals from almost 40,000 households, distributed equally across all areas of the UK (including England, Scotland, Wales and Northern Ireland). As a result, the sample can be considered representative of the UK population as a whole.

Annual data collection started in 2009. As well as collecting household level information, adults and youths (defined as aged 10-15) within participating households were individually surveyed at each time point using a variety of instruments and methodologies. The survey is multi-topic, supporting research across the social, physical and environmental sciences, and covering a wide range of issues, including health, behaviour, economic circumstances, and social engagement. At present, data from the first three waves of Understanding Society has been made publically available, and the datasets, as well as further information on the study can be obtained directly through the projects dedicated website:

[www.understandingsociety.ac.uk](http://www.understandingsociety.ac.uk).

## **7.2 Mainstage Sample and Recruitment**

Understanding Society comprises four separate samples: a general population sample; an ethnic minority boost sample; participants from the British Household Panel Study, a precursor to Understanding Society, and; an innovation panel. The three former categories comprise the mainstage survey, and constitute the bulk of all participants. Those who previously participated in the British House Panel Study and are now part of Understanding Society were only integrated at Wave 2, and therefore do not feature in the present research. Additionally, a small minority of participants make up the Innovation Panel, which uses a separate survey to test instruments and measures prior to their integration within the mainstage survey. Only the general

population sample and ethnic minority boost sample were used in the present research, therefore both of these groups are described below.

### ***7.2.1 General Population Sample (GPS)***

The general population sample is “a stratified, clustered, equal probability sample of residential addresses drawn to a uniform design throughout the whole of the UK” (Buck & McFall, 2012, p. 9). In Great Britain, 2,640 postal sectors were selected among nine regions in England, Scotland and Wales, stratified by population and minority ethnic density. In each sector, 18 addresses were selected systematically to give an equal-probability sample. In Northern Ireland, addresses were selected systematically from the Land and Property Services Agency list of domestic properties. After filtering out ineligible addresses, a total of 45,325 households were visited and invited to participate in the survey, with a response rate of 57.6% (Lynn et al., 2012). Response rates varied by region; the highest response rate was in the northeast of England (63.2%), while the lowest came from inner London (45.3%). Comparisons on local area statistics suggested slightly lower response rates were found in areas with high fulltime employment, more single person households, and residents in high managerial or professional occupations.

### ***7.2.2 Ethnic Minority Boost Sample (EMBS)***

The ethnic minority boost sample aimed to recruit 1,000 adults from each of the five largest ethnic minority groups in the UK: Indian, Pakistani, Bangladeshi, Caribbean and African. Seven hundred and seventy-one (771) postal sectors, estimated to contain high proportions of ethnic minority groups (according to the 2001 census and Annual Population Survey), were selected; the number of addresses chosen within each sector ranged from 15 to 103. Around 43,000 addresses were identified and

screened for eligibility to provide 1,000 respondents from each of the five target ethnic minorities. 10,111 households were approached and asked to participate in the study, with a response rate of 52.0% (Lynn et al., 2012).

### **7.3 Target Sample**

The target sample for the present research was youth (defined as aged 10 to 15) who participated in Understanding Society. Of the 30,169 households that responded during Wave 1 of the study (as part of both the GPS and EMBS) 3,656 included youth between the ages of 10 and 15. Self-completion questionnaires were given to 5,182 eligible youth within the General Population Sample, and 1,425 in the Ethnic Minority Boost Sample. Response rates were 77% and 63% respectively, to give a total of 4,899 respondents, aged 10 to 15 (3,995 from the GPS, 904 from the EMBS). For both samples, response rates were slightly lower among male participants, and those aged 10.

The final two studies (Study 4 and 5) only used youth participants who responded across two or more waves of data collection, thus the samples used are smaller due to attrition (2,003 participants dropped out between Waves 1 and 3), and participants moving onto the adult survey once they reached the age of 16 (N = 1,005). Of the original 4,899 youth respondents, 2,783 completed the youth survey at Wave 2, and 1,891 at Wave 3. Dropout analysis on participants lost across waves is provided in Study 5 (Chapter 12).

### **7.4 Instruments**

Understanding Society used a range of instruments for data collection, including interviews, Computer Assisted Personal Interviewing (CAPI) questionnaires, and paper-based self-completion questionnaires. For the first four waves, all data were

collected face-to-face, by a trained interviewer. Among participating households, one member of the household completed a household enumeration grid and interview, which determined who currently lived within the household, how residents were related to each other, and whether or not they were eligible to participate in the study. All adults (aged 16 or above) currently residing within the household completed an individual interview and self-completion questionnaire, which addressed a variety of topics, including family and relationships, health, employment and financial history, ethnicity, discrimination, religion, beliefs, and attitudes. Due to the large range of topics covered by Understanding Society, only core topics are repeated on an annual basis. All other modules are rotated, appearing every two years or less often. In addition, the questionnaire presented to the Ethnic Minority Boost Sample included extra items which were of specific relevance only to ethnic minority communities.

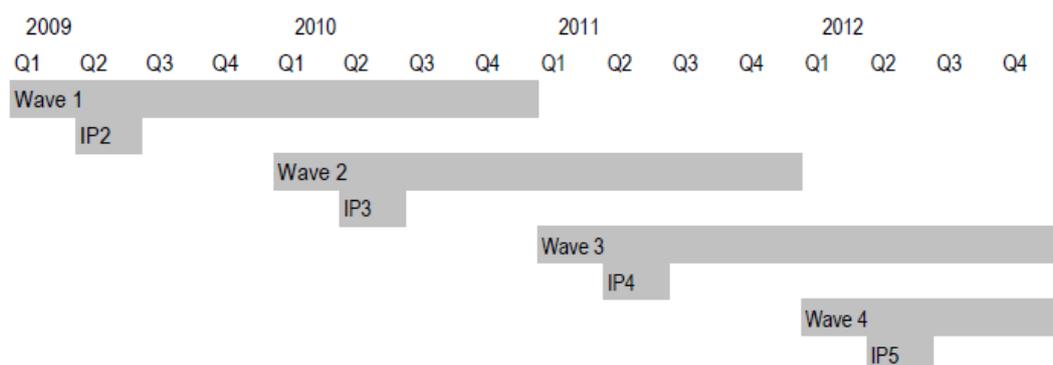
#### ***7.4.1 Youth Questionnaire***

The youth questionnaire (see Appendix A) was provided to all participants aged between 10 and 15. Prior to administering the survey, interviewers obtained verbal consent for the child's involvement from a parent or other responsible adult. The questionnaire was presented as a pen and paper survey, and participants were encouraged to complete it while the interviewer was in the house (although not present while it was answered). Participants were not able to request assistance from their parents, although if they experienced difficulties, they could ask the interviewer for help. After completing the survey, questionnaires were placed in a sealed envelope and returned directly to the interviewer; parents were not able to see their child's responses. As with the adult surveys, the youth questionnaire contained core modules as well as rotating modules which appeared every two years or less often. Core modules included demographic characteristics, health, friendships, educational

aspirations and happiness. Rotating modules covered leisure time activities, family life and relationships, behaviour at school including bullying, self-esteem, educational attainment, risky behaviour, identity, personal attitudes, and future intentions. Measures used within the current research are described individually later in this chapter.

## 7.5 Data Collection

Figure 2 depicts the timing of data collection over the first three waves of Understanding Society. Each wave was collected over a period of two years due to the large size of the sample. Wave 1 data collection began in January 2009, and finished in December 2010. Collection of Wave 2 data overlapped the first wave, starting in January 2010 and finishing in December 2011, while Wave 3 data was collected between January 2011 and December 2012. Participating households were surveyed at roughly the same time during each wave, therefore responses were gathered at an interval of one year.



*Note. IP2, IP3 etc: Innovation panel wave 2, 3 etc.*

**Figure 2** Timing of Data Collection (Buck & McFall, 2012)

## **7.6 Descriptions of Understanding Society Measures Used in the Present Research**

### **7.6.1 School Bullying**

Studies 2, 3, 4, and 5 all included a measure of school bullying, which identified whether participants were victims, bullies, or bully-victims at school. This was assessed using six items, which were asked in the Wave 1 youth questionnaire, and repeated again at Wave 3. Three questions identified whether youths were bullied by their peers (See Table 1). Two of these were adapted from the Peer and Friendship Interview (Schreier et al., 2009) and measured physical and relational bullying; the third item was incorporated as part of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). The three items showed good internal consistency (Cronbach's  $\alpha = 0.79$ ) and were combined into a single dichotomous measure representing victimisation at school. According to the inclusion criteria, youth who were physically or relationally bullied "Quite a lot (More than 4 times in the last 6 months)" or "A lot (A few times every week)", or who had responded "Certainly true" to the SDQ question were classified as victims of bullying; all other children were classed as non-victims. Bullying perpetration was measured similarly, using two questions on physical and relational bullying, and another item from the SDQ. The items showed satisfactory internal consistency (Cronbach's  $\alpha = 0.65$ ), and were combined into a single dichotomous measure: bullies were those youth who met one or more of the inclusion criteria shown in Table 1; all other youth were classed as non-bullies. The two dichotomous measures of victimisation and bullying perpetration were combined to identify four distinct roles in school bullying: non-involved (were neither bullies nor victims), victims (were victims only), bullies (were bullies only), and bully-victims (were both bullies and victims).

**Table 1** Measures of School Bullying Used in Understanding Society

Variable	Measures	Questions	Inclusion Criteria (classified as victim/bully if at least one item present)
<b>Victimisation</b>	Two items on physical and relational victimisation Schreier et al. (2009)	<i>How often do you get physically bullied at school, for example getting pushed around, hit or threatened, or having belongings stolen?</i> <i>How often do you get bullied in other ways at school such as getting called names, getting left out of games or having nasty stories spread about you on purpose?</i>	Quite a lot (more than 4 times in the last 6 months) or A lot ( a few times every week)
	One item from the Strengths and Difficulties Questionnaire (Goodman, 2001)	<i>Other children or young people pick on me or bully me</i>	Certainly true
<b>Bullying perpetration</b>	Two items on physical and relational bullying, adapted from Schreier et al. (2009)	<i>Do you physically bully other children at school by hitting or pushing them around, threatening or stealing their things?</i> <i>Do you bully other children in other ways at school such as calling them names, leaving them out of games or spreading nasty stories about them on purpose?</i>	Quite a lot (more than 4 times in the last 6 months) or A lot (a few times every week)
	One item from the Strengths and Difficulties Questionnaire (Goodman, 2001)	<i>I fight a lot. I can make other people do what I want</i>	Certainly true

## **7.6.2 Key Outcome and Predictor Variables**

### **7.6.2.1 Sibling Aggression**

Sibling aggression was used as a main measure in Study 2 (Chapter 9), which investigated links between peer and sibling forms of aggression. Using measures adapted from Wolke and Samara (2004), 8 items in the Wave 1 youth self-completion questionnaire assessed four types of sibling aggression: physical aggression, stealing, verbal abuse and teasing. To identify victims of sibling aggression, children were asked “How often do any of your brothers or sisters do any of the following to you at home?” with the options “hit, kick, or push you” (physical), “take your belongings” (stealing), “call you nasty names” (verbal) and “make fun of you” (teasing). Four response categories determined the frequency of each option: never; not much (1-3 times in last 6 months); quite a lot (more than 4 times in the last 6 months); a lot (a few times every week). To identify perpetrators of sibling aggression, children were asked “How often do you do any of the following to your brothers or sisters at home?” with the same options and response categories as mentioned above. Composite measures of sibling aggression were then constructed by combining each set of four items into a single scale (Cronbach’s  $\alpha = 0.81$  for both victimisation and perpetration), which measured victimisation and perpetration, respectively.

### **7.6.2.2 Ethnicity**

Study 3 (Chapter 10) investigated whether rates of involvement in school bullying differed between ethnic groups. Youth’s ethnicity was identified through the Wave 1 self-report questionnaire, using a single-response classification question derived from the ethnic identity question in the 2011 national census (ONS, 2012). The item listed eighteen major ethnic groups, which were then grouped into seven broader ethnic

categories: White and White British, Indian, Pakistani, Bangladeshi, Chinese and Other Asian (representing East and South East Asia), Caribbean, and African. Four ethnic categories (Other Black, Other Mixed, Arab and Other; total N: 88) were excluded from the analysis as they contained too few participants for any meaningful statistical comparison.

### **7.6.2.3 Happiness and Behavioural Problems**

Studies 4 and 5 (Chapters 10 & 11) included measures of happiness and behavioural problems, both as predictor and outcome variables. Youth's happiness was assessed through six items in the Wave 1 youth self-report questionnaire, which asked whether participants felt happy about their schoolwork, appearance, family, friends, school and life as a whole. Responses were scored on a seven-point scale ranging from completely happy to not at all happy and combined to give a mean happiness score (Cronbach's  $\alpha = 0.74$ ) (Knies, 2011). The same items were again repeated in the Wave 3 youth questionnaire, allowing for changes in happiness to be identified two years later.

Behavioural problems were assessed at Wave 1 using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001), which provided an overall score indicating total difficulties, as well as identifying five behavioural characteristics (termed subscales): emotional symptoms; conduct problems; hyperactivity/inattention; peer relationship problems; and prosocial behaviour. Each of these characteristics was measured through a set of five questions, scored on a three point scale ranging from 0 (not true) to 2 (certainly true). Responses were summed to give an overall score for each category, ranging from 0 (least behavioural problems) to 10 (most behavioural problems). Two items from the SDQ (picked on or bullied by other children; often fights with other children or bullies them) had already been used to identify roles in

bullying, therefore these items were removed, and their corresponding scales (peer relationship problems and conduct problems respectively) comprised only the four remaining items. Scores across the emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship subscales were combined to give a measure of total difficulties. The SDQ items were repeated again at Wave 3, and are used in Study 5 to illustrate any changes in behaviour over time.

### ***7.6.3 Predictor and Control Variables***

A variety of individual, social and sociodemographic measures included in Understanding Society were used as predictor or control variables throughout the analysis. Table 2 provides a brief overview of each of these measures, including descriptions of each item, the instrument and wave(s) in which they were used, and references where appropriate.

**Table 2** Descriptions of Predictor, Outcome, and Control Variables from Understanding Society

	<b>Instrument</b>	<b>Wave No.</b>	<b>No. of Items</b>	<b>Cronbach's alpha</b>	<b>Range/Categories</b>	<b>Used in</b>	<b>Notes/References</b>
<b>Demographic Factors</b>							
<i>Age</i>	Youth Questionnaire	1, 2, 3	1	-	Age 10 (youngest) - Age 15 (oldest)	Study 2, 3, 4, 5	
<i>Sex</i>	Youth Questionnaire	1	1	-	Male Female	Study 2, 3, 4, 5	
<i>Ethnicity</i>	Youth Questionnaire	1	1	-	White Mixed Asian Black Other	Study 2, 4, 5	Study 3 used a narrower classification based on the same item (see 7.6.2.2.)
<b>Household Characteristics</b>							
<i>Family size</i>	Household Interview	1	1	-	1 (Lowest) - 14 (Highest)	Study 2, 3, 4, 5	
<i>No. of parents living at home</i>	Household Interview	1	1	-	Both parents One or none	Study 2, 3, 4, 5	Does not include step-parents
<i>No. of siblings</i>	Household Interview	1	1	-	No siblings One or more Two or more	Study 2, 3, 4, 5	
<i>Sex of siblings</i>	Household Interview	1	1	-	Only male Only female Male and female	Study 2	
<i>Position in family</i>	Household Interview	1	1	-	Youngest child Middle/Twin child Eldest child	Study 2	

Instrument	Wave No.	No. of Items	Cronbach's alpha	Range/Categories	Used in	Notes/References
<b>Parent-Child Relationships</b>						
<i>Positive relationship</i>	Youth questionnaire	1, 3	3	0.55	0 Least positive - 10 Most positive	Study 2, 3, 4, 5
<i>Negative relationship</i>	Youth questionnaire	1, 3	2	0.62	0 Least negative - 8 Most negative	Study 2, 3, 4, 5
<i>Supportive parenting</i>	Adult questionnaire	1	4	0.79	0 Least supportive - 12 Most supportive	Study 2, 3, 4, 5
<i>Harsh parenting</i>	Adult questionnaire	1	3	0.81	0 Least harsh - 9 Most harsh	Study 2, 3, 4, 5 Major caretaker scores (usually the mother) were used
<b>Sibling Aggression</b>						
<i>Victimisation</i>	Youth questionnaire	1, 3	4	0.81	0 No victimisation - 12 Most victimisation	Study 2, 3, 4, 5
<i>Perpetration</i>	Youth questionnaire	1, 3	4	0.81	0 No perpetration - 12 Most perpetration	Study 2, 3, 4, 5
<b>Parental Relationships</b>						
<i>Parental harmony</i>	Adult questionnaire	1	5	0.79	0 Least harmony - 24 Most harmony	Study 4, 5
<i>Parental conflict</i>	Adult questionnaire	1	4	0.81	0 Least conflict - 20 Most conflict	Study 4, 5 Dyadic Adjustment Scale (Spanier & Thompson, 1982)

	Instrument	Wave No.	No. of Items	Cronbach's alpha	Range/Categories	Used in	Notes/References
<b>Socioeconomic Characteristics</b>							
	<i>Household income (gross monthly income)</i>	Household interview/Adult questionnaire	1	1	-	<£1610pcm £1610-2401pcm £2401-3395pcm £3395-4971pcm >£4971pcm	Study 2, 3, 4, 5 Derived from multiple questions concerning household economic situation
	<i>Income poverty</i>	Household interview/Adult questionnaire	1	1	-	Not poor Poor	Study 2, 3, 4, 5 Poverty indicated by an adjusted income below 60% of the gross monthly median (DWP, 2012)
	<i>Child material deprivation</i>	Adult interview	1	9	0.98	0 No deprivation - 1 Most deprivation	Study 2, 3, 4, 5 See Willitts (2006) for details
	<i>Ownership of consumer items</i>	Adult interview	1	13	0.97	More than mean Less than mean	Study 2, 3, 5 Items summed and dichotomised along the mean (Berthoud, 2011)
	<i>Financial stress</i>	Adult interview	1	3	0.65	No financial stress Any financial stress	Study 2, 3, 4, 5 See Berthoud (2011)
	<i>Parents' qualifications</i>	Adult interview	1	1	-	Degree A levels of other higher GCSE or similar None	Study 2, 3, 4, 5 Highest qualification of either parent was used

	Instrument	Wave No.	No. of Items	Cronbach's alpha	Range/Categories	Used in	Notes/References
<b>Parental Health</b>							
Psychological distress	Adult questionnaire	1	12	0.76	0 No distress - 36 High distress	Study 5	GHQ-12 (D. P. Goldberg et al., 1997)
Physical health	Adult questionnaire	1	12	0.85	0 Poorest health - 100 Best health	Study 5	
Mental health	Adult questionnaire	1	12	0.81	0 Poorest health - 100 Best health	Study 5	
<b>Social/Leisure Characteristics</b>							
<i>Cultural activities</i>	Youth questionnaire	2	5	0.69	0 Least cultural - 20 Most cultural	Study 4	
<i>Social-based activities</i>	Youth questionnaire	2	6	0.65	0 Least social - 25 Most social	Study 4	
<i>Computer use</i>	Youth questionnaire	1, 2	3	0.62	0 Least computer use - 12 Most computer use	Study 4	
<i>Television watching</i>	Youth questionnaire	1, 2	2	0.66	0 Least tv use - 8 Most tv use	Study 4	
<i>Artistic activities</i>	Youth questionnaire	2	2	0.53	0 Least artistic - 10 Most artistic	Study 4	
<i>No. of friends</i>	Youth questionnaire	1, 2, 3	1	-	0 friends - 82 friends	Study 4, 5	

Instrument	Wave No.	No. of Items	Cronbach's alpha	Range/Categories	Used in	Notes/References
<b>Individual characteristics</b>						
<i>Happiness</i>	Youth questionnaire	1, 3	6	0.74	0 Most happy - 35 Least happy	Study 4, 5 See Knies (2011)
<i>Self esteem</i>	Youth questionnaire	2	8	0.77	0 Highest self-esteem - 24 Lowest self-esteem	Study 4 Rosenberg Self-Esteem Scale (Rosenberg, 1989)
<i>SDQ Total difficulties</i>	Youth questionnaire	1, 3	23	0.73	0 Least problems - 46 Most problems	Study 4, 5 See Goodman (2001)
<i>Emotional symptoms</i>	Youth questionnaire	1, 3	5	0.89	0 Least problems - 10 Most problems	Study 4, 5 SDQ Subscale
<i>Conduct problems</i>	Youth questionnaire	1, 3	4	0.82	0 Least problems - 8 Most problems	Study 4, 5 SDQ Subscale
<i>Hyperactivity</i>	Youth questionnaire	1, 3	5	0.83	0 Least problems - 10 Most problems	Study 4, 5 SDQ Subscale
<i>Peer relationship problems</i>	Youth questionnaire	1, 3	4	0.83	0 Least problems - 8 Most problems	Study 4, 5 SDQ Subscale
<i>Prosocial behaviour</i>	Youth questionnaire	1, 3	5	0.89	0 Most problems - 10 Least problems	Study 4, 5 SDQ Subscale

## **7.8 Summary**

Studies 2, 3, 4, and 5 (Chapters 9-12) drew on data from Understanding Society, a longitudinal household panel study, comprising around 40,000 households distributed evenly throughout the UK. The target sample for the present research consisted of 4,899 youths, aged 10-15 who participated in Wave 1 of Understanding Society. Involvement in school bullying, as victim, bully, or bully-victim, was used as the primary measure throughout the research. In addition, a variety of individual, social, and sociodemographic characteristics were considered. Each of these measures is briefly described above, however, additional details on key outcome or predictor variables are provided in later chapters.

## Chapter 8 Socioeconomic Status and Bullying: A Meta-Analysis

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**Objectives:** Involvement in school bullying adversely impacts on children's health and life outcomes. This study investigated whether socioeconomic status can be used to identify which children are at greatest risk of bullying.

**Methods:** A systematic review of published literature on school bullying and socioeconomic status was conducted. The literature search identified 28 cross-sectional and longitudinal studies which reported an association between roles in school bullying and measures of socioeconomic status.

**Results:** Random effects models showed socioeconomic status was only weakly related with bullying roles. Adjusting for publication bias, victims (OR = 1.40, 95% CI = 1.24-1.58) and bully-victims (OR = 1.54, 95% CI = 1.36-1.74) were more likely to come from low socioeconomic households. Bullies (OR = 0.98, 95% CI = 0.97-0.99) and victims (OR = 0.95, 95% CI = 0.94-0.97) were also slightly less likely to come from high socioeconomic backgrounds.

**Conclusions:** Victim and bully-victim roles show a weak association with low socioeconomic status, however, bullies are found across all socioeconomic strata at fairly similar rates. Socioeconomic status provides little guidance for targeted

intervention, and all schools and children, not just those with more socioeconomic deprivation, should be targeted to reduce the adverse effects of bullying.

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## 8.1 Introduction

Up to one third of children are involved in bullying, as either a bully, a victim or a bully-victim (Analitis et al., 2009; Nansel et al., 2001), and when considered alongside the damaging effects on physical and mental health (Copeland et al., 2013; Takizawa et al., 2014; Wolke, Copeland, et al., 2013), bullying can be seen as a major public health concern (Srabstein & Merrick, 2013). Identifying correlates and risk factors for bullying aids potential efforts in targeting interventions, which can prevent youth from becoming involved in bullying, but also limit the impact it has on their health and wellbeing. Traditional risk factors, such as age and sex show a clear association (Espelage et al., 2004; Smith et al., 1999), however there are a range of other potential determinants whose relationship to bullying remains unclear. One such determinant is socioeconomic status (SES), which shows some links to bullying, but at present research findings are inconsistent.

In the most part, studies suggest that low SES is associated with greater rates of victimisation and bullying perpetration (Alikasifoglu et al., 2007; Bowes et al., 2009; Jansen et al., 2011; Jansen et al., 2012). Victims of school bullying have been found to come from families with poor parental education (Jansen et al., 2012; Nordhagen et al., 2005), low parental occupation (Lemstra et al., 2012), economic disadvantage (Bowes et al., 2009; Lumeng et al., 2010) and poverty (Glew et al., 2005). Similarly,

bully-victims appear more likely to come from low socioeconomic backgrounds (Jansen et al., 2011; Jansen et al., 2012), characterised by low maternal education (Alikasifoglu et al., 2007) and maternal unemployment (Magklara et al., 2012). Bullying perpetration has been linked with low overall SES (Jansen et al., 2011; Wolke et al., 2001), and specifically economic disadvantage (Bowes et al., 2009), poverty (Glew et al., 2005) and low parental education (Jansen et al., 2012).

While the majority of studies seem to suggest greater rates of bullying occur among lower socioeconomic levels, a small number of studies have found no apparent differences, with victims, bullies, and bully-victims appearing equally likely to come from all socioeconomic strata (Garner & Hinton, 2010; Ma, 2001; Shetgiri et al., 2012; Veenstra et al., 2005). As such, it is not yet clear how bullying relates to SES. This may be partly due to studies differing in how they measure SES; some use composite measures which combine multiple socioeconomic indicators (e.g. Veenstra et al., 2005), while others concentrate on a single indicator, most often parental education, affluence, or occupation (e.g. Due, Merlo, et al., 2009; Jansen et al., 2012). How bullying relates to SES may differ according to which socioeconomic indicator is used. Furthermore, where studies do report significant differences according to socioeconomic level, the reported effect sizes can vary greatly; thus the overall strength of any such association is uncertain.

At present, the relationship between bullying and SES has not been quantified across a range of studies in a systematic way, therefore the nature and strength of this association is unclear. To address this gap in the literature, a systematic review and meta-analysis was conducted which aimed to determine more precisely the exact nature and strength of the relationship between SES and bullying. Accordingly, this

study systematically investigated the association between role taken in school bullying (victim, bully and bully-victim) and measures of SES.

## **8.2 Method**

### **8.2.1 Search Strategy**

The present study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) checklist (Appendix B) (Moher et al., 2009). To identify studies which reported an association between SES and bullying, a systematic search of the literature was performed using five psychological and medical databases: Web of Knowledge, Scopus, PubMed, PsycINFO and Embase. The search focused on identifying cross-sectional or prospective longitudinal studies published between January 1970 and November 2012, and used the keywords ‘bully’, ‘bulli\*’, or ‘peer victim’ in combination with the search terms ‘socioeconomic’, ‘economic\*’, ‘affluence’, ‘inequality’, ‘standard of living’, ‘poverty’, ‘deprivation’, ‘disadvantaged’, ‘social class’, ‘educational status’, ‘educational level’, ‘educational attainment’, ‘level of education’, ‘employment’, ‘unemployment’, ‘labour’, ‘occupation’, ‘profession’, ‘vocation’, ‘income’, ‘salary’, ‘wage’, ‘wealth’, ‘financial’ and ‘welfare’. Search terms for SES were identified by using Medical Subject Headings (MeSH). To identify any publications missed through the database search, additional hand searches were carried out using the back-catalogues of four journals which regularly publish studies on bullying: The Journal of Child Psychology and Psychiatry, Journal of School Violence, Aggressive Behavior, and Developmental Psychology.

### **8.2.2 Inclusion/Exclusion Criteria**

The abstracts for all search results were screened for relevancy and had to meet specific inclusion criteria. To be included, studies had to be written in English and published as an article, book, or book chapter. Theses and unpublished conference papers were not considered. Furthermore, the study must of reported primary research, which employed a cross-sectional or prospective longitudinal design. Secondly, the study population had to focus on children and adolescents between the ages of 4 and 18. Thirdly, the study needed to include measures of peer victimisation and SES. All forms of bullying, ranging from physical or relational, through to cyberbullying were suitable for inclusion, and could be measured using self, peer, parent or teacher reports. For SES, studies must have reported composite measures relating to overall SES, or individual socioeconomic indices, such as parental education, affluence, parental occupation, disadvantage or income.

Finally, studies must have provided, or were able to provide after request, sufficient statistical information to enable calculation of effect size. This could be reported as raw data (e.g. N's and percentages or Means and SD) or as calculated effect sizes (e.g. odds ratios, F-values or correlation coefficients). All abstracts were independently screened by two raters using the inclusion/exclusion criteria described above. To assess agreement, both raters screened a subsample of studies (n = 847, 26%), giving an agreement percentage of 97.9% (Cohen's kappa = 0.82).

Disagreements were resolved through discussions with a trained research supervisor, and minor modifications were made to the inclusion/exclusion criteria. Both raters then screened a further sample of studies (n = 908, 27.6%), which resulted in an agreement percentage of 99.2% (Cohen's kappa = 0.91). The remaining studies were then screened by the author of this thesis.

### **8.2.3 Coding of Studies**

Each study was independently screened and coded on the basis of bullying role (victim, bully or bully-victim) and socioeconomic measure. A range of socioeconomic measures were reported, and were grouped into six broader categories: affluence (Family Affluence Scale, wealth), parental education (Mother's or Father's educational attainment), disadvantage (deprivation, financial difficulties, socioeconomic disadvantage), income (annual household income, combined parental income), occupation (Mother's or Father's occupation, parental unemployment) and SES (individual, multiple or composite measures of SES, social class). Moderator variables were created based on five key study characteristics: study design (cross-sectional or longitudinal), country (Europe, North America, Other or Cross-National), subject age (child: aged < 11 years, adolescent: aged 11-18 years or both), type of measure (dichotomous, categorical or continuous) and socioeconomic measure (affluence, education, disadvantage, income, occupation, or SES).

### **8.2.4 Data Analysis**

All analyses were conducted using Comprehensive Meta-Analysis (CMA) software Version 2.2 (Borenstein et al., 2005). Odds Ratios (ORs) were selected as the main unit of analysis as this is appropriate when comparing two independent groups on a dichotomous outcome (Bland & Altman, 2000), and the majority of studies compared victims, bullies or bully-victims to non-involved children on a categorical measure of SES (e.g. low vs medium SES, poor vs average parental education). Only eight studies reported SES as a continuous measure. The remaining twenty studies employed a dichotomous or categorical measure of SES, or had used a scale which was easily categorised. Where studies directly reported ORs and 95% confidence intervals, these were entered into CMA. Additionally some studies reported log odds

ratios and standard errors which were then transformed into ORs (Borenstein et al., 2011). Where ORs were not reported, these were estimated by constructing 2 x 2 contingency tables from the raw data and then converted into OR's using CMA (Borenstein et al., 2005). Several studies reported effect sizes for multiple levels of an outcome variable (e.g. reporting ORs for both low vs medium SES and low vs high SES), in which case the effect sizes were combined using CMA to form pooled ORs (Borenstein et al., 2011). Additionally some studies reported multiple effect sizes among two or more independent groups (e.g. for males and females), in which case individual ORs were extracted, and a pooled OR was constructed (Borenstein et al., 2011).

Overall effect sizes were computed by combining socioeconomic indices which broadly related to affluence, parental education, disadvantage, income, occupation, and singular, or composite measures of SES. To assess the relationship with bullying across the socioeconomic spectrum, two separate analyses were performed; the first compared the lowest socioeconomic group to all others, while the second compared the highest socioeconomic group to all others. Exposure groups were constructed by using role in school bullying (victim, bully or bully-victim) compared to non-involved, therefore separate meta-analyses were performed for victims, bullies and bully-victims.

For each study included in the analysis, the individual OR and 95% confidence intervals were compared to the overall weighted effect size across studies according to SES. Summary effect sizes were assessed using the random effects model, computed through the DerSimonian and Laird Method (DerSimonian & Laird, 1986). This approach incorporates the heterogeneity of effects into the overall analysis, therefore providing a stricter effect size than would be found using a fixed

effects model. Overall effect sizes are reported using odds ratios and 95% confidence intervals.

As a wide variety of socioeconomic measures were used in this study, heterogeneity in the results was anticipated. The distribution of effect sizes was examined using the Q and I<sup>2</sup> statistic. A p-value of less than 0.05 indicates significant heterogeneity (Borenstein et al., 2011). To examine variability in the effect size across studies, additional moderator analysis was performed (Appendix C, Appendix D, Appendix E). The five moderator categories used in the analysis were study design, country, subject age, type of measure, and socioeconomic measure. For each category of a moderator variable, a within groups Q statistic (Q<sub>w</sub>) and between groups Q statistic (Q<sub>b</sub>) was calculated. A significant within group difference indicates that effect sizes within a category are heterogeneous, while a significant between group difference indicates that effects sizes significantly differ across categories of the moderator variable (Borenstein et al., 2011).

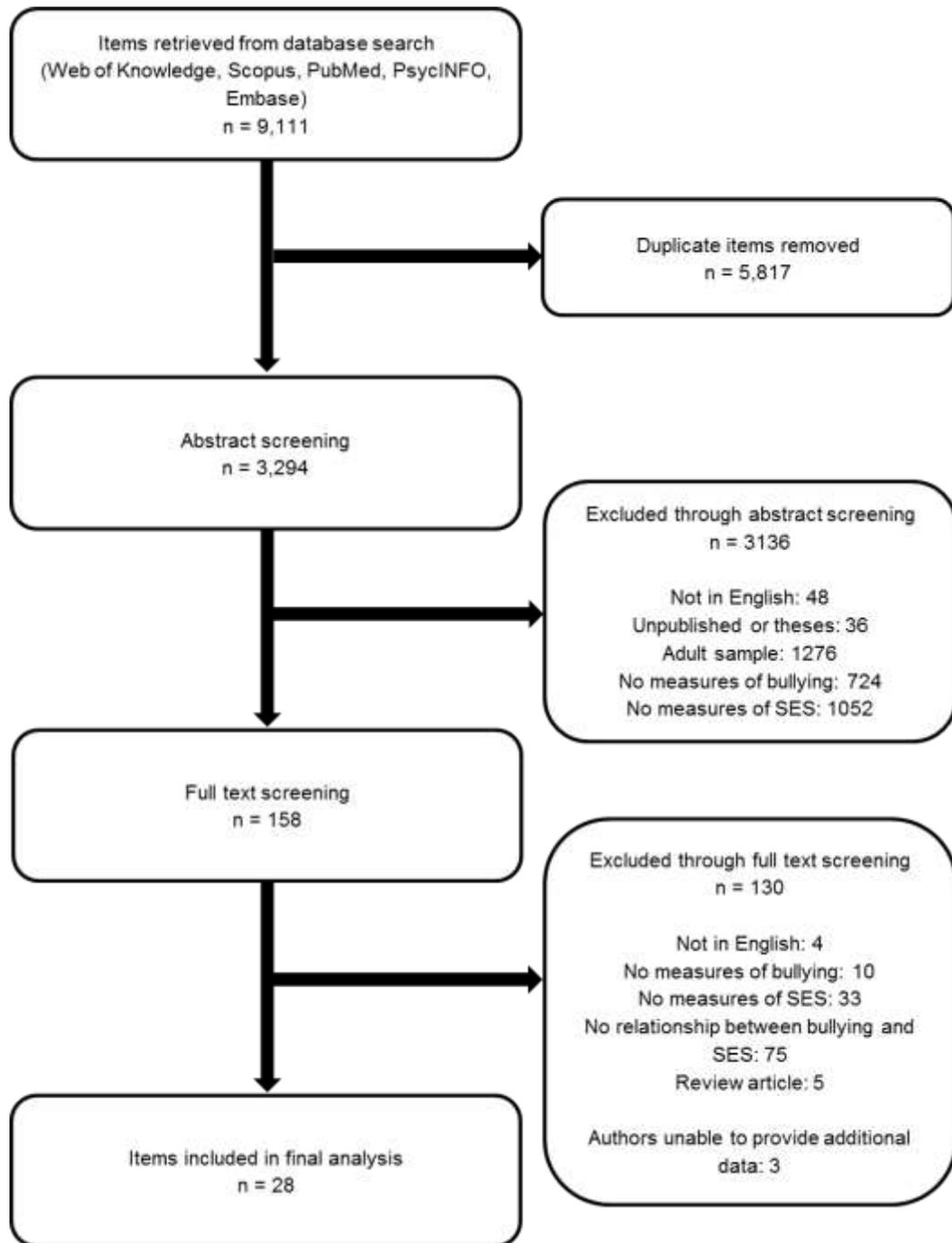
To assess publication bias Rosenthal's failsafe number was computed for each effect size to identify the number of studies that would be required to make the effect non-significant (Rosenthal, 1979). Firstly, a tolerance level was calculated by multiplying the number of effect sizes within the analysis (k), and adding 10 (5k+10 benchmark). A failsafe number which exceeded this tolerance level indicated the presence of a statistically significant meta-analytic effect (Rosenthal, 1979). Secondly, to identify the association between the standardised effect sizes and the variance of these effects, the Begg and Mazumdar rank correlation test was performed using Kendall's  $\tau$  (Begg & Mazumdar, 1994). A significant effect indicated that small studies with undesirable results were less likely to be published, while a non-significant association suggested that there is no underlying publication bias. Thirdly,

Egger's linear regression test was performed to identify whether there was a tendency for studies to be published selectively, based on the nature and direction of their results. The intercept in the regression corresponds to the slope in a weighted regression of the effect size on the standard error. The farther the intercept value deviates from the zero, the less symmetrical the study findings (Matthias et al., 1997). Finally, to assess and adjust for the potential influence of publication bias, the "trim and fill" method of Duval and Tweedie was used (Duval & Tweedie, 2000). This method initially trims the asymmetric studies from one side to identify the unbiased effect, and then fills the plot by re-inserting the trimmed studies as well as their imputed counterparts.

## **8.3 Results**

### ***8.3.1 Search Results***

The electronic database search yielded 1,740 results from Web of Knowledge, 1,000 from Scopus, 4,110 from PubMed, 1,994 from PsycINFO, and 317 from Embase. In total, 9,111 items were retrieved from the five databases (Figure 3). There was an overlap of 5,817 articles which were subsequently removed, giving a total of 3,294 items retrieved through the database search. Of the 3,294 items retrieved, 3,136 were excluded from the analysis as they did not fit the inclusion criteria. Reasons for exclusion were: not written in English (n = 48), not a book, book chapter or peer reviewed article (n = 36), sample not aged between 4 and 18 (n = 1276), no measures of bullying reported (n = 724), or no measures of SES reported (n = 1052).



**Figure 3** Flow Diagram Showing Study Eligibility

In total, 158 abstracts were identified which met all the inclusion criteria, and these were carried forward to full text screening, where the full text was assessed using the inclusion/exclusion criteria described previously. A further 130 studies were then excluded from the analysis, the reasons for which were: full text not available in English (n = 4), article did not present primary research (n = 5), no independent

measures of bullying reported ( $n = 10$ ), no measures of SES reported ( $n = 33$ ), and no direct relationship between bullying and SES reported ( $n = 75$ ). Four articles did not provide sufficient data which could be used to calculate the effect size, in which case authors were contacted and the missing information was requested. One author was able to provide missing data, however two authors could not be reached, and one was unable to provide additional data, resulting in a further 3 studies being excluded. Following abstract and full text screening, a total of 28 studies were identified which met the inclusion criteria (see Table 3 for descriptions of studies).

**Table 3** Summary of Studies

<b>Study</b>	<b>Year</b>	<b>Age</b>	<b>N</b>	<b>Dataset</b>	<b>Country</b>	<b>Design</b>	<b>Type of bullying</b>	<b>Bullying Role</b>	<b>Measure of SES</b>
Alikasifoglu et al. (2007)	2007	Adolescents	4,153	HBSC 1997/1998	Europe	Cross-sectional	General	Victims Bullies Bully-Victims	Affluence Parental education
Analitis et al. (2009)	2009	Children & Adolescents	16,210	Kidscreen 2003	Cross national	Cross-sectional	General	Victims	Affluence Parental education
Barboza et al. (2009)	2009	Adolescents	9,816	HBSC 1997/1998	North America	Cross-sectional	General	Bullies	Income Parental education
Barker, Boivin, et al. (2008)	2008	Children	1,970	Quebec Longitudinal Study of Child Development 1997/1998	North America	Longitudinal	General	Victims	Income Parental education
Bowes et al. (2009)	2009	Children	2,232	E-risk study 1994/1995	Europe	Longitudinal	General	Victims Bullies Bully-Victims	Disadvantage
Christie-Mizell et al. (2011)	2011	Adolescents	687	National Longitudinal Survey of Youth 1979	North America	Longitudinal	General	Bullies	Income Parental education
Due, Merlo, et al. (2009)	2009	Adolescents	142,911	HBSC 2001/2002	Cross national	Cross-sectional	General	Victims	Affluence

<b>Study</b>	<b>Year</b>	<b>Age</b>	<b>N</b>	<b>Dataset</b>	<b>Country</b>	<b>Design</b>	<b>Type of bullying</b>	<b>Bullying Role</b>	<b>Measure of SES</b>
Due, Damsgaard, et al. (2009)	2009	Adolescents	614	Danish Longitudinal Health Study	Europe	Longitudinal	General	Victims	SES
Elgar et al. (2009)	2009	Adolescents	66,910	HBSC 2006	Cross national	Cross-sectional	General	Bullies	Income
Flouri and Buchanan (2003)	2003	Adolescents	1,147	Unique	Europe	Cross-sectional	General	Bullies	Disadvantage
Garner and Hinton (2010)	2010	Children	77	Unique	North America	Cross-sectional	General	Victims Bullies	Income
Glew et al. (2005)	2005	Children & Adolescents	3,530	Unique	North America	Cross-sectional	General	Victims Bullies Bully-Victims	Disadvantage
Jansen et al. (2011)	2011	Adolescents	1,959	TRAILS 2001/2002	Europe	Longitudinal	General	Victims Bullies Bully-Victims	SES
Jansen et al. (2012)	2012	Children	11,419	Rotterdam Youth Health Monitor	Europe	Cross-sectional	General	Victims Bullies Bully-Victims	Parental education Parental occupation
Kim et al. (2009)	2009	Adolescents	1,666	Unique	Other	Cross-sectional	General	Victims Bullies Bully-Victims	SES

<b>Study</b>	<b>Year</b>	<b>Age</b>	<b>N</b>	<b>Dataset</b>	<b>Country</b>	<b>Design</b>	<b>Type of bullying</b>	<b>Bullying Role</b>	<b>Measure of SES</b>
Lemstra et al. (2012)	2012	Children & Adolescents	4,197	Unique	North America	Cross-sectional	Physical Verbal Cyber	Victims	Parental education Parental occupation
Lumeng et al. (2010)	2010	Children & Adolescents	821	Early Child Care and Youth Development	North America	Longitudinal	General	Victims	Disadvantage
Ma (2001)	2011	Children & Adolescents	13,751	Unique	North America	Cross-sectional	General	Victims Bullies	SES
Magklara et al. (2012)	2012	Adolescents	5,614	Unique	Europe	Cross-sectional	General	Victims Bullies Bully-Victims	Disadvantage Parental education
Nordhagen et al. (2005)	2005	Children & Adolescents	17,114	Unique	Europe	Cross-sectional	General	Victims	Parental education
Pereira et al. (2004)	2004	Children	4,092	Unique	Europe	Cross-sectional	General	Victims Bullies	SES
Ranta et al. (2009)	2009	Adolescents	3,156	Unique	Europe	Cross-sectional	Overt Covert	Victims	Parental occupation
Shetgiri et al. (2012)	2012	Children & Adolescents	13,710	HBSC 2001/2002	North America	Cross-sectional	General	Bullies	Affluence
Veenstra et al. (2005)	2005	Children & Adolescents	1,065	TRAILS	Europe	Longitudinal	General	Victims Bullies Bully-Victims	SES

<b>Study</b>	<b>Year</b>	<b>Age</b>	<b>N</b>	<b>Dataset</b>	<b>Country</b>	<b>Design</b>	<b>Type of bullying</b>	<b>Bullying Role</b>	<b>Measure of SES</b>
Wang et al. (2009)	2009	Children & Adolescents	7,182	HBSC 2005/2006	North America	Cross-sectional	Physical Verbal Relational Cyber	Victims Bullies Bully-Victims	Affluence
Wilson et al. (2012)	2012	Adolescents	1,427	Global school-based Student Health Survey	Other	Cross-sectional	General	Victims	Disadvantage
Wolke et al. (2001)	2001	Children	3,915	Unique	Europe	Cross-sectional	General	Victims Bullies	SES
Zimmerman et al. (2005)	2005	Children	1,266	NLSY - Child	North America	Longitudinal	General	Bullies	Parental education

### **8.3.2 Victims and Socioeconomic Status**

In total, 22 studies reported an association between SES and victimisation. Sixteen of these provided data relating to low SES, while 11 provided data on high SES.

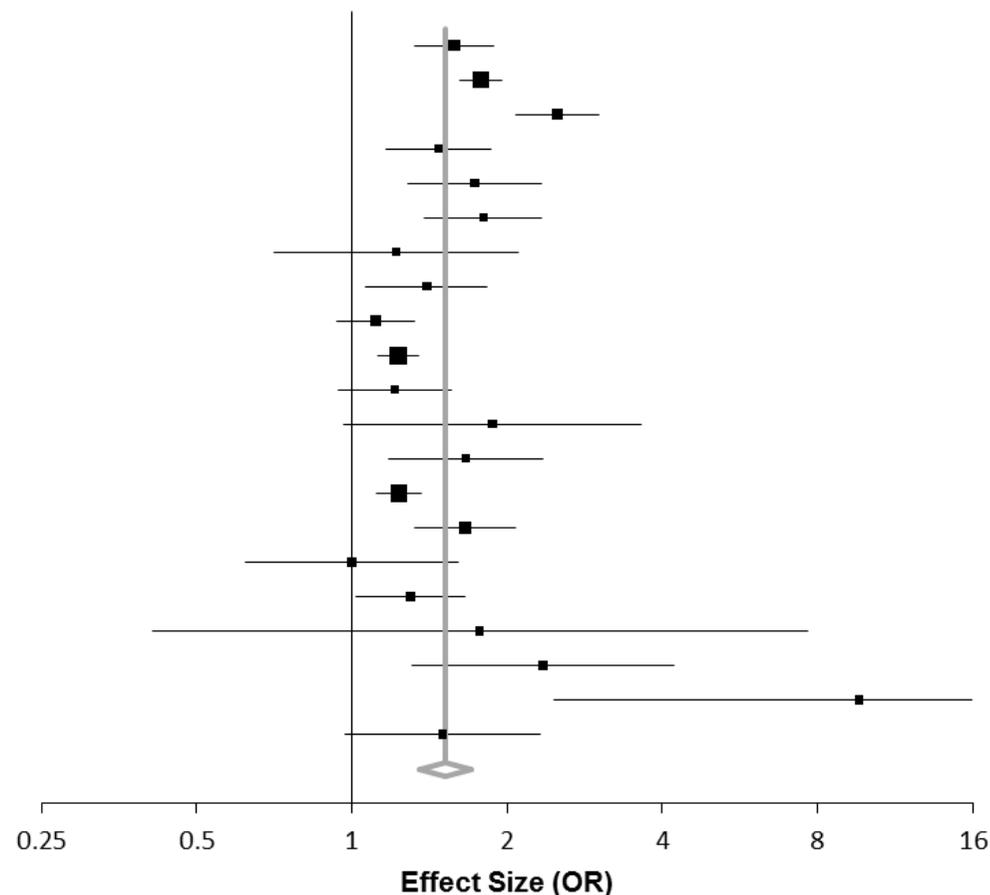
Overall, results indicated that victimisation was positively associated with low SES (OR = 1.52, 95% CI = 1.36-1.71; Figure 4) and negatively related to high SES (OR = 0.73, 95% CI = 0.63-0.86; Figure 5). Significant heterogeneity was found among studies (Appendix C). Those reporting on low SES differed by country ( $Q_b = 15.24$ ,  $p < 0.05$ ), type of measure ( $Q_b = 21.79$ ,  $p < 0.005$ ) and socioeconomic measure ( $Q_b = 73.12$ ,  $p < 0.005$ ). This indicated that stronger relationships between low SES and victimisation were reported in cross-national studies (Mean ES = 1.57, N=3), in studies which used scale measures of SES (Mean ES = 2.04, N=2), and in studies which used measures pertaining to either affluence (Mean ES = 1.84, N=3) or overall SES (Mean ES = 1.95, N=3). For studies reporting associations between victimisation and high SES, differences were observed according to design ( $Q_b = 30.40$ ,  $p < 0.005$ ), country ( $Q_b = 1085.33$ ,  $p < 0.005$ ), and measure of SES ( $Q_b = 903.86$ ,  $p < 0.005$ ), indicating a stronger association between victimisation and high SES in cross-sectional studies (Mean ES = 0.92, N=11), in cross-national research (Mean ES = 0.32, N=2), and in studies which used either measures of affluence (Mean ES = 0.36, N=2) or parental education (Mean ES = 0.50, N=4).

No evidence of publication bias was found for either the high or low socioeconomic models using the 5k+10 benchmark, the Begg and Mazumdar rank correlation test or Egger's test. Duval and Tweedie's trim and fill analysis slightly reduced the overall effect sizes but the associations with both low (OR = 1.40, 95% CI = 1.24-1.58) and high SES (OR = 0.95, 95% CI = 0.94-0.97) retained their significance (Table 4).

**Table 4** Publication Bias Analysis

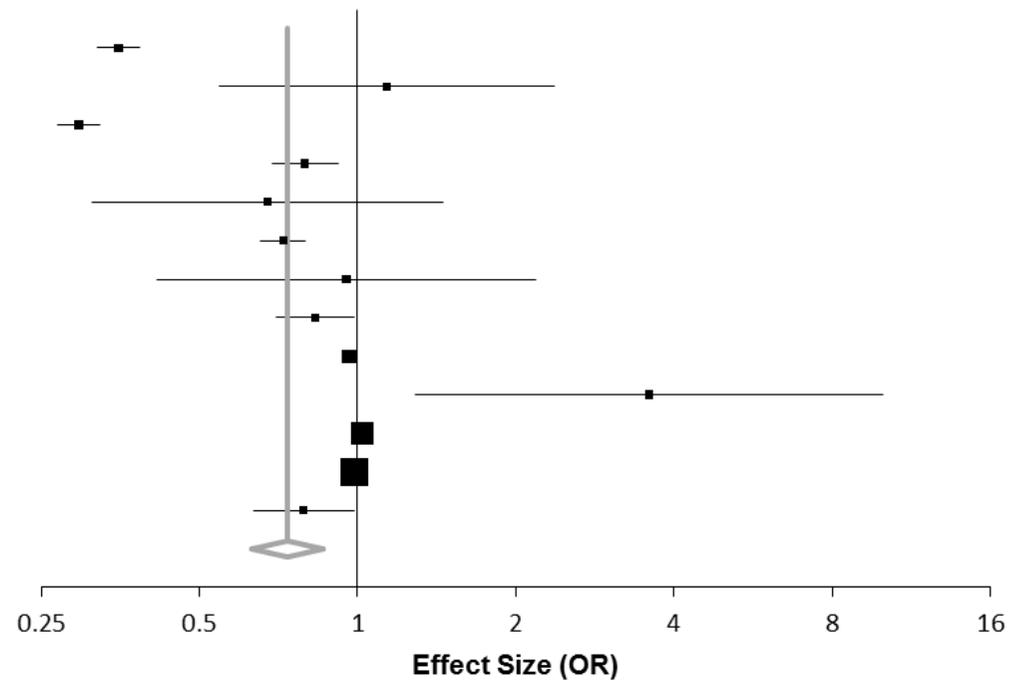
Subgroup	Outcome	Fail Safe N	5k + 10 benchmark	Kendall's Tau	Egger's Test	Trim and Fill
<b>Victims</b>	Low SES	1343	115	0.15 (p = 0.35)	0.89 (-0.98,2.73) p=0.34	<b>1.40</b> <b>(1.24-1.58)</b>
	High SES	972	75	0.09 (p = 0.67)	-5.54 (-12.68,1.59) p=0.12	<b>0.95</b> <b>(0.94-0.97)</b>
<b>Bullies</b>	Low SES	39	70	0.17 (p=0.45)	1.61 (0.11,3.10) p=0.04	1.00 (0.97-1.03)
	High SES	81	85	-0.06 (p=0.77)	-1.32 (-3.20,0.57) p=0.16	<b>0.98</b> <b>(0.97-0.99)</b>
<b>Bully-Victims</b>	Low SES	98	50	0.43 (p=0.14)	2.15 (-2.81,7.12) p=0.33	<b>1.54</b> <b>(1.36-1.74)</b>
	High SES	0	35	0.30 (p=0.46)	1.10 (-2.50,4.71) p=0.40	0.98 (0.96-1.00)

Study	Measure	Effect Size
Alikasifoglu et al (2007)	Affluence	1.58 (1.33 - 1.88)
Analitis et al (2009)	Affluence	1.78 (1.62 - 1.95)
Due et al (2009)	Affluence	2.50 (2.08 - 3.02)
Bowes et al (2009)	Disadvantage	1.48 (1.17 - 1.87)
Glew et al (2005)	Disadvantage	1.73 (1.29 - 2.33)
Lumeng et al (2010)	Disadvantage	1.80 (1.39 - 2.34)
Magklara et al (2012)	Disadvantage	1.22 (0.71 - 2.10)
Wilson et al (2012)	Disadvantage	1.40 (1.07 - 1.83)
Alikasifoglu et al (2007)	Education	1.11 (0.93 - 1.33)
Analitis et al (2009)	Education	1.23 (1.12 - 1.35)
Barker et al (2008)	Education	1.21 (0.94 - 1.56)
Jansen et al (2012)	Education	1.88 (0.97 - 3.64)
Lemstra et al (2012)	Education	1.67 (1.18 - 2.35)
Nordhagen et al (2005)	Education	1.24 (1.11 - 1.37)
Barker et al (2008)	Income	1.66 (1.33 - 2.08)
Jansen et al (2012)	Occupation	1.00 (0.62 - 1.61)
Lemstra et al (2012)	Occupation	1.30 (1.02 - 1.66)
Ranta et al (2009)	Occupation	1.77 (0.41 - 7.65)
Due et al (2009)	SES	2.35 (1.31 - 4.22)
Kim et al (2009)	SES	9.62 (2.47 - 37.47)
Pereira et al (2004)	SES	1.50 (0.97 - 2.31)
<b>Overall Effect Size</b>		<b>1.52 (1.36 - 1.71)</b>



**Figure 4** Forest Plot Showing Association between Victimization and Measures of Low Socioeconomic Status (OR & 95% CI)

Study	Measure	Effect Size
Analitis et al (2009)	Affluence	0.35 (0.32 - 0.39)
Wang et al (2009)	Affluence	1.14 (0.55 - 2.36)
Analitis et al (2009)	Education	0.30 (0.27 - 0.32)
Lemstra et al (2012)	Education	0.80 (0.69 - 0.92)
Magklara et al (2012)	Education	0.68 (0.31 - 1.46)
Nordhagen et al (2005)	Education	0.72 (0.65 - 0.80)
Garner & Hinton (2010)	Income	0.95 (0.42 - 2.19)
Lemstra et al (2012)	Occupation	0.83 (0.70 - 0.99)
Jansen et al (2011)	SES	0.97 (0.94 - 1.00)
Kim et al (2009)	SES	3.59 (1.29 - 10.0)
Ma (2001)	SES	1.02 (1.00 - 1.04)
Veenstra et al (2005)	SES	0.99 (0.97 - 1.00)
Wolke et al (2001)	SES	0.79 (0.63 - 0.99)
<b>Overall Effect Size</b>		<b>0.73 (0.63 - 0.86)</b>



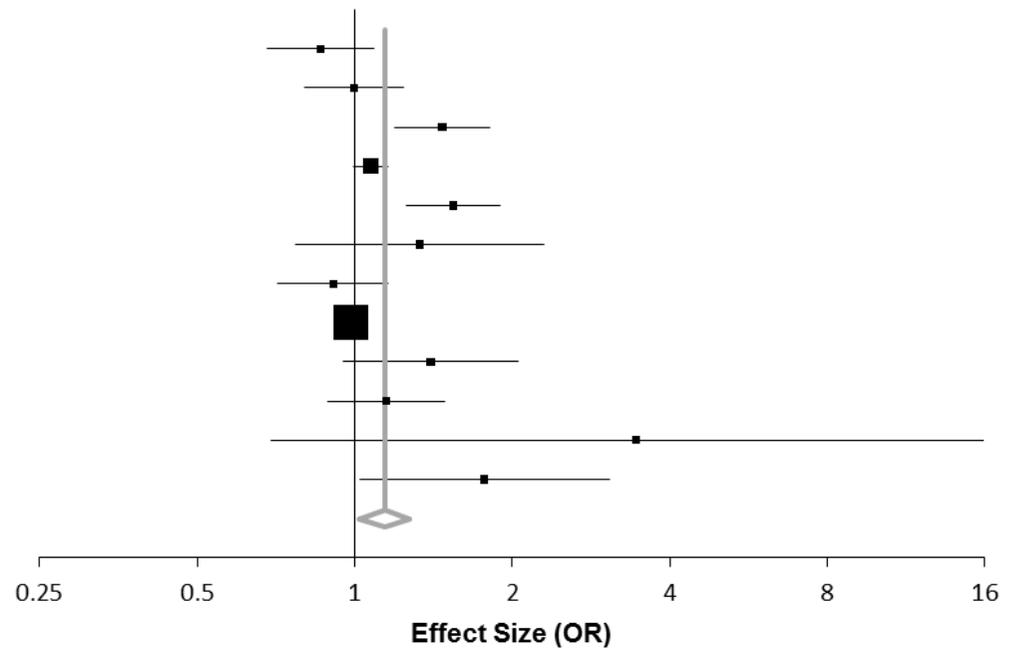
**Figure 5** Forest Plot Showing Association between Victimisation and Measures of High Socioeconomic Status (OR & 95% CI)

### **8.3.3 Bullies and Socioeconomic Status**

Nineteen studies reported an association between SES and bullying perpetration. Of these, 10 provided data relating to low SES, while 13 provided data on high SES. Overall, results indicated that bullying perpetration was positively associated with low SES (OR = 1.14, 95% CI = 1.02-1.27; Figure 6) and negatively related to high SES (OR = 0.89, 95% CI = 0.83-0.95; Figure 7). Significant heterogeneity was found in the sample (Appendix D). Studies reporting on low SES differed by design ( $Q_b = 11.66$ ,  $p < 0.05$ ), country ( $Q_b = 17.61$ ,  $p < 0.005$ ), age group ( $Q_b = 24.62$ ,  $p < 0.005$ ), type of measure ( $Q_b = 14.45$ ,  $p < 0.005$ ) and socioeconomic measure ( $Q_b = 23.60$ ,  $p < 0.005$ ). This indicated that stronger relationships between low SES and bullying perpetration were reported in longitudinal studies (Mean ES = 1.47, N=1), in studies conducted outside of North America and Europe (Mean ES = 3.45, N=1), and in studies which used a child sample (Mean ES = 1.37, N=4). Furthermore stronger associations were found where scale measures of SES were used (Mean ES = 1.47, N=1), and in studies which used overall measures of SES (Mean ES = 1.90, N=2). For the association between bullying perpetration and high SES, differences were observed according to design ( $Q_b = 6.62$ ,  $p < 0.05$ ), country ( $Q_b = 12.40$ ,  $p < 0.05$ ), age group ( $Q_b = 24.97$ ,  $p < 0.005$ ), type of measure ( $Q_b = 8.76$ ,  $p < 0.05$ ) and socioeconomic measure ( $Q_b = 40.40$ ,  $p < 0.005$ ). This indicated that stronger associations between bullying perpetration and high SES were found in longitudinal studies (Mean ES = 0.97, N=6), in studies based in North America (Mean ES = 0.98, N=8), and in studies using a child population (Mean ES = 0.32, N=2). Additionally, stronger effects were found in studies which had used binary measures of SES (Mean ES = 0.72, N=1) and in studies which used parental education as an indicator of SES (Mean ES = 0.59, N=3).

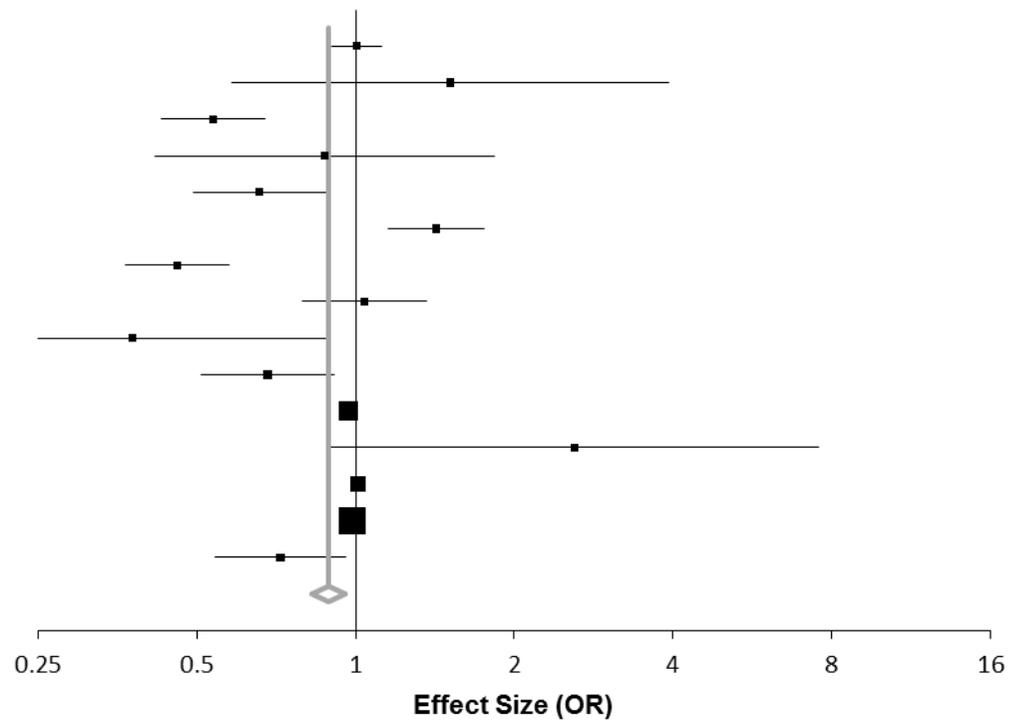
Some evidence of publication bias was found for the association between low SES and bullying perpetration, whereby the fail-safe N did not exceed the benchmark figure, indicating that future studies may alter the observed effect. A significant result was also found using Egger's test, which suggests that non-significant findings were less likely to have been published. Duval and Tweedie's trim and fill analysis reduced the effect size between bullying perpetration and low SES resulting in this becoming non-significant (OR = 1.00, 95% CI = 0.97-1.03); however no evidence of publication bias was observed for the association between bullying perpetration and high SES, therefore this association remained significant (OR = 0.98, 95% CI = 0.97-0.99) (Table 4).

Study	Measure	Effect Size
Alikasifoglu et al (2007)	Affluence	0.86 (0.68 - 1.09)
Shetgiri et al (2012)	Affluence	1.00 (0.80 - 1.24)
Bowes et al (2009)	Disadvantage	1.47 (1.19 - 1.81)
Flouri & Buchanan (2003)	Disadvantage	1.07 (0.99 - 1.16)
Glew et al (2005)	Disadvantage	1.54 (1.25 - 1.89)
Magklara et al (2012)	Disadvantage	1.33 (0.77 - 2.30)
Alikasifoglu et al (2007)	Education	0.91 (0.71 - 1.16)
Barboza et al (2009)	Education	0.98 (0.94 - 1.02)
Jansen et al (2012)	Education	1.40 (0.95 - 2.06)
Jansen et al (2012)	Occupation	1.15 (0.89 - 1.49)
Kim et al (2009)	SES	3.45 (0.69 - 17.15)
Pereira et al (2004)	SES	1.77 (1.02 - 3.07)
<b>Overall Effect Size</b>		<b>1.14 (1.02 - 1.27)</b>



**Figure 6** Forest Plot Showing Association between Bullying Perpetration and Measures of Low Socioeconomic Status (OR & 95% CI)

Study	Measure	Effect Size
Shetgiri et al (2012)	Affluence	1.00 (0.90 - 1.12)
Wang et al (2009)	Affluence	1.51 (0.58 - 3.93)
Christie-Mizell et al (2011)	Education	0.54 (0.43 - 0.67)
Magklara et al (2012)	Education	0.87 (0.42 - 1.83)
Zimmerman et al (2005)	Education	0.66 (0.49 - 0.88)
Barboza et al (2009)	Income	1.42 (1.15 - 1.75)
Christie-Mizell et al (2011)	Income	0.46 (0.37 - 0.58)
Elgar et al (2009)	Income	1.04 (0.79 - 1.36)
Garner & Hinton (2010)	Income	0.38 (0.16 - 0.89)
Zimmerman et al (2005)	Income	0.68 (0.51 - 0.91)
Jansen et al (2011)	SES	0.97 (0.94 - 1.00)
Kim et al (2009)	SES	2.60 (0.89 - 7.55)
Ma (2001)	SES	1.01 (0.98 - 1.04)
Veenstra et al (2005)	SES	0.98 (0.96 - 1.01)
Wolke et al (2001)	SES	0.72 (0.54 - 0.96)
<b>Overall Effect Size</b>		<b>0.89 (0.83 - 0.95)</b>



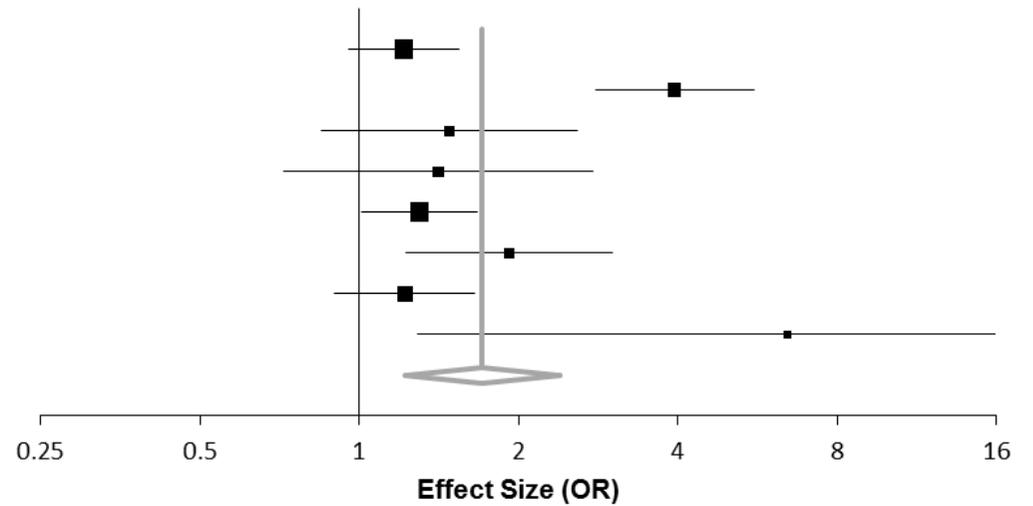
**Figure 7** Forest Plot Showing Association between Bullying Perpetration and Measures of High Socioeconomic Status (OR & 95% CI)

### **8.3.4 Bully-Victims and Socioeconomic Status**

Nine studies reported an association between SES and bully-victims; 6 of these provided data relating to low SES, and 5 provided data on high SES. Results showed that being a bully-victim was positively associated with low SES (OR = 1.71, 95% CI = 1.22-2.39; Figure 8) but not related to high SES (OR = 0.98, 95% CI = 0.93-1.04; Figure 9). Significant heterogeneity was found among studies (Appendix E). Those reporting on low SES differed by design ( $Q_b = 32.88$ ,  $p < 0.005$ ), age group ( $Q_b = 11.16$ ,  $p < 0.05$ ), type of measure ( $Q_b = 36.70$ ,  $p < 0.005$ ) and socioeconomic measure ( $Q_b = 25.31$ ,  $p < 0.005$ ). This indicated that stronger relationships between low SES and bully-victims were reported in longitudinal studies (Mean ES = 3.95, N=1), among child populations (Mean ES = 2.02, N=3), in studies which used scale measures of SES (Mean ES = 3.95, N=1), and in studies which used measures pertaining to either disadvantage (Mean ES = 2.66, N=3) or overall SES (Mean ES = 6.45, N=1). For studies reporting associations between bully-victims and high SES, differences were only observed according to country ( $Q_b = 14.50$ ,  $p < 0.05$ ), with a stronger association found in studies conducted outside of Europe or North America (Mean ES = 0.77, N=1).

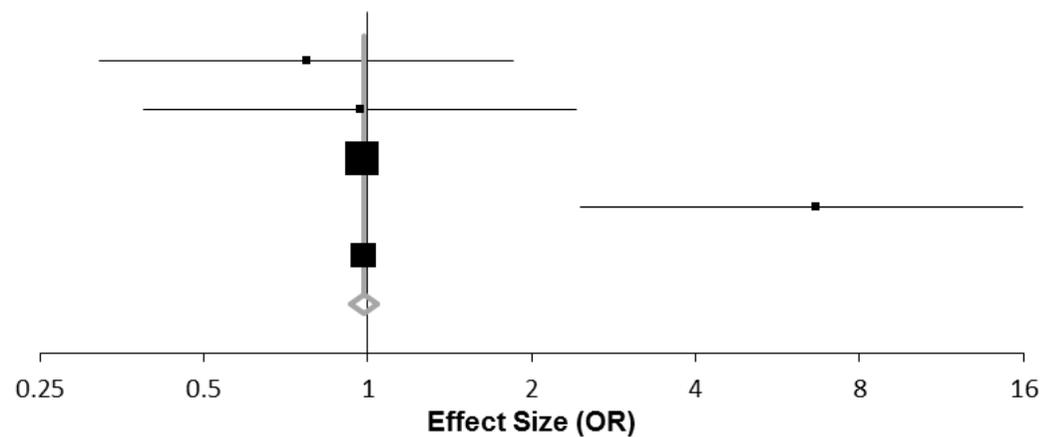
Publication bias was found for the high socioeconomic model, whereby the Fail Safe N did not exceed the 5K+10 benchmark, however the Begg and Mazumdar rank correlation test and Egger's test did not reach significance. Duval and Tweedie's trim and fill analysis slightly reduced the effect size for the association with low SES (OR = 1.54, 95% CI = 1.36-1.74) however this remained significant (Table 4).

Study	Measure	Effect Size
Alikasifoglu et al (2007)	Affluence	1.21 (0.96 - 1.54)
Bowes et al (2009)	Disadvantage	3.95 (2.79 - 5.58)
Glew et al (2005)	Disadvantage	1.48 (0.85 - 2.58)
Magklara et al (2012)	Disadvantage	1.41 (0.72 - 2.76)
Alikasifoglu et al (2007)	Education	1.30 (1.01 - 1.67)
Jansen et al (2012)	Education	1.92 (1.22 - 3.01)
Jansen et al (2012)	Occupation	1.22 (0.90 - 1.66)
Kim et al (2009)	SES	6.45 (1.29 - 32.24)
<b>Overall Effect Size</b>		<b>1.71 (1.22 - 2.39)</b>



**Figure 8** Forest Plot Showing Association between Bullying-Victimisation (Bully-Victims) and Measures of Low Socioeconomic Status (OR & 95% CI)

Study	Measure	Effect Size
Wang et al (2009)	Affluence	0.77 (0.32 - 1.85)
Magklara et al (2012)	Education	0.97 (0.39 - 2.41)
Jansen et al (2011)	SES	0.98 (0.95 - 1.00)
Kim et al (2009)	SES	6.63 (2.45 - 17.93)
Veenstra et al (2005)	SES	0.98 (0.95 - 1.01)
<b>Overall Effect Size</b>		<b>0.98 (0.93 - 1.04)</b>



**Figure 9** Forest Plot Showing Association between Bullying-Victimisation (Bully-Victims) and Measures of High Socioeconomic Status (OR & 95% CI)

## 8.4 Discussion

To the author's knowledge this is the first systematic review and meta-analysis to explore the association between SES and school bullying. The results indicated significant, but weak associations between measures of SES and bullying roles. Victimization was positively related to low SES, and negatively associated with high SES. Bully-victim status was related to low, but not to high SES. Bullying perpetration was the most weakly related, indicating that bullies were only slightly less likely to come from higher socioeconomic backgrounds after adjusting for publication bias. Although significant, these effects, particularly for bullies, were small, suggesting that roles in bullying show some, but generally weak relationships to SES.

Firstly, considering children who were victimised at school, both victims and bully-victims were more likely to come from low socioeconomic backgrounds. At face value, these findings may be indicative of a direct relationship, whereby low SES itself is a cause for victimisation. Being different to the peer group appears to be a main motivator for victimisation (Olweus, 1993; Thornberg, 2010), and simply coming from a lower socioeconomic background or being unable to afford lifestyle goods or resources available to others in the peer group may single out children for victimisation by their peers. In addition, higher SES is accompanied by greater access to intellectual resources, including general and specific knowledge, norms and values, and problem solving skills (Braveman et al., 2005; Galobardes, Shaw, Lawlor, Lynch, et al., 2006), all of which can aid in the development of social skills and coping strategies (Jansen et al., 2012), and reduce the likelihood of children experiencing problematic peer relationships.

Alternatively, the findings may be explained by considering how children's development and experiences differ across socioeconomic strata. Children from low socioeconomic families have been found to experience more adverse home environments, including facing harsher punishment (Straus, Gelles, & Steinmetz, 1980; Straus & Stewart, 1999; Woodworth, Belsky, & Crnic, 1996), restrictive and authoritarian parenting practices (Bayley & Schaefer, 1960; Glasgow et al., 1997; Hoff, Laursen, & Tardif, 2002), experiencing greater levels of sibling violence (Eriksen & Jensen, 2006), and being more often exposed to incidents of domestic violence (Cunradi, Caetano, & Schafer, 2002; Garbarino, 1992). From a social learning theory perspective (Bandura, 1978), children's early relationships at home shape how they interact with others later in life. Experiencing violence or abuse at home can impact on children's ability to form and maintain peer relationships (Bolger, Patterson, & Kupersmidt, 1998; Salzinger et al., 2002), and both victims and bully-victims have been found to have experienced harsher parenting (Lereya, Samara, et al., 2013), abuse (Baldry, 2003; Duncan, 1999a) and sibling violence (Menesini et al., 2010; Tippett & Wolke, 2014a) more often than children not involved in bullying. While some family factors show moderate or strong relationships to bullying (Baldry, 2003; Lereya, Samara, et al., 2013), the association between low SES and victims or bully-victims was weak according to statistical conventions (Cohen, 1988), suggesting that the results may not reflect a direct association between bullying and SES, but rather an indirect relationship which is mediated by the child's home environment. Accordingly, it may be that factors associated with low SES such as how children are parented, interact with their siblings or observe domestic violence are better suited to predicting victim and bully-victim roles than socioeconomic level.

Secondly, the relationship between bullying perpetration and SES was notably weaker than that found for victims and bully-victims, showing no association with low SES, and indicating that bullies were only slightly less likely to come from high socioeconomic households after adjusting for publication bias. This may seem somewhat surprising considering that low SES has been strongly linked with behavioural difficulties in children, particularly aggression and anti-social behaviour (Bolger et al., 1995; Bradley & Corwyn, 2002; McLeod & Shanahan, 1993; Patterson, DeBaryshe, & Ramsey, 1989; Sameroff et al., 1987; Takeuchi, Williams, & Adair, 1991). Furthermore, the risk for maladjustment and behavioural difficulties increases the lower the socioeconomic status (Leventhal & Brooks-Gunn, 2000; Loeber et al., 1995). If bullies were simply those children who exhibited high aggression and behavioural difficulties then a strong link between bullying and SES might be expected, however, no such association was observed. In explaining this, it is important to consider bullying not as an individual trait, but rather as a social strategy to achieve peer acceptance, social dominance, and ultimately, access to resources (Olthof & Goossens, 2008; Pellegrini & Bartini, 2001). Bullies are not highly aggressive *oaf's* who exhibit behavioural difficulties and lack social skills or understanding; rather they have been found to be intelligent and skilled manipulators (Gini, Pozzoli, & Hauser, 2011; Sutton, Smith, & Swettenham, 1999) with good emotional understanding of others (Woods et al., 2009) who use bullying as a means of raising their social profile and attaining dominance over their peers (Hawley, 2003, 2007). Furthermore, there appear to be few costs associated with bullying others; aside from the immediate risk of being caught and punished, bullies do not appear at any greater risk of negative health, social or criminal outcomes in adolescence or adulthood (Copeland et al., 2013; Wolke, Copeland, et al., 2013).

Bullying has been described as an evolutionary strategy (Volk et al., 2012), and accordingly, bullying perpetration would be expected in any socioeconomic strata where there are potential gains to be made. This is compatible with recent research, which has suggested that it is not the absolute level of socioeconomic status that predicts bullying, but rather the degree of social inequality that exists within society. Higher rates of bullying have been found in countries where social inequality is greatest (Due, Merlo, et al., 2009; Elgar et al., 2009). This suggests that in societies where resources are highly unequal, there is greater acceptance of getting ahead by any means, allowing bullies to make greater gains without suffering any particular costs. The relationship between SES and bullying perpetration may therefore be better understood at a societal rather than individual level. Social inequality and its relationship to bullying may warrant future research on whether and why children engage in school bullying.

Although this study provides the first systematic assessment of the relationship between bullying and SES, there are a number of limitations. Firstly, significant heterogeneity was found between studies. Moderator analysis indicated significant variations according to which socioeconomic indices were used, with composite measures of SES tending to report stronger effect sizes than individual socioeconomic indicators. The association with bullying may differ according to socioeconomic measure; however, as yet there is insufficient research to determine how individual indicators such as affluence or parental education specifically relate to bullying. It is important to acknowledge that the strength of association with bullying roles, as well as underlying causal mechanisms, may differ between socioeconomic indices. Additionally, moderator analysis found some evidence of heterogeneity according to study design, country, age group and type of measure,

however, no clear trends were observed due to the small number of studies included. To address this lack of homogeneity, a random effects model was used throughout the analysis which countered the assumption that all studies in the meta-analysis were identical. Secondly, the majority of studies only reported effects using general measures of bullying. Where studies included measures of different types of bullying (e.g. physical, relational, cyber) these were combined using pooled odds ratios. There is some indication that the effect of socioeconomic factors may differ between forms of bullying (Wang et al., 2009) but there was insufficient data available to explore this further. Thirdly, only one study reported separate effects for males and females, therefore it was not possible to establish whether gender moderated the relationship between bullying and socioeconomic factors. Finally, there was some evidence of publication bias in favour of publications that found a significant association between bullying and SES. Indeed, where adjusted for publication bias, effect sizes reduced further.

In summary, this study finds a significant, albeit weak association between bullying and SES. Low SES is associated with increased odds of being a victim or bully-victim, and the early experiences faced by children living in low socioeconomic households may contribute towards the risk of being victimised. In contrast, SES was a poor predictor of bullying others, suggesting that bullying perpetration does not appear to be socially patterned and occurs across all socioeconomic strata at fairly similar rates. Thus, socioeconomic factors, based on current evidence, provide little additional information for targeting efforts in preventing bullying. Rather, to reduce bullying perpetration and the adverse impact that it can have on children's health, interventions should target all children and not just those that experience greater socioeconomic deprivation.

## **Chapter 9      Aggression between Siblings: Associations with the Home Environment and Peer Bullying**

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**Objectives:** Sibling aggression is a common form of intra-familial aggression, yet has been largely neglected by research. This study investigated, firstly, prevalence of sibling aggression and associations with family and household characteristics, and secondly, the relationship between sibling aggression and peer bullying.

**Methods:** Participants were 4,237 youth (aged 10-15) from Wave 1 of Understanding Society. Four types of sibling aggression were measured: physical, verbal, stealing and teasing, and combined into composite measures of victimisation and perpetration. Regression analysis identified associations between sibling aggression and family and household factors, and explored the link between sibling aggression and involvement in peer bullying.

**Results:** Overall, 46% of participants were victimised and 36% perpetrated sibling aggression. Household and family characteristics, including parenting behaviour, a large family size, male siblings, and financial difficulties were associated with greater rates of sibling aggression. Sibling aggression was homotypically related to involvement in peer bullying. Victimization by siblings increased the odds of being a

victim of peer bullying, and perpetrators of sibling aggression were more likely to be peer bullies or bully-victims.

**Conclusions:** Aggression between siblings is widespread, but poorly understood.

Household characteristics were only weakly associated with sibling aggression, with the exception of parenting behaviour; harsh parenting increased the risk of sibling aggression while positive parenting protected against it. The strong homotypic link between sibling aggression and peer bullying suggests that school anti-bullying and intervention efforts should also take into account children's sibling relationships.

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Associations with the home environment and peer bullying. *Aggressive Behavior, Early View*. doi: 10.1002/ab.21557

## 9.1 Introduction

Aggression between siblings is one of the most commonly occurring forms of violence within families (Khan & Cooke, 2013; Straus et al., 1980, p. 83) but is often viewed as harmless or as a normal part of family life (Eriksen & Jensen, 2009; Skinner & Kowalski, 2013). In comparison to the study of peer aggression, sibling aggression has received less research attention (Eriksen & Jensen, 2009; Skinner & Kowalski, 2013); however, there is evidence to indicate that sibling aggression is closely related to involvement in school bullying (Duncan, 1999b; Wolke & Samara, 2004; Wolke & Skew, 2012).

A major barrier to research on sibling aggression is the lack of an accepted definition (Krienert & Walsh, 2011; Tucker, Finkelhor, Shattuck, et al., 2013), and as yet, there is no clear consensus over how sibling aggression should be defined or measured.

There are ongoing debates concerning the use of differing terminology, such as

aggression, violence, abuse, bullying, or rivalry (Eriksen & Jensen, 2009; Krienert & Walsh, 2011), as well as definitional and operational features, such as concepts of intent, repetition (Khan & Cooke, 2013), or severity (Eriksen & Jensen, 2009; Khan & Cooke, 2013). These issues are still some way from being resolved.

Using an inclusive approach, which considers a wide range of aggressive interactions, sibling aggression can incorporate acts of physical or verbal aggression, such as hitting, kicking, and name calling (DeKeseredy & Ellis, 1997; Hardy, 2001; Mackey, Fromuth, & Kelly, 2010), but also psychological abuse, including teasing, threatening, or exclusion (Button & Gealt, 2010; Caffaro, 1998), and property-based aggression, such as stealing or damaging belongings (Tucker, Finkelhor, Shattuck, et al., 2013). Recent estimates have suggested that between one third to one half of children report involvement in any form of sibling aggression, as either victims or perpetrators (Tucker, Finkelhor, Shattuck, et al., 2013; Wolke & Skew, 2012).

Prevalence rates appear to differ according to the type of aggression. Studies which assess multiple forms of aggression have found that victims most often report being physically or verbally victimised by their siblings; fewer experience teasing or psychological forms of aggression (Button & Gealt, 2010; Duncan, 1999b; Skinner & Kowalski, 2013; Tucker, Finkelhor, Turner, et al., 2013; Wolke & Samara, 2004).

Some correlates or risk factors for sibling aggression have been identified. Males more often perpetrate acts of sibling aggression (Duncan, 1999b; Eriksen & Jensen, 2006, 2009; Graham-Bermann et al., 1994), although both sexes are equally likely to be victimised (Button & Gealt, 2010; Felson, 1983; Tucker, Finkelhor, Shattuck, et al., 2013), and it is more prevalent among younger age groups, with rates of physical aggression towards siblings highest in early childhood (Eriksen & Jensen, 2006; Finkelhor, Turner, & Ormrod, 2006; Radford et al., 2013). Household characteristics

may increase the risk. Children who either witness or experience domestic violence are more likely to behave aggressively towards siblings (Eriksen & Jensen, 2006; Green, 1984; Radford et al., 2013), and the use of physical punishment by parents predicts greater sibling physical aggression (Eriksen & Jensen, 2009; Patterson et al., 1984). In contrast, warm and positive parenting has been linked to supportive, positive sibling relationships with lower rates of conflict (Brody, Stoneman, & McCoy, 1994). Financial difficulties and a lack of economic resources are also associated with greater aggression between siblings (Eriksen & Jensen, 2009; Hardy, 2001). Financial problems can act as significant stressors upon families, and Conger et al. (1992; 1993) suggest that economic pressures negatively impact upon parenting skills, causing greater conflict between the parent and child, which can potentially lead to more aggressive sibling relationships.

Despite the large volume of research on peer aggression or bullying, few studies have examined links between sibling and peer forms of aggression. Some overlap between sibling and peer aggression has been found (Duncan, 1999b; Menesini et al., 2010; Wolke & Samara, 2004; Wolke & Skew, 2012), however, it is not clear whether children who are victimised or perpetrate aggression towards their siblings will adopt similar behaviour with their peers.

The aims of the present study were twofold. Firstly, overall prevalence and associations between sibling aggression and a range of individual and household characteristics, were examined. Identifying how sibling aggression relates to these characteristics may assist in explaining its causes and contribute towards the development of intervention strategies. Secondly, little research has identified the link between sibling and peer forms of aggression. The study therefore investigated whether sibling aggression showed a homotypic (same behaviour, i.e. sibling

aggressor is most likely a school bully) or heterotypic (different roles) relationship to peer aggression (bullying).

## **9.2 Methods**

### **9.2.1 Sample**

This study used data from Wave 1 of Understanding Society, a longitudinal household panel survey conducted annually in the United Kingdom. Detailed descriptions of the methodology can be found elsewhere (Buck & McFall, 2012). Wave 1 data were collected over a period of two years, between January 2009 and December 2010, using multiple instruments (outlined in Chapter 7). One member of the household completed a household interview and enumeration grid; every household member aged 16 or above completed an individual adult interview and self-completion questionnaire, and all youths aged between 10 and 15 living in the household were asked to complete a youth self-completion questionnaire. All participants provided informed consent, and ethical approval for the study was granted by the University of Essex.

In total, 30,169 households responded to the survey, including 3,656 households with youths eligible to answer the youth questionnaire. Seventy-four percent of 10 to 15 year olds completed the youth questionnaire to give a total sample of 4,899 respondents. Youths who did not have any siblings (N=662, 13.5%) were excluded from the analysis, giving a final sample size of 4,237 10 to 15 year old participants (Mean age = 12.52, 49.3% male).

## **9.2.2 Measures**

### **9.2.2.1 Sibling Aggression**

*Sibling aggression* was measured using a series of questions which identified the types of aggression children had been involved in, as perpetrator and victim, over the past six months (adapted from Wolke & Samara, 2004). Four types of sibling aggression were considered: physical aggression, stealing, verbal abuse and teasing. To identify victims of sibling aggression, children were asked “How often do any of your brothers or sisters do any of the following to you at home?” with the options “hit, kick, or push you” (physical), “take your belongings” (stealing), “call you nasty names” (verbal) and “make fun of you” (teasing). Four response categories determined the frequency of each option: never; not much (1-3 times in last 6 months); quite a lot (more than 4 times in the last 6 months); a lot (a few times every week). To identify perpetrators of sibling aggression, children were asked “How often do you do any of the following to your brothers or sisters at home?” with the same options and response categories mentioned above. Composite measures of sibling aggression were constructed by combining items into two scales, which measured the severity of the youth’s involvement. Individual scores for the four items on victimisation (coded from 0-3) were summed to create a scale ranging from 0 (no sibling victimisation) to 12 (most severe sibling victimisation) (Cronbach’s  $\alpha = 0.81$ ), and then standardised through conversion to z-scores (Mean: 0; SD: 1). Similarly, items for sibling perpetration were totalled (Cronbach’s  $\alpha = 0.81$ ) and converted to z-scores.

### **9.2.2.2 Demographic, Family and Socioeconomic Factors**

To identify factors associated with sibling aggression, victimisation and perpetration scales were compared across a range of personal and family characteristics including age, sex, sibling and household composition, parent-child relationships, and socioeconomic background.

Measures of sibling and household composition included the number (one or more siblings), and sex (brothers, sisters or both) of participants' siblings, birth order (eldest, middle/twin or youngest child), and the number of natural parents youths lived with at home (one or both natural parents). Parent-child relationships were measured using both youth and parent reports. Two scales in the youth questionnaire assessed positive parent relationships (3 items: whether youths talked to their mother about things that mattered, whether they spoke to their father about things that mattered, and whether they felt supported by their family, Cronbach's  $\alpha = 0.55$ ), and negative parent relationships (2 items: how often youths quarrelled with their mother, and how often they quarrelled with their father; Cronbach's  $\alpha = 0.62$ ). For youths who lived with both parents, the mean of both parents' scores was used, while in single parent families, children provided data for just one parent. Parent report scales measured supportive parenting behaviour (how often praise child, how often hug child, how often talk about important matters with child, frequency of leisure with child; Cronbach's  $\alpha = 0.79$ ), and harsh parenting behaviour (how often shout at child, how often quarrel with child, how often spank or slap child; Cronbach's  $\alpha = 0.81$ ). Major caretaker scores (usually the mother, 90.0%) on parenting behaviour were used in the analysis.

Measures of the household economic situation included income in quintiles (derived from the gross household income in the month prior to the survey, see Table 6 for distribution), income poverty (adjusted income below 60% of the gross monthly income median), and financial stress (sum of three items identifying whether households were behind with their rent/mortgage, council tax, or bills) (Berthoud, 2011). Parent's qualification was defined as the highest level of education achieved by either the mother or father within the household (University degree, A-level or similar, GCSE or equivalent, and no qualifications). Two measures of deprivation were included: The Child Material Deprivation Index (CMDI) which used nine questions to identify the level of deprivation experienced by youths (Willitts, 2006), and ownership of consumer items, calculated using the total sum of thirteen key consumer items owned by a household (e.g. television, washing machine), dichotomised as less than/more than the mean ( $M = 10.4$  items owned).

### **9.2.2.3 School Bullying**

Six items in the youth questionnaire assessed involvement in school bullying, a measure which is widely used to describe aggression among school children (Smith, 2011). Three questions identified whether youths were bullied by their peers; two of these were adapted from the Peer and Friendship Interview (Schreier et al., 2009), and measured physical bullying (How often do you get physically bullied at school, for example getting pushed around, hit or threatened, or having belongings stolen?), and relational bullying (How often do you get bullied in other ways at school such as getting called names, getting left out of games, or having nasty stories spread about you on purpose?). The third item was incorporated as part of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001), and asked participants whether other children or young people picked on or bullied them. The two questions on

physical and relational bullying were measured using a four point scale of 0 ‘Never’, 1 ‘Not much (1-3 times in last 6 months)’, 2 ‘Quite a lot (more than 4 times in last 6 months)’ and 3 ‘A lot (a few times every week)’, while the SDQ question used a three point scale of 0 ‘Not true’, 1 ‘Somewhat true’, and 2 ‘Certainly true’. The three items showed good internal consistency (Cronbach’s  $\alpha = 0.79$ ) and were combined into a single dichotomous measure representing bullying by peers at school. Children who reported being either physically or relationally bullied ‘quite a lot’ or ‘a lot’, or who had responded ‘certainly true’ to the SDQ question were classified as victims of bullying (coded as 1); all other children were classed as non-victims (coded 0).

Bullying perpetration was measured similarly, using two questions on physical or relational bullying from the Peer and Friendship Interview, and one question from the SDQ which asked whether “they fought a lot, and could make people do as they wanted”. The three items showed satisfactory internal consistency (Cronbach’s  $\alpha = 0.65$ ), and were combined into a single measure of bullying perpetration. Bullies (coded as 1) were identified as children who reported physically or relationally bullying others ‘quite a lot’ or ‘a lot’, or who had responded ‘certainly true’ to the SDQ question. All other children were classified as non-bullies (coded 0). The two dichotomous measures of school victimisation and bullying perpetration were used to define four distinct roles in school bullying: non-involved (were neither bullies nor victims), victim (were victims only), bully (were bullies only), and bully-victim (were both bullies and victims).

### **9.2.3 Statistical Analysis**

All analyses were conducted using IBM SPSS Statistics version 19. Chi-squared tests measured age and sex differences in the prevalence of sibling aggression (as victim and perpetrator) according to type (physical, stealing, verbal and teasing) (Table 5).

Linear regression models identified the association between sibling aggression (using standardised victimisation and perpetration scores) and family and household factors (divided into four domains: demographic characteristics, family and sibling composition, parent-child relationships, and socioeconomic status: Table 6). Effect sizes which describe the relationship between each domain and sibling aggression are reported using the  $R^2$  statistic. The relationship between peer and sibling aggression was assessed using logistic regression models (Table 7), which compared standardised sibling victimisation and perpetration scores across role in school bullying (victim, bully or bully-victim vs non-involved). Additionally, a sibling victim by sibling perpetrator interaction term was included. Each of these models controlled for demographic characteristics, family/sibling composition, parent-child relationships and socioeconomic status.

**Table 5** Frequency of Sibling Aggression and Distribution by Age and Sex

<b>Victims of sibling aggression</b>				
	<b>Physical</b>	<b>Stealing</b>	<b>Verbal</b>	<b>Teasing</b>
<b>Frequency N(%)</b>	1,201 (28.1)	731 (17.1)	1,130 (26.5)	1,004 (23.5)
<b>Sex N(%)</b>				
Males	615 (51.2)	309 (42.3)	565 (50.0)	506 (50.4)
Females	586 (48.8)	422 (57.7)	565 (50.0)	498 (49.6)
<i>Sig (<math>\chi^2</math>)</i>	<i>NS</i>	<i>0.001</i>	<i>NS</i>	<i>NS</i>
<b>Age Range N(%)</b>				
Aged 10-12	698 (58.1)	363 (49.7)	587 (51.9)	499 (49.7)
Aged 13-15	503 (41.9)	368 (50.3)	543 (48.1)	505 (50.3)
<i>Sig (<math>\chi^2</math>)</i>	<i>0.001</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
<b>Perpetrators of sibling aggression</b>				
	<b>Physical</b>	<b>Stealing</b>	<b>Verbal</b>	<b>Teasing</b>
<b>Frequency N(%)</b>	871 (20.4)	425 (9.9)	868 (20.3)	836 (19.6)
<b>Sex N(%)</b>				
Males	480 (55.1)	180 (42.4)	479 (55.2)	454 (54.3)
Females	391 (44.9)	245 (57.6)	389 (44.8)	382 (45.7)
<i>Sig (<math>\chi^2</math>)</i>	<i>0.001</i>	<i>0.002</i>	<i>0.001</i>	<i>0.001</i>
<b>Age Range N(%)</b>				
Aged 10-12	478 (54.9)	191 (44.9)	431 (49.7)	369 (44.1)
Aged 13-15	393 (45.1)	234 (55.1)	437 (50.3)	467 (55.9)
<i>Sig (<math>\chi^2</math>)</i>	<i>0.001</i>	<i>0.04</i>	<i>NS</i>	<i>0.001</i>

### 9.3 Results

Overall, 45.8% of youths had been victims of sibling aggression (N = 1,856), while 35.6% (N = 1,440) had perpetrated aggressive behaviour towards their siblings over the last 6 months. Table 5 illustrates the frequency of victimisation and perpetration according to type of sibling aggression. Physical aggression, verbal aggression and

teasing were the most commonly reported forms of victimisation and perpetration; fewer reported stealing their sibling's belongings. No significant sex differences were found for overall victimisation; however, females were more often victims of stealing than males. In contrast, overall perpetration of sibling aggression were greater among males (51.7% of males compared to 48.3% of females,  $\chi^2 = 4.824$ ,  $p < 0.05$ ), and males more often engaged in physical aggression, verbal abuse, and teasing, but less often stole belongings. According to age group, younger children were more often victimised by siblings overall (52.5% of 10-12 year olds versus 47.5% of 13-15 year olds,  $\chi^2 = 12.17$ ,  $p < 0.001$ ), but also experienced more physical aggression. No differences were found for perpetration of aggression (48.8% versus 51.2%), however younger children were more likely to perpetrate physical aggression, while older children were more often teased or stole siblings' belongings.

**Table 6** Demographic and Family Factors Associated with Sibling Aggression (N=4237)

	Sibling Victimisation		Sibling Perpetration	
	$\beta$ (SE)	Beta	$\beta$ (SE)	Beta
<b>Household composition</b>				
<u>Number of siblings</u>				
One sibling (N=2058)		<i>Reference</i>		<i>Reference</i>
Two or more siblings (N=2179)	<b>0.24 (0.049)</b>	<b>0.116**</b>	<b>0.17 (0.049)</b>	<b>0.082**</b>
<u>Sex of siblings</u>				
Brothers (N=1482)		<i>Reference</i>		<i>Reference</i>
Sisters (N=1459)	<b>-0.11 (0.039)</b>	<b>-0.052*</b>	<b>-0.08 (0.039)</b>	<b>-0.038*</b>
Both (N=1296)	<b>-0.17 (0.059)</b>	<b>-0.065*</b>	-0.11 (0.060)	-0.045
<u>Position in family</u>				
Youngest sibling (N=1452)		<i>Reference</i>		<i>Reference</i>
Middle/Twin sibling (N=1167)	-0.03 (0.057)	-0.009	0.06 (0.057)	0.024
Eldest sibling (N=1618)	<b>0.10 (0.039)</b>	<b>0.051*</b>	<b>0.10 (0.039)</b>	<b>0.049*</b>
<u>Parents lived with</u>				
Both natural parents (N=1808)		<i>Reference</i>		<i>Reference</i>
One natural parent (N=2429)	0.05 (0.035)	0.026	0.04 (0.035)	0.019
$R^2$		<b>0.014</b>		<b>0.009</b>

	Sibling Victimization		Sibling Perpetration	
	$\beta$ (SE)	Beta	$\beta$ (SE)	Beta
<b>Parent-child relationships</b>				
Positive relationship (child report)	<b>-0.08 (0.007)</b>	<b>-0.170**</b>	<b>-0.07 (0.007)</b>	<b>-0.157**</b>
Negative relationship (child report)	<b>0.10 (0.009)</b>	<b>0.183**</b>	<b>0.119 (0.009)</b>	<b>0.215**</b>
Supportive parenting (adult report)	0.01 (0.009)	0.018	-0.01 (0.009)	-0.006
Harsh parenting (adult report)	<b>0.09 (0.008)</b>	<b>0.180**</b>	<b>0.08 (0.008)</b>	<b>0.154**</b>
$R^2$		<b>0.117</b>		<b>0.118</b>
<b>Socioeconomic Factors</b>				
<u>Parent's qualifications</u>				
<i>No qualifications</i> (N=487)		<i>Reference</i>		<i>Reference</i>
GCSE (N=1115)	<b>0.12 (0.058)</b>	<b>0.053*</b>	<b>0.13 (0.059)</b>	<b>0.056*</b>
A-level (N=1442)	0.11 (0.058)	0.050	<b>0.12 (0.058)</b>	<b>0.056*</b>
<i>Degree</i> (N=1054)	0.10 (0.062)	0.045	<b>0.14 (0.063)</b>	<b>0.062*</b>
<u>Household Income in quintiles</u>				
<i>1</i> (<£1610) (N=768)		<i>Reference</i>		<i>Reference</i>
2 (£1610-2401) (N=850)	-0.12 (0.107)	-0.048	-0.17 (0.107)	-0.066
3 (£2401-3395) (N=859)	-0.16 (0.119)	-0.062	-0.18 (0.120)	-0.073
4 (£3395-4971) (N=869)	-0.18 (0.120)	-0.075	<b>-0.25 (0.120)</b>	<b>-0.100*</b>
5 (>£4971) (N=891)	-0.11 (0.121)	-0.043	-0.165 (0.121)	-0.068

	Sibling Victimisation		Sibling Perpetration	
	$\beta$ (SE)	Beta	$\beta$ (SE)	Beta
<u>Income Poverty</u>				
Poor (N=881)		<i>Reference</i>		<i>Reference</i>
Not Poor (N=3356)	<b>0.22 (0.107)</b>	<b>0.088*</b>	0.18 (0.107)	0.072
<u>Material Deprivation</u>				
High deprivation (N=1786)		<i>Reference</i>		<i>Reference</i>
Low deprivation (N=2427)	0.02 (0.037)	0.009	0.03 (0.037)	0.015
<u>Consumer Items owned</u>				
<11 consumer items (N=1891)		<i>Reference</i>		<i>Reference</i>
11+ consumer items (N=2329)	<b>0.07 (0.035)</b>	<b>0.034*</b>	0.054 (0.035)	0.027
<u>Financial Stress</u>				
Any financial stress (N=1124)		<i>Reference</i>		<i>Reference</i>
No financial stress (N=3058)	<b>-0.08 (0.040)</b>	<b>-0.034</b>	<b>-0.09 (0.040)</b>	<b>-0.040*</b>
	<b><math>R^2</math></b>	<b>0.007</b>	<b>0.005</b>	

1) Bold indicates level of significance (\*\* =  $p < 0.001$ ; \* =  $p < 0.05$ )

2)  $R^2$  indicates effect size for each set of factors: Demographics, sibling/family composition, parent-adolescent relationships and socioeconomic factors. For small effects  $R^2 = 0.02$ ; for medium effects  $R^2 = 0.13$ ; for large effects  $R^2 = 0.26$

Table 6 identifies associations between composite measures of sibling aggression and household and family characteristics. Victimization by siblings was associated with being the eldest child in the family, having two or more siblings, and living in families who experienced poverty or financial stress. Victimization was also linked to higher levels of harsh parenting and poor relationships with parents. In contrast, supportive parenting reduced the likelihood of sibling victimization. Perpetration of sibling aggression was also associated with being the eldest child, and was more common in families with three or more children. In addition, greater perpetration was observed among children with moderately or highly educated parents, and among those who experienced harsher parenting and reported poor relationships with their parents.

Table 7 depicts the relationship between standardised measures of sibling aggression and children's roles in school bullying. Involvement in sibling aggression was strongly associated with victim, bully and bully-victim roles at school. With each increase of one standard deviation on the sibling victimisation scale, the odds of being a victim of bullying at school increased by 69% (OR = 1.69, 95% CI = 1.38-2.07). For the sibling perpetration scale, a rise of one standard deviation increased the odds of being a bully at school by 163% (OR = 2.63, 95% CI = 1.69-4.09), and of being a bully-victim by 244% (OR = 3.44, 95% CI = 1.27-9.29).

**Table 7** Association between Sibling Aggression and Peer Bullying (Odds Ratios and 95% Confidence Intervals)

	Sibling Aggression		
	Victimisation	Perpetration	Interaction (Victimisation x Perpetration)
<b>Peer Bullying</b>			
Victim	<b>1.69 (1.38-2.07)</b>	0.90 (0.68-1.19)	0.82 (0.60-1.13)
Bully	0.72 (0.39-1.35)	<b>2.63 (1.69-4.09)</b>	1.00 (0.55-1.82)
Bully-Victim	2.05 (0.72-5.80)	<b>3.44 (1.27-9.29)</b>	0.44 (0.13-1.44)

\*Controlled for the following potential confounds: demographic characteristics, family and sibling composition, parent-child relationships and socioeconomic factors

<sup>1</sup> Bold indicates significant associations

## 9.4 Discussion

Firstly, this study shows that aggression among siblings is widespread, with over one third of youths regularly being victimised or perpetrating aggression towards their siblings. The findings are consistent with prevalence rates found in other large studies (Button & Gealt, 2010; Finkelhor et al., 2006; Radford et al., 2013; Wolke & Skew, 2012), and illustrate the range of aggressive interactions that occur between siblings, all of which can have a harmful impact (Tucker, Finkelhor, Turner, et al., 2013). Using multiple measures of demographic, family and socioeconomic characteristics, potential correlates of sibling aggression were identified. Parenting characteristics showed a moderate association with sibling aggression: however, demographic or socioeconomic characteristics were only weakly related. Secondly, the findings indicated a moderate to strong homotypic relationship between sibling

aggression and peer bullying. Victimization by siblings was linked to being bullied by peers, and children who perpetrated aggression towards siblings more often bullied others at school (as bully and bully-victim). The findings add support to the small number of studies which have previously shown links between sibling aggression and school bullying (Duncan, 1999b; Menesini et al., 2010; Wolke & Samara, 2004).

Many children experienced sibling aggression: almost one half were victimised, and over one third perpetrated aggressive behaviour towards their siblings. Consistent with previous research, physical and verbal aggression were most often reported (Button & Gealt, 2010; Duncan, 1999b; Wolke & Samara, 2004); fewer experienced property-based aggression such as stealing belongings (Tucker, Finkelhor, Shattuck, et al., 2013).

After combining measures into a composite scale of sibling aggression, associations were found with a range of individual and household factors. Consistent with previous findings, both age and sex were linked to greater rates of sibling aggression (Button & Gealt, 2010; Eriksen & Jensen, 2006; Tucker, Finkelhor, Shattuck, et al., 2013). Males were more often perpetrators of sibling aggression, while younger children were more often involved in physical aggression, as victims and perpetrators. Structural household characteristics, including number and sex of siblings, as well as birth order were also linked with greater rates of sibling aggression.

Of all the factors considered, parenting characteristics were most strongly linked with sibling aggression. Poor relationships with parents and harsh parenting behaviour predicted greater sibling aggression, while supportive parenting and good

relationships were associated with reduced levels of aggression. Negative parenting characteristics, including the use of harsh discipline, insecure attachment, and high levels of conflict have all been linked with greater physical aggression or hostility between siblings (Hoffman, Kiecolt, & Edwards, 2005; Updegraff et al., 2005; Volling & Belsky, 1992), while in contrast, supportive parenting, characterised by facilitative and affectionate behaviour, can increase sibling affectivity and prosocial behaviour (Brody, 1998; Volling & Belsky, 1992).

The association between sibling aggression and socioeconomic status was less clear. Sibling aggression was not related to poverty, and was more likely to occur among middle-to-high income families. Despite this, greater rates of sibling aggression were found in households that experienced financial difficulties. While overall economic level may not play an important role, financial stress does appear to contribute towards the likelihood of sibling aggression. Conger et al. (1992), suggested that financial pressure can have an indirect influence on rates of sibling aggression by negatively impacting parenting behaviour. Both the present study, as well as Eriksen and Jensen (2006) found that measures of family disorganisation such as physical aggression and harsh discipline predicted sibling aggression more strongly than economic characteristics; thus parenting behaviour may moderate the association between financial stress and sibling aggression. Among all correlates considered, parenting characteristics were by far the most strongly associated with rates of sibling aggression, indicating that changing parenting behaviour may be the most effective route for tackling sibling aggression.

After controlling for a large range of potential confounding factors, sibling aggression showed a moderate to strong association with involvement in school bullying. Increasing scores on sibling victimisation significantly increased the odds

of peer victimisation, while perpetrators at home were more likely to report bullying peers, or to be school bully-victims. This suggests homotypic stability of victim and aggressor roles, whereby behaviour is carried over between the home and school environment. These findings are consistent with previous research (Duncan, 1999b; Menesini et al., 2010; Wolke & Samara, 2004), suggesting similarities between sibling aggression and bullying at school. In support of this, children who have positive sibling relationships have been found to be better adjusted at school (Stormshak, Bellanti, & Bierman, 1996), while children who show high levels of conflict with siblings are more likely to behave aggressively towards their peers (MacKinnon-Lewis et al., 1994; McCoy, Brody, & Stoneman, 1994). The findings indicate an association rather than a causal relationship: however, experimental research has found that sibling aggression among young children is predictive of bullying peers in a laboratory setting a year later (Ensor et al., 2010). This indicates that patterns learned at home transfer to relationships in the peer setting. A key implication of this finding is that school-based anti-bullying programs may need to take into account the home environment, and sibling relationships in particular, if they are to be effective.

This study has a number of strengths, including its large sample size, the use of validated measures, and the range of correlates considered. Despite this, there are a number of limitations. Firstly, the study used an inclusive definition of sibling aggression, which considered a wide variety of behaviour, but did not take into account concepts such as severity or intention. There is continuing debate over how sibling aggression should be defined and operationalised (Naylor, Petch, & Williams, 2011), and thus perceptions of what sibling aggression is, and the behaviour it involves, can differ greatly. As part of a broadly focused longitudinal study,

budgetary constraints and restrictions on the survey length limited the amount of data that could be obtained on sibling aggression. As such, the findings are not intended to resolve major definitional and operational issues; rather they provide an indication of the range of aggressive interactions that occur between siblings, and offer an insight into how household characteristics and peer relationships relate to more general forms of sibling aggression. Secondly, when considering correlates of sibling aggression, it is important to recognise that the data are cross-sectional, and do not indicate causal relationships, either for family or household characteristics, or for the relationship with peer bullying. This will be resolved over future waves of data collection (Kraemer et al., 2001). Thirdly, scales relating to peer bullying perpetration and negative relationships with parents showed low internal consistency. Although 0.7 is seen as the traditional cut-off point, alpha scores of approximately 0.6 are generally acceptable (Moss et al., 1998). The low alpha values obtained in this study are likely to result from the small number of items used in each scale. Finally, although a range of potential confounds were controlled, there is always the possibility that differences in sibling aggression were due to residual confounds not included in the analysis.

Sibling aggression is a highly prevalent form of intra-familial aggression (Radford et al., 2013), which is manifested through a range of physical, verbal, and psychological behaviour. Household and family characteristics show mostly weak links with sibling aggression, however, poor parenting and negative parent-child relationships are moderately associated, and may be the most effective route for family-based intervention strategies (Bowes et al., 2013; Sapouna & Wolke, 2013). Involvement in sibling aggression is also strongly linked with bullying at school, whereby aggressive behaviour transfers between the home and school environment. The strength of this

association indicates that intervention strategies, in either the home or school, must take into account both sibling and peer relationships. The serious adverse long term impacts of school bullying on health and adult adaptation (Copeland et al., 2013; Wolke, Copeland, et al., 2013; Wolke, Lereya, et al., 2013) are well known, and the cumulative experience of sibling aggression may further worsen outcomes for children and adolescents and thus requires future study. At present sibling aggression is poorly understood, but its strong association with school bullying, and the potentially debilitating effect it can have on children's mental and physical outcomes, indicates a clear need for further research which can help parents and their offspring reduce inter-sibling aggression.

## Chapter 10 Ethnicity and Bullying Involvement in a National UK Youth Sample

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**Objectives:** This study investigated ethnic differences in bullying involvement (as victim and bully) among a UK wide sample of adolescents, controlling for potential confounders, including age, sex, economic situation, family structure and parent-adolescent relationships.

**Methods:** 4,668 youths, aged 10 to 15, who participated in Understanding Society were assessed for bullying involvement. Binary logistic regression models were used to estimate ethnic differences across bullying roles while controlling for potential confounders.

**Results:** Overall, ethnic minority youth were not more likely to be victims; African boys and girls were significantly less likely to be victimised than same sex White youths. Pakistani and Caribbean girls were significantly more likely to have bullied others compared to White girls.

**Conclusions:** Further research is necessary to explore why Pakistani and Caribbean girls may be more often perpetrators of bullying than girls in other ethnic groups.

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## 10.1 Introduction

Bullying is characterised by aggressive behaviour, engaged in repeatedly, by an individual or group of peers with more, actual or perceived, power than the victim (Olweus, 1993). The aggressive behaviour may be overtly physical, verbal or relational (Nansel et al., 2001). Peer victimisation or bullying perpetration in childhood is associated with, and a precursor of, a range of psychosomatic (Gini & Pozzoli, 2009) and mental health problems (Arseneault et al., 2010) including suicide ideations and behaviour (Fisher et al., 2012; Winsper et al., 2012). Decreased school performance (Woods & Wolke, 2004) or involvement in crime (Ttofi et al., 2011) have also been reported as consequences of bullying.

Demographic characteristics such as age and sex have emerged as significant risk factors of bullying behaviour. Among adolescents, bullying victimisation steadily declines with age, while bullying perpetration slightly increases (Smith et al., 1999). Furthermore, boys are more often victims and perpetrators of bullying than girls (Nansel et al., 2001). Ethnicity is another key demographic factor that may contribute to exposure to peer victimisation; however, there is continuing debate over whether rates of bullying differ between ethnic groups.

Small sample studies in the UK which compared single or mixed ethnic minority groups to majority White children have found no difference in the prevalence of bullying among ethnic groups (Durkin et al., 2012; Eslea & Mukhtar, 2000; Monks et al., 2008; Moran et al., 1993). In contrast, European studies comparing immigrant

and native-born children find immigrant children are more likely to report being bullies or victims (Fandrem et al., 2009; Verkuyten & Thijs, 2002; von Grunigen et al., 2010), although this may be due to other contributing factors (Verkuyten & Thijs, 2002; von Grunigen et al., 2010). Despite this, other studies have found no overall difference (Monks et al., 2008), or more bullying among native born children (Strohmeier et al., 2008). Large scale studies in the United States have suggested that African American children are less likely to be victimised than those from other ethnic groups (Hanish & Guerra, 2000; Sawyer et al., 2008; Spriggs et al., 2007), however, children from ethnic minority groups appear more likely to participate in bullying others (Carlyle & Steinman, 2007; Nansel et al., 2001; Wang et al., 2009). The findings notably differ between studies, and this may result from the use of differing sampling methods; for example research in the US mostly employed large-scale representative surveys, whereas European studies tend to rely on smaller classroom or school-based convenience samples (Durkin et al., 2012). Additionally, environmental differences between ethnic groups may play a contributing role towards their involvement, but few studies take this into account.

This study investigated whether there were differences in bullying involvement (as victim and bully) according to ethnicity in a UK wide sample of adolescents. While other demographic characteristics have been repeatedly researched, few studies have explored the relationship between ethnicity and bullying; thus, it is not clear whether ethnic minority children are more likely to be bullied or to engage in bullying at school. Building on previous research, this representative UK household study identified ethnic differences in bullying victimisation and perpetration, and examined whether observed differences in bullying continued to be present when controlling

for potential confounders, specifically age, sex, economic situation, parental qualifications, family structure and parent-adolescent relationships.

## **10.2 Method**

### ***10.2.1 Sample***

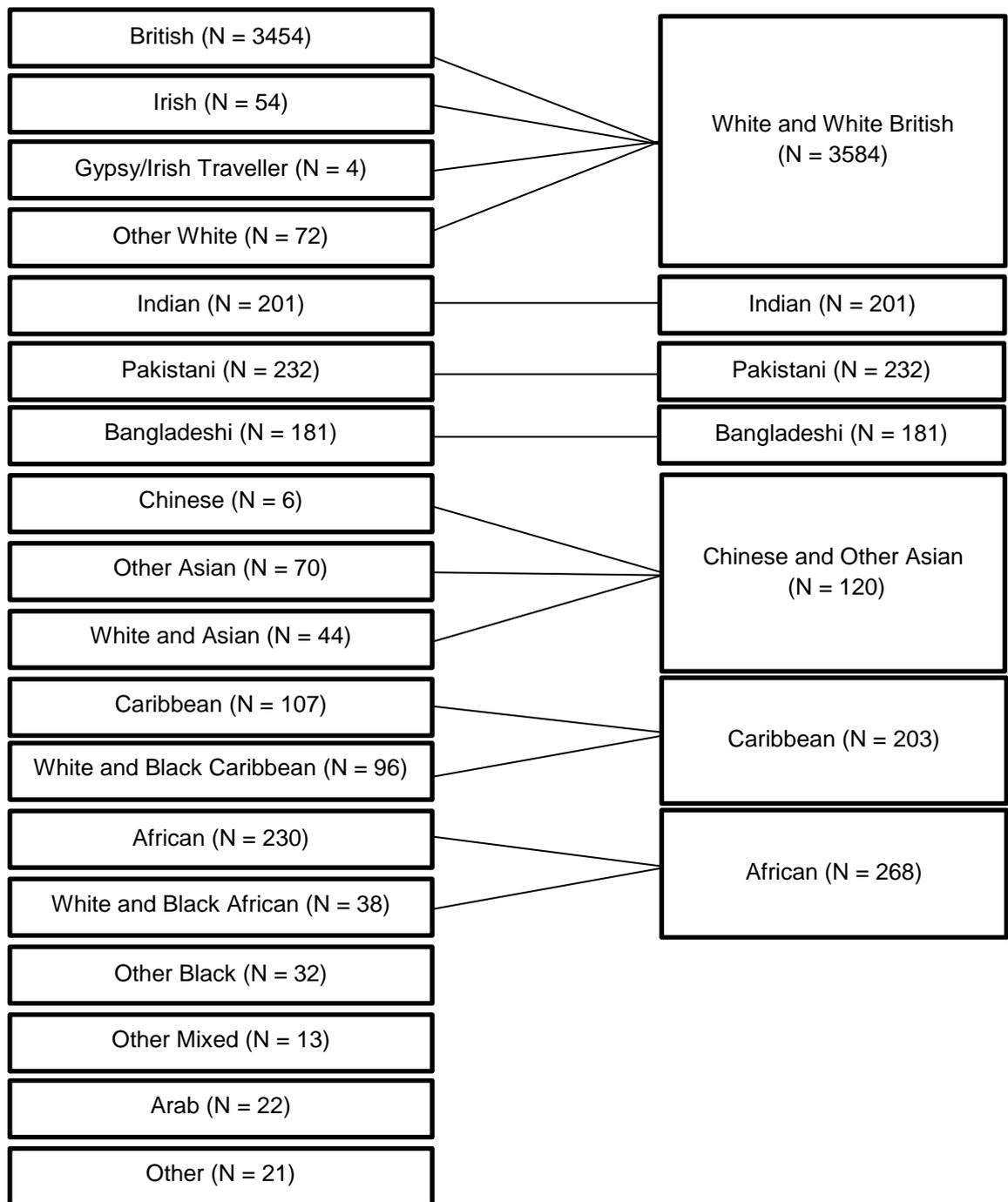
This study used data from Understanding Society, a longitudinal household panel survey in the United Kingdom (England, Wales, Scotland and Northern Ireland). Data from Wave 1 comprised two samples; a general population sample, and an ethnic minority boost sample which aimed to recruit adults from the five largest ethnic minority groups in the UK: Indian, Pakistani, Bangladeshi, Caribbean and African. Ethical approval for the study was granted by the University of Essex, and Wave 1 data collection was carried out between January 2009 and January 2011. Multiple instruments were used: One member of the household completed a household interview and enumeration grid, every household member age 16 or above completed an individual adult interview and self-completion questionnaire, and all youths aged between 10 and 15 responded to a youth self-completion questionnaire. All adults provided informed consent before responding to the interview and questionnaire. For youth aged between 10 and 15, the interviewer requested oral consent from their parent or guardian for them to complete the self-report questionnaire. Completion of the self-report questionnaire was taken as consent by the youth. All participants were free to withdraw from the study at any time.

At Wave 1, data were available for 30,169 households, including 3,656 households with youths aged 10 to 15. Overall, 74 per cent of 10 to 15 year olds completed the youth questionnaire, giving a total sample of 4,899 respondents. As well as being somewhat lower among the ethnic minority boost sample, the response rate was

slightly higher among girls than boys and slightly lower among 10-year-olds compared to 11-15-year-olds and among those living in London. Of the 4,899 respondents, 231 were excluded as they lacked data regarding either ethnicity or involvement in bullying, yielding a sample of 4,668 10 to 15 year old respondents (Mean age = 12.51, 49.5% male).

### **10.2.2 Measures**

*The independent variable was youth's ethnicity.* This was measured through the youth self-report questionnaire, using a classification question with single response categories derived from the ethnic identity question in the 2011 national census (ONS, 2012). The question identified eighteen major ethnic groups (see Figure 10), and was developed by the Office for National Statistics to ensure accurate representation of ethnic diversity within the UK (ONS, 2007). Although multiple measures of ethnicity were included in Understanding Society, the census-based classification provided relatively stable ethnic group information, allowing the sample to be classified into mutually exclusive categories, and enabling inter-group comparisons and the identification of ethnic differences (Burton, Nandi, & Platt, 2008). In this study some of the categories were combined to provide a total of seven groups for analysis, and a further four residual categories that were not included in analysis. In this approach, for youth of mixed ethnicity, the minority part of their ethnicity was prioritised in their allocation to one of the groups. Given that the ethnic group question is designed to present self-reported, subjective ethnicity, the responses of the young people themselves to identify their ethnic group were used.



**Figure 10** Flow Chart Showing Identification and Categorisation of Ethnic Groups

For the 544 youths (11.1%) who did not respond to the ethnic classification question, their ethnic group was derived through the self-reported ethnicity of their natural parents. For over half of these cases, data from both natural parents was available (N = 273). If parents were of the same ethnic group (N = 168) the youth's ethnicity was coded similarly. For parents from different ethnic groups, precedence was given to

those from an ethnic minority (e.g. if one parent was British and the other Pakistani, the youth's ethnic group would be recorded as Pakistani). For the remaining half of cases, where ethnic data from only one natural parent was available (N = 249), this ethnic classification was assigned directly to the youth.

Figure 10 shows the seven major ethnic groups included in the analysis: White and White British, Indian, Pakistani, Bangladeshi, Chinese and Other Asian (representing East and South East Asia), Caribbean, and African. Four ethnic categories (Other Black, Other Mixed, Arab and Other; total N: 88) were excluded from the analysis as they each contained less than 50 participants, too few for meaningful statistical comparison.

*The outcome measure was the role of involvement in school bullying (non-involved, victim, bully or bully-victim).* This was assessed using six questions in the youth self-report questionnaire. Victimization was identified if youths met any inclusion criteria among two items on physical or relational victimisation (Schreier et al., 2009; Wolke et al., 2000), and one item from the Strengths and Difficulties questionnaire (SDQ) (Goodman, 2001). Similarly, bullying perpetration was identified as those who met any of the inclusion criteria among two questions on physical or relational bullying perpetration, or one item from the SDQ. Youths who were neither bullied or victimised were coded as 'non-involved', those who were only victimised were classified as 'victims', and those who only took part in bullying others were labelled 'bullies'. A small number of youths (N = 43, 0.9%) were identified as bully-victims; however this group was too small to allow for any meaningful analysis. Although bully-victims exhibit unique social and psychological characteristics that distinguish them from both bullies and victims, they show some similarities to victims in terms of peer relationships (Nansel et al., 2004) and behavioural problems (Arseneault et

al., 2006). For these reasons, bully-victims were coded as victims throughout the analysis.

*Potential confounders* included in the study were: age, sex, parental qualifications, economic situation, family structure and parent-adolescent relationships. *Age* and *sex* were derived from the youth self-report questionnaire. *Parental qualification* was defined as the highest level of education achieved by either the mother or the father within the household (University degree, A-level or similar, GCSE or equivalent, and no qualifications). *Economic situation* consisted of five independent measures: household income (household's gross income in the month prior to the survey, divided into equal quintiles), income poverty (whether a household's adjusted income was below or above 60% of the gross monthly income median) (DWP, 2012), and whether households experienced financial stress (binary measure derived by combining items which asked whether households were behind with their rent/mortgage, council tax, or bills) (Berthoud, 2011). Two measures of deprivation were included. The Child Material Deprivation Index (CMDI) used nine questions (e.g. having enough bedrooms, having birthday parties) to identify the level of deprivation experienced by youths. The index was calculated by assigning 1 to items which the child did not have access to and 0 to those which were owned, could be afforded, or could be accessed if required. Bivariate scores were multiplied by the proportion of households that owned each item, and scores then summed and divided by the highest possible score (i.e. deprived on every item) to create an index ranging from 0 to 1, where 1 represented total deprivation (Willitts, 2006). Ownership of consumer items was additionally used as a measure of deprivation, calculated using the total sum of thirteen key consumer items owned by a household (e.g. television,

washing machine) (Berthoud, 2011), dichotomised as less than/more than the mean ( $M = 10.4$  items owned).

*Family structure* consisted of family size (number of people living in the household), number of siblings, and number of natural parents youths lived with. *Parent-adolescent relationships* were separately reported by youths and parents, using items from the respective self-completion questionnaires. In the youth questionnaire, positive parent-adolescent relationships were measured using three questions (whether youths talked to their mother about things that mattered, whether they spoke to their father about things that mattered, and whether they felt supported by their family; Cronbach's  $\alpha = 0.55$ ), and negative parent-adolescent relationships were measured using two questions (how often youths quarrelled with their mother, and how often they quarrelled with their father; Cronbach's  $\alpha = 0.62$ ). In the adult questionnaire, four questions assessed supportive parenting behaviours (how often praise child, how often hug child, how often talk about important matters with child, frequency of leisure with child; Cronbach's  $\alpha = 0.79$ ), and harsh parenting behaviours through three further questions (how often shout at child, how often quarrel with child, how often spank or slap child; Cronbach's  $\alpha = 0.81$ ). Youth and parent reports showed a significant positive correlation for both supportive ( $r = 0.24$ ,  $p = 0.001$ ) and negative parenting behaviours ( $r = 0.27$ ,  $p = 0.001$ ). This is comparable to correlations between parent and child reports on behavioural problems (Achenbach, McConaughy, & Howell, 1987). Where data was available from both parents, only scores from mothers were used. This ensured consistency with youth from single parent families, among whom 82.6% had data from their mother available, but only 10.9% from their father.

### **10.2.3 Statistical Analysis**

All analyses were conducted using IBM SPSS Statistics version 19. Chi-square tests for categorical variables and analysis of variance to compare means (ANOVA) were used to analyse differences in specified confounders between ethnic groups (Table 8). Age differences in victimisation and bullying perpetration were analysed using multinomial linear regression, with bullying role (non-involved, victim, and bully) as the dependent variable, and age group as the independent variable. To examine ethnic differences across bullying roles, binary logistic regression models were used and odds ratios and 95% confidence intervals are reported (Table 9). Separate analysis was applied for victims (comparing non-involved and victims) and bullies (comparing non-involved and bullies), with ethnic group as the independent variable (dummy coded with White British as the reference category), while controlling for household and family variables. Model A identified crude associations between ethnic group and role in school bullying. Model B repeated the analysis, controlling for age, sex, parental qualifications and economic situation. Model C additionally controlled for family structure and parent-adolescent relationships. Estimating bullying and victimisation through two separate binary regressions increased the flexibility and enhanced the interpretation of the risks associated with either outcome. Further pairwise comparisons between all ethnic groups were conducted using the Bonferroni method, which allowed for multiple comparisons to be performed among uneven groups. As it seemed likely that the factors contributing to victimisation and bullying would vary by sex (Nansel et al., 2001) separate models were computed for girls and boys, with bullying role (Victim vs non-involved, and Bully vs non-involved) as the dependent variable, and ethnic group as the

independent variable. All confounding factors were controlled for when analysing sex differences; odds ratios and 95% confidence intervals are shown in Figure 11.

## **10.3 Results**

### ***10.3.1 Prevalence of Bullying and Age/Sex Differences***

Among all youths, 11.3% (N=536) were victims of bullying, 2.4% (N=114) were bullies, and 0.9% (N=43) were bully-victims (incorporated into the victim group for subsequent analysis). Girls were less likely than boys to be victims (OR = 0.77, 95% CI=0.64-0.92) or bullies (OR = 0.62, 95% CI=0.43-0.91). Examining age differences for bullying, compared to the youngest group (aged 10), youths from all other age groups (from 11 to 15 years old) were less likely to be victims of bullying. No significant differences were found in the likelihood of bullying others between age groups.

### ***10.3.2 Characteristics of the Sample***

Table 8 describes differences between ethnic groups for each of the potential confounders. Participants from minority ethnic groups differed on all potential confounders except age. Ethnic minority youths, with the exception of those of Indian origin, were more likely to come from low-income households, to live below the poverty line, and to more often experience financial stress than White youths. Similarly, ethnic minority participants showed greater levels of material deprivation than the ethnic majority, while also possessing fewer consumer items, and experiencing greater financial stress.

Family structure differed between ethnic groups; Pakistani and Bangladeshi youth tended to have larger families when compared to all other ethnic groups, while Indian, Pakistani, Bangladeshi and other Asian youths were more likely to live with

both of their natural parents than White participants. Those from Caribbean and African families were the least likely to live with both natural parents. Differences were observed in parent-adolescent relationships: Indian and Pakistani youths reported more positive relationships with their parents than other ethnic groups, while White youths and those from the Other Asian category reported more negative relationships. Parent self-reports suggested that White and Caribbean parents had the highest levels of harsh parenting.

### ***10.3.3 Association between Bullying and Ethnicity***

Crude associations between bullying role and ethnic groups were first analysed (Model A), and then repeated, controlling for potential confounding variables of age, sex, parental qualifications and economic situation (Model B) and family structure and parent-adolescent relationships (Model C) (Table 9). Associations were found between ethnicity and victim status across all models only for African youths (Model C: OR = 0.26, 95% CI = 0.13-0.52). Bangladeshi youths (OR = 0.44, 95% CI = 0.23-0.84) were at reduced risk of victimisation once confounding factors had been controlled for (Models B and C). Given their much greater poverty risks, they may have been expected to have higher absolute rates of victimisation; but as introducing the controls demonstrated, once socioeconomic factors were controlled, they had lower rates than otherwise similar majority group children. Indian youths (OR = 0.53, 95% CI = 0.31-0.92) were found to be at reduced risk of victimisation at Model B but not at Model C, once family factors had been controlled for. Pairwise comparisons between all ethnic groups found only African and White youths differed significantly in their reports of victimisation (Bonferroni,  $p < 0.005$ ). Figure 11 shows sex differences in victimisation among ethnic groups. Significant differences compared to white youths of the same sex were observed for African boys (OR =

0.17, 95% CI = 0.05-0.54) and African girls (OR = 0.37, 95% CI = 0.16-0.89), who were both less likely to be victims of bullying than White youths. In contrast, the effect for less victimisation of Bangladeshi boys or girls was only found when both sexes were combined (Table 9), and was no longer statistically significant when the analysis was broken down by sex (Figure 11).

For those who bullied others, across all models both Pakistani (OR = 3.32, 95% CI = 1.65-6.68) and Caribbean (OR = 2.74, 95% CI = 1.25-6.02) youths showed a greater likelihood of bullying others (Table 9). Bangladeshi youths (OR = 2.89, 95% CI = 1.42-5.91) were associated with bullying in Model A, but this was no longer significant once confounding factors had been controlled for. Additional multiple comparisons using the Bonferroni method found no significant differences in bullying perpetration between ethnic groups. Sex differences between ethnic groups for bullying perpetrators are shown in Figure 11. When broken down by sex, no significant differences in bullying perpetration were observed between ethnic minority and ethnic majority boys. However, Pakistani (OR = 6.56, 95% CI = 2.33-18.45) and Caribbean girls (OR = 4.82, 95% CI = 1.63-14.26) were significantly more likely to report that they had bullied others compared to white girls.

**Table 8** Characteristics of the Sample (N = 4668)

	White	Indian	Pakistani	Bangladeshi	Other Asian	Caribbean	African	Sig.*
<b>Demographics</b>								
Ethnic distribution <i>N</i> (%)	3511 (75.2)	197 (4.2)	228 (4.9)	174 (3.7)	116 (2.5)	193 (4.1)	249 (5.3)	
Sex: Males <i>N</i> (%)	1759 (50.1)	112 (56.9)	104 (45.6)	82 (47.1)	64 (55.2)	80 (41.5)	110 (44.2)	0.008
Age <i>M</i> ( <i>SD</i> )	12.5 (1.7)	12.4 (1.7)	12.3 (1.7)	12.6 (1.7)	12.7 (1.7)	12.6 (1.7)	12.3 (1.7)	0.114
<b>Economic Factors</b>								
Highest Educational Qualification <i>N</i> (%)								
<i>Degree</i>	874 (25.5)	62 (32.5)	52 (24.1)	10 (6.1)	31 (27.4)	48 (26.1)	81 (35.2)	0.000
<i>A levels or other higher</i>	1255 (36.7)	80 (41.9)	53 (24.5)	25 (15.2)	36 (31.9)	60 (32.6)	75 (32.6)	
<i>GCSE or similar</i>	986 (28.8)	31 (16.2)	61 (28.2)	55 (33.3)	28 (24.8)	56 (30.4)	29 (12.6)	
<i>No qualifications</i>	307 (9.0)	18 (9.4)	50 (23.1)	75 (45.5)	18 (15.9)	20 (10.9)	45 (19.6)	
Household Income in Quintiles (Gross in £s) <i>N</i> (%)								
1 (<£1610)	596 (17.0)	39 (19.8)	69 (30.3)	44 (25.3)	29 (25.0)	56 (29.0)	86 (34.5)	0.000
2 (£1610-2401)	671 (19.1)	29 (14.7)	59 (25.9)	41 (23.6)	25 (21.6)	46 (23.8)	55 (22.1)	
3 (£2401-3395)	695 (19.8)	39 (19.8)	54 (23.7)	55 (31.6)	27 (23.3)	26 (13.5)	32 (12.9)	
4 (£3395-4971)	766 (21.8)	36 (18.3)	23 (10.1)	17 (9.8)	14 (12.1)	41 (21.2)	42 (16.9)	
5 (>£4971)	783 (22.3)	54 (27.4)	23 (10.1)	17 (9.8)	21 (18.1)	24 (12.4)	34 (13.7)	
Income Poverty: Poor <i>N</i> (%)	685 (19.5)	41 (20.8)	78 (34.2)	53 (30.5)	33 (28.4)	65 (33.7)	93 (37.3)	0.000
Child Material Deprivation Index: High deprivation <i>N</i> (%)	1200 (34.3)	83 (42.6)	149 (65.9)	112 (66.3)	67 (58.3)	108 (56.5)	165 (66.8)	0.000

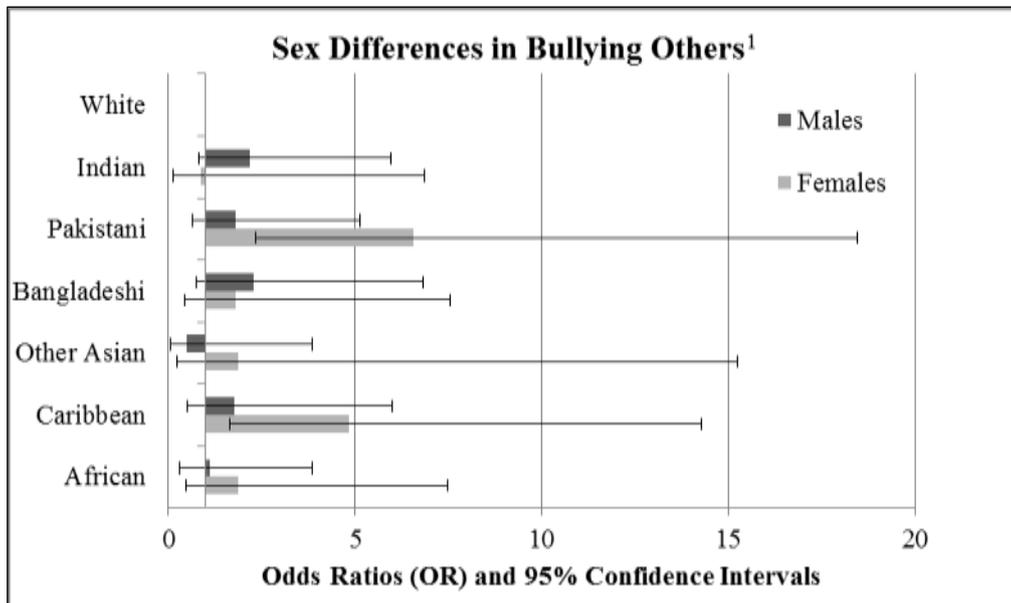
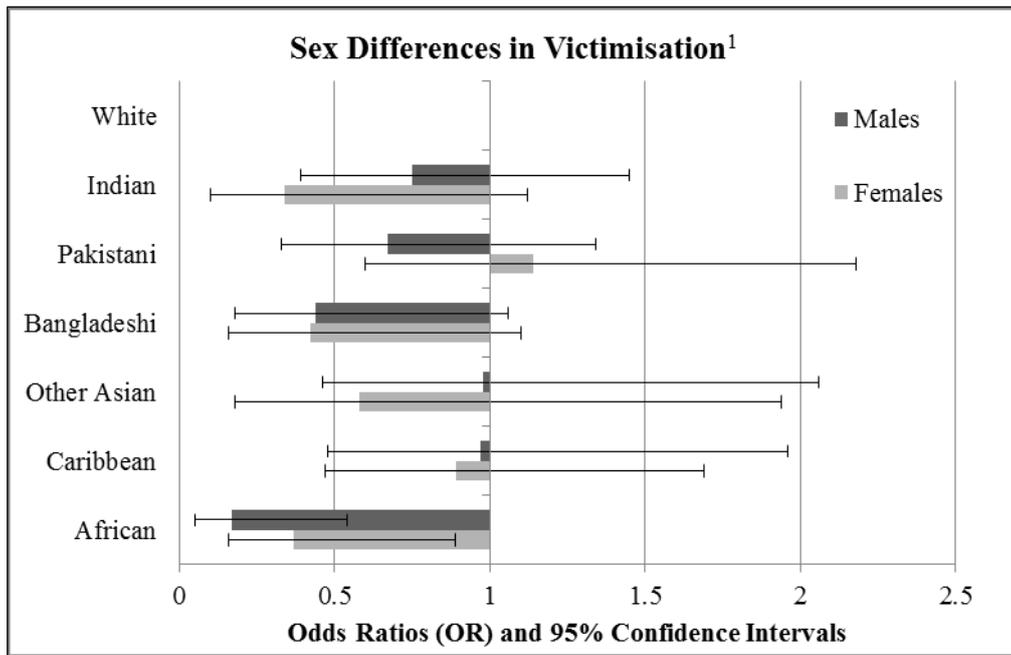
	White	Indian	Pakistani	Bangladeshi	Other Asian	Caribbean	African	Sig.*
Consumer Items: Less than 11 items <i>N (%)</i>	1326 (37.8)	107 (55.2)	159 (70.7)	159 (91.4)	69 (60.5)	98 (50.8)	188 (75.5)	0.000
Financial stress: Any financial stress <i>N (%)</i>	796 (22.9)	40 (20.6)	68 (30.4)	71 (41.0)	41 (36.3)	77 (40.1)	113 (46.1)	0.000
<b>Family Structure</b>								
Natural parents lived with: Both <i>N (%)</i>	1417 (40.4)	122 (61.9)	125 (54.8)	81 (46.6)	58 (50.0)	42 (21.8)	87 (34.9)	0.000
Family size <i>M (SD)</i>	4.2 (1.2)	4.8 (1.2)	5.7 (1.5)	5.9 (1.7)	4.5 (1.4)	4.0 (1.4)	4.9 (2.1)	0.000
Number of siblings: Any <i>N (%)</i>	2992 (85.2)	179 (90.9)	222 (97.4)	163 (93.7)	108 (93.1)	155 (80.3)	223 (89.6)	0.000
<b>Parent-Adolescent Relationships</b>								
Positive relationship (higher = more positive) <i>M (SD)</i>	7.6 (2.2)	8.1 (2.3)	8.1 (2.3)	7.4 (2.4)	8.0 (2.4)	7.0 (2.1)	7.6 (2.3)	0.000
Negative youth-parent relationship (higher = more negative) <i>M (SD)</i>	3.6 (1.8)	3.3 (1.9)	3.1 (1.7)	3.3 (1.9)	3.7 (2.0)	3.3 (1.6)	3.1 (1.8)	0.000
Supportive parenting Adult Reports (higher = more positive) <i>M (SD)</i>	13.7 (1.7)	13.5 (1.7)	13.5 (1.7)	13.3 (1.9)	13.2 (1.8)	13.3 (1.8)	13.6 (1.6)	0.000
Harsh parenting Adult Reports (higher = more harsh) <i>M (SD)</i>	6.9 (1.9)	6.4 (1.9)	6.3 (1.9)	6.6 (2.2)	6.4 (1.9)	7.1 (1.9)	6.2 (1.8)	0.000

\*  $\chi^2$  tests for categorical variables and F tests for continuous variables

**Table 9** Associations between Ethnicity and Bullying Controlling for Potentially Confounding Factors

	<b>Model A:</b> Crude	<b>Model B:</b> Controlling for age, sex, parents education and economic factors	<b>Model C:</b> Additionally controlling for family structure and parent-adolescent relationships
	OR (95% CI)	OR (95% CI)	OR (95% CI)
<b>Victims:</b>	N = 4668	N = 4445	N = 4271
<i>White</i> N = 3511	<b>Reference</b>	<b>Reference</b>	<b>Reference</b>
<i>Indian</i> N = 197	<b>0.57 (0.34-0.97)</b>	<b>0.53 (0.31-0.92)</b>	0.60 (0.34-1.06)
<i>Pakistani</i> N = 228	0.91 (0.60-1.37)	0.72 (0.47-1.12)	0.88 (0.55-1.40)
<i>Bangladeshi</i> N = 174	0.61 (0.36-1.05)	<b>0.40 (0.21-0.74)</b>	<b>0.44 (0.23-0.84)</b>
<i>Other Asian</i> N = 116	0.75 (0.41-1.37)	0.74 (0.40-1.37)	0.82 (0.44-1.54)
<i>Caribbean</i> N = 193	0.88 (0.56-1.37)	0.88 (0.56-1.40)	0.91 (0.57-1.47)
<i>African</i> N = 249	<b>0.33 (0.18-0.59)</b>	<b>0.27 (0.14-0.51)</b>	<b>0.26 (0.13-0.52)</b>
<b>Bullies:</b>	N = 4668	N = 4445	N = 4271
<i>White</i> N = 3511	<b>Reference</b>	<b>Reference</b>	<b>Reference</b>
<i>Indian</i> N = 197	1.67 (0.71-3.89)	1.57 (0.66-3.73)	1.62 (0.66-3.97)
<i>Pakistani</i> N = 228	<b>3.21 (1.74-5.91)</b>	<b>2.88 (1.51-5.50)</b>	<b>3.32 (1.65-6.68)</b>
<i>Bangladeshi</i> N = 174	<b>2.89 (1.42-5.91)</b>	1.92 (0.85-4.35)	1.86 (0.77-4.48)
<i>Other Asian</i> N = 116	0.93 (0.23-3.85)	0.81 (0.19-3.42)	0.80 (0.19-3.42)
<i>Caribbean</i> N = 193	<b>2.90 (1.47-5.73)</b>	<b>2.77 (1.33-5.77)</b>	<b>2.74 (1.25-6.02)</b>
<i>African</i> N = 249	1.53 (0.70-3.38)	1.28 (0.53-3.08)	1.27 (0.50-3.20)

\* Figures in bold text indicate significant associations, i.e. the 95% confidence intervals do not cross 1



<sup>1</sup> Controlling for age, parent's economic situation, family structure and parent-adolescent relationships

**Figure 11** Sex Differences for Bullying Involvement by Ethnic Groups

## 10.4 Discussion

This is the first nationally representative UK study of bullying to explore ethnic group differences. As such it presents fresh evidence on a topic that has previously only been investigated with relatively small, local studies, producing contradictory

results. It also raises areas for further consideration. This study shows that, overall, there is little difference in victimisation or perpetration of bullying across ethnic groups. Nevertheless, involvement in bullying, as either perpetrator or victim, does reveal certain significant differences between specific minority ethnic groups and the majority, even after controlling for potential confounders. African and Bangladeshi youths reported that they were significantly *less* likely to be victimised by peers. In contrast, Caribbean and Pakistani adolescent girls reported bullying others more often when compared to the ethnic majority group, White British girls. The findings contrast with previous research in the UK, which has mostly shown no significant differences in bullying perpetration or victimisation among ethnic groups (Durkin et al., 2012). The results are, however, consistent with population based studies from the US, which found ethnic majority students to be more often victims and less often bullies than minority youths, in particular, African American youths (Wang et al., 2009).

How can these differences in victimisation and bullying perpetration be explained? Firstly, where differences have been found, previous research proposed that it may result from differing home environments and parenting styles between ethnic groups (Spriggs et al., 2007). This study included a range of relevant demographic and economic indices, and measures of parenting styles, with the latter reflecting both parent and youth perspectives. Controlling for this range of factors did not remove ethnic differences in bullying perpetration and victimisation. There is always the possibility of residual confounding, i.e. the differences are due to unmeasured confounders (Fewell, Davey Smith, & Sterne, 2007); however, considering the wide variety of confounders included, this appears unlikely.

A second potential explanation relates to ethnic or cultural differences in the reporting of bullying. African Americans have been found less likely than White students to report experiences of victimisation when using a single-item measure of bullying, but not when using multiple-item, behaviour-based measures (Sawyer et al., 2008). The author of this study hypothesised that ethnic groups differ in their perceptions of bullying; African-Americans may impose a greater stigma on being a victim of bullying than White youth, leading to their tendency to under-report victimisation when using a single measure which contained the word 'bullying'. Lower incidence of victimisation among ethnic minorities in this study may suggest an unwillingness to report experiences of bullying due to the stigma associated with it; as may evidence on the reluctance of minorities to report discrimination, which is experienced as demeaning (Krieger, 2000). However, this study used multi-item measures of bullying and thus should be less liable to unwillingness of reporting victimisation.

A third explanation may relate to normative beliefs about aggression. The degree to which aggression is accepted or condemned through social norms has been found to differ significantly by culture for girls, but not for boys (Österman et al., 1994). Within certain cultural groups, girls have been found to be more accepting of aggression towards peers, and the present study provides some support for these findings. When bullying perpetration was split by sex, Pakistani and Caribbean girls, but not boys, reported more bullying of others, suggesting that aggression by girls may be more accepted within these ethnic groups. However, given gender norms and patterns of parental control around Pakistani girls, this explanation would not appear to fit these girls' behaviour well. While a certain amount has been written on the assertive masculinity of Pakistani boys (Alexander, 2000), as well as on Caribbean

boys, there is no corresponding literature to indicate that Pakistani girls may be more aggressive than their white peers. This makes the finding particularly intriguing.

A fruitful route for unpacking this finding further may be the need for more detailed analysis of the cultural context in which the bullying occurs – and the possibility that this may lead to different explanations of the finding for Pakistani and Caribbean girls. Not only do we not know the ethnicity of the victim in the case of self-reported bullies, we also have little insight into the environment in which it occurs. Eslea and Mukhtar (2000) indicated in their study, that South Asian victims of bullying were most frequently the target of another South Asian group; and we know that Pakistani schoolchildren are relatively highly concentrated, both residentially and even more so in school compared to other minority groups (Burgess, Wilson, & Lupton, 2005). It is also known that girls, as well as boys, use tactics of control to police the behaviour of other girls (Chambers, Tincknell, & Loon, 2004; Lees, 1989). This can become a particularly pressing concern, where gender norms are strict.

Moreover, given the different schools that White, Caribbean and Pakistani girls in our study occupy, the influence of school culture may well play a significant role. That is, there may be different underlying bullying prevalence across different schools, and different normative expectations of girls as well as boys, which foster aggression and bullying. In addition, school leadership has been highlighted as critical in strategies to address pupil bullying (House of Commons Education and Skills Committee, 2007), and such leadership varies systematically across schools. However, studies that have looked at the relationship between school policies and bullying rates found little impact of the former on the latter (Woods & Wolke, 2003). Where policies were strong, these often led to a move from direct to more relational bullying that is more difficult to detect. Nevertheless, an important extension of this

research will be to consider school contextual factors that may either be seen as missing confounders or help to unpack the mechanisms by which different ethnic groups face different, in some ways counterintuitive, experiences of bullying as both victims and perpetrators.

This study has a range of strengths. It is the first to systematically address ethnic differences in bullying perpetration and victimisation in a nationally representative UK sample. It has a large sample size, which includes a boost sample of the major ethnic groups in the UK, and uses adolescent self-report to obtain information about bullying and the adolescent's perspective of parent-adolescent relationships. Self-reports of bullying have been shown to be highly valid and reliable and a good predictor of adverse outcomes associated with bullying (Schreier et al., 2009).

Furthermore, additional information on relationships and economic situation were obtained from adult household members, thus this is a multi-informant study.

Through the use of a representative sample and the inclusion of a range of multi-informant reported confounders, the design of this study is considerably stronger than many previous studies in the field, especially those relying on selected schools.

There are also a number of limitations. The most critical is the lack of contextual information on the neighbourhood or school context in which the bullying takes place. However, future plans to link to school-level data for England may help us to address those issues in part. While ethnic interaction and ethnic classroom mix is more easily studied in school based samples (Stefanek et al., 2011), future linkage to education records such as the Pupil Level Annual School Census (PLASC) will enable researchers to consider crucial information about school composition and examine school quality measures. Second, at this first wave, no information on discrimination and racial abuse was available that may be relevant in explaining

bullying perpetration and justification. Again, this information will be included in future data collection waves. In addition, the specific content of bullying, (i.e. whether it was racist) was not assessed. However, as no differences or even less victimisation for ethnic groups was found, this is unlikely to play a major role. Thirdly, despite the large sample size and robust statistical findings, the number of youth involved in bullying was relatively small. This is of interest in itself given varying estimates of bullying prevalence. For the study of ethnic group differences, it implies that replications of this study will be required to confirm these initial findings. Finally, no information on cultural construction of repeated aggression (bullying) against others was collected; focused qualitative studies may be necessary to explore the different contexts in which bullying takes place among girls, and why this leads to higher rates among Caribbean and Pakistani girls in particular.

In conclusion, considering the ill effects bullying victimisation has on health and suicide incidence (Arseneault et al., 2010; Winsper et al., 2012), alongside well-attested ethnic inequalities in health (Cooper, 2002), this study is reassuring in indicating that ethnic minority youths do not experience more bullying victimisation than the majority group, White British youths. Future research is necessary to replicate and investigate the intriguing finding that Pakistani and Caribbean girls were more often perpetrators of bullying than girls from other ethnic groups.

## Chapter 11 Profiling Roles in School Bullying: Individual, Social and Sociodemographic Characteristics

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**Objectives:** Bullying is a major public health concern which can have lifelong consequences for those involved. A range of risk factors associated with involvement in school bullying have been identified, however it is unclear which of these are most strongly linked with being a victim, bully, or bully-victim.

**Methods:** This study investigated 2,783 adolescents, aged 10-15, who participated in Understanding Society, a UK household panel study. Associations between roles in bullying and a wide range of individual, sociodemographic and social characteristics were first identified using univariate analysis. Multinomial regression analysis was then used to determine which factors were most strongly associated with each role.

**Results:** Distinct profiles were observed; victims were more likely to be younger, male and to display emotional symptoms, less happiness and poor peer relationships. Bullies were more often Asian or Black youth, who exhibited less prosocial behaviour, more conduct problems, and perpetrated aggression against their siblings. Bully-victims shared both sets of characteristics, displaying more emotional symptoms and less happiness, but also more conduct disorder, and greater perpetration of aggression towards siblings.

**Conclusions:** Each role in school bullying is uniquely associated with a distinct psychosocial profile which can be used to identify youth at-risk of bullying. Furthermore, the findings may be used to inform the development of targeted interventions which specifically address the individual and social needs of victims, bullies and bully-victims.

## **11.1 Introduction**

Up to one third of children are involved in bullying, as either bullies, victims or bully-victims (Analitis et al., 2009; Nansel et al., 2001), and when considered alongside the damaging impact on physical and mental health, bullying can be seen as a major public health concern (Srabstein & Merrick, 2013). To reduce or prevent these negative outcomes, it is important that children involved in bullying are identified and provided with the appropriate support. Identifying at-risk youth allows intervention strategies to be implemented at an early stage, either when children first begin engaging in bullying, or before incidents actually occur, thereby limiting the potential damage bullying can cause.

At present, research has identified a range of risk factors and correlates of school bullying, which are associated with children being victimised or bullying others at school. These include: individual characteristics, such as happiness, self-esteem, and behaviour (Bond et al., 2001; Gini, 2008; Seals & Young, 2002; Wild et al., 2004); demographic characteristics, including age, sex, and ethnicity (Cook et al., 2010; Finkelhor et al., 2005; Nansel et al., 2001; Tippett et al., 2013); and family and household factors, such as parenting (Baldry & Farrington, 1998; Lereya, Samara, et al., 2013), sibling relationships (Duncan, 1999a; Tippett & Wolke, 2014a; Wolke &

Samara, 2004), and socioeconomic status (Jansen et al., 2012; Tippett & Wolke, 2014b).

Another potential factor associated with bullying roles may be involvement in social activities. Victims spend a greater amount of time engaging in artistic activities (Elias & Zinsd, 2003; Swearer et al., 2008) and are less likely to interact with others online (Mann, 2009; Ybarra & Mitchell, 2008), while both bullies and bully-victims spend more time watching television than those who are not involved in bullying (Ball et al., 2008; Kuntsche et al., 2006; Sisson et al., 2011; Zimmerman et al., 2005). Aside from these few studies, there is very little research identifying whether bullying is linked to social activities outside of school.

While a wide range of correlates and potential risk factors have been researched, most studies tend to focus on a particular characteristics or set of characteristics, such as parenting or behaviour; there are few studies that consider correlates of school bullying across multiple domains. As a result, relative effect sizes, both within and between domains are incomparable; thus it is unknown if one set of factors, e.g. the home environment, is more closely associated with bullying than another set of factors, e.g. individual characteristics. Research that considers the correlates of school bullying across a range of domains is required, as it will allow the identification of factors that are most strongly related to bullying involvement.

A second issue is the relative lack of research on bully-victims. This group of children exhibit the worst health and social outcomes in both adolescence and adulthood (Arseneault et al., 2010; Copeland et al., 2013), yet in comparison to victims, relatively little is known about them. Specific studies of bully-victims are

needed, as well as research which enables comparisons across all bullying roles, so that correlates and risk factors can be identified.

This study aimed to identify factors and activities associated with roles in school bullying across three domains: individual characteristics, sociodemographic characteristics and social activities. Using a wide range of validated measures, the study enabled the development of a psychosocial profile of victims, bullies and bully-victims, which, in combination with existing literature, may help to identify children who are, or are at risk, of becoming involved in school bullying.

Furthermore, by assessing multiple factors simultaneously, the study identified the relative strength of each correlate, determining those factors that are most strongly associated with school bullying roles.

## **11.2 Methods**

### **11.2.1 Sample**

This study used data from Understanding Society, a longitudinal household panel survey which explored the social and economic circumstances of a nationally representative group of people living in the United Kingdom (England, Wales, Scotland and Northern Ireland). Detailed descriptions of the study and processes of participant recruitment and data collection are available through detailed publications (Buck, McFall 2012) and also on the project website (<https://www.understandingsociety.ac.uk/>). Data from Waves 1 and 2 of the study are used in the present research. Wave 1 data were collected between January 2009 and March 2011, and data for wave 2 were obtained between January 2010 and March 2012. Multiple instruments were used to collect data: One member of the household completed a household interview and enumeration grid; every household member

age 16 or above completed an individual adult interview and self-completion questionnaire, and all youths aged between 10 and 15 responded to a youth self-completion questionnaire. All adults provided informed consent before responding to the interview and questionnaire. For youths, oral consent was first obtained from the parent or guardian and completion of the self-report questionnaire was taken as consent by the youth. Ethical approval for the study was granted by the University of Essex and all participants were informed that they were free to withdraw from the study at any time.

In total 30,169 households fully participated in Understanding Society at Wave 1, which included 4,899 youths aged between 10 and 15 who responded to the youth questionnaire. Of these, 2,116 did not participate at Wave 2, either because they failed to respond (n=1382), or had turned 16 and completed the adult questionnaire instead (n=734). As this study uses both Wave 1 and Wave 2 data, only youths who participated in both waves were considered, therefore the final sample size comprised of 2,783 youths (49% Male, Mean age = 12.0 years).

### **11.2.2 Measures**

*Bullying:* Role of involvement in school bullying was assessed through six items in the youth questionnaire. Three items identified whether youths were victimised by their peers; two were adapted from the Peer and Friendship Interview (Schreier et al., 2009), which measured physical and relational victimisation, and one item was part of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 2001), and asked participants whether other children or young people picked on or bullied them. Bullying perpetration was measured similarly, using two questions on physical and relational bullying from the Peer and Friendship Interview, and one question from

the SDQ which asked whether “they fought a lot, and could make people do as they wanted”. A full description of the measures can be found in Tippett et al. (2013). These measures of school victimisation and bullying perpetration were then used to identify four distinct roles in school bullying: non-involved (were not bullies or victims), victim (were victims only), bully (were bullies only), and bully-victim (were both bullies and victims).

*Individual Characteristics: Happiness* was assessed through six items in the Wave 1 youth self-report questionnaire, which asked whether youths felt happy about their schoolwork, appearance, family, friends, school and life as a whole. Responses were scored on a seven-point scale ranging from ‘completely happy’ to ‘not at all happy’ and combined to give a mean happiness score (Cronbach’s  $\alpha = 0.74$ ) (Knies, 2011).

*Self-Esteem* was measured in the Wave 2 self-report questionnaire using an eight item version of the Rosenberg Self-Esteem scale (Rosenberg, 1989). Participants responded to each statement using a four point scale ranging from strongly agree (0) to strongly disagree (4). Positively worded items were reverse coded and all items summed to give an overall score ranging from 0 (highest self-esteem) to 24 (lowest self-esteem (Cronbach’s  $\alpha = 0.77$ )). Behavioural problems were assessed using the Strengths and Difficulties Questionnaire, which identifies five behavioural characteristics: *emotional symptoms*; *conduct problems*; *hyperactivity/inattention*; *peer relationship problems*; and *prosocial behaviour*. Each of these was assessed through five questions, scored on a three point scale ranging from 0 (not true) to 2 (certainly true). Responses were summed to give an overall score for each category, ranging from 0 (least behavioural problems) to 10 (most behavioural problems). Two items from the SDQ (picked on or bullied by other children; often fights with other children or bullies them) had already been used to identify roles in bullying,

therefore these items were removed, and their corresponding scales (peer relationship problems and conduct problems) comprised only the four remaining items.

*Sociodemographic Characteristics:* Sex, age group, and ethnicity were derived from the Wave 1 youth self-report questionnaire. Family and household characteristics were assessed using data from Wave 1 adult and youth questionnaires. Measures of household composition included *family size* (number of people living in household), *number of siblings*, and *number of natural parents living at home*. Parent-adolescent relationships were separately reported by both youths and parents. *Positive parent relationships* were measured using three questions in the youth questionnaire (whether youths talked to their mother about things that mattered, whether they spoke to their father about things that mattered, and whether they felt supported by their family; Cronbach's  $\alpha = 0.55$ ), and *negative parent relationships* through two questions (how often youths quarrelled with their mother, and how often they quarrelled with their father; Cronbach's  $\alpha = 0.62$ ). In the adult questionnaire, four questions assessed *supportive parenting behaviours* (how often praise child, how often hug child, how often talk about important matters with child, frequency of leisure with child; Cronbach's  $\alpha = 0.79$ ), and *harsh parenting behaviours* through three further questions (how often shout at child, how often quarrel with child, how often spank or slap child; Cronbach's  $\alpha = 0.81$ ). Where data were available from both parents, only scores from mothers were used to ensure consistency with single parent families. The Dyadic Adjustment Scale (Spanier & Thompson, 1982) was used to assess relationships between parents, and was comprised of 10 items, such as whether they ever quarrelled, and how often they kissed their partner (Cronbach's  $\alpha = 0.60$ ). Two factors were identified: *Parental harmony*, comprised of five items (stimulating exchange of ideas, calmly discuss something, work together on a

project, engage in outside interests, kiss partner; Cronbach's  $\alpha = 0.79$ ) and *parental conflict*, through a further four items (quarrel, get on each other's nerves, consider divorce, regret getting married; Cronbach's  $\alpha = 0.81$ ). *Sibling victimisation and sibling aggression* was measured using composite scales which assessed the severity of youth's involvement (as victim and perpetrator) across four types of aggression: physical, stealing, verbal and teasing (Tippett & Wolke, 2014a). Victimisation and perpetration scales ranged from 0 (none) to 12 (most severe).

Measures of socioeconomic status were obtained through adult questionnaires and household interviews at Wave 1. *Parent's education* was defined as the highest level of education achieved by either the mother or the father within the household (University degree, A-level or similar [Further education], GCSE or equivalent [Secondary education], and no qualifications). *Income* referred to the household's gross income in the month prior to the survey, while *poverty* identified households living below the poverty line, defined as 60% of the gross monthly income median (Dept for Work and Pensions, 2012). *Deprivation* was assessed using the Child Material Deprivation Index (CMDI) which identified the level of deprivation experienced by youths (Willitts, 2006). *Financial stress* was derived by asking whether households were behind with their rent/mortgage, council tax, or bills (Berthoud, 2012).

*Social Activities*: Indices pertaining to social activities were constructed using variables from both Wave 1 and Wave 2 of the study. Wave 1 variables included how often youths used the internet, whether they used a computer for homework (five point scale of everyday to never), hours spent watching television on a school day, hours spent playing games on a computer (five point scale of none to 7 or more hours), and the number of times stayed out after 9pm in the previous month (four

point scale of never to 10 or more times). Wave 2 included an additional question on the number of hours spent watching television on a weekend (five point scale of none to 7 or more hours). In addition, a list of 15 leisure activities were included, with items such as going to the cinema or doing voluntary or community work considered in this category. Participants stated how often they participated in each activity (six point scale of most days to never/almost never). Using principal components analysis, the above variables were analysed using varimax rotation, identifying five factors: *cultural activities* (going to museums or galleries, historic places or stately homes, the theatre, the library) (Cronbach's  $\alpha = 0.69$ ), *social-based activities* (hanging around in town centre, hanging around near home, partying/dancing, using social websites, going to the cinema, staying out after 9pm) (Cronbach's  $\alpha = 0.65$ ), *computer use* (using the internet, using computers for homework and games) (Cronbach's  $\alpha = 0.62$ ), *TV watching* (watching TV on a school day and weekend) (Cronbach's  $\alpha = 0.66$ ), and *artistic activities* (creating digital art, doing paintings or drawings) (Cronbach's  $\alpha = 0.53$ ).

### **11.2.3 Statistical Analysis**

All analyses were conducted using IBM SPSS Statistics version 19. Continuous measures were standardised as z-scores (Mean: 0; SD: 1) and inverted as necessary to ensure lower scores represented poorer outcomes on individual and sociodemographic measures (e.g. lower scores meant less happiness, more behavioural problems, poorer parenting relationships etc.). Mean scores on individual, sociodemographic and social measures according to bullying role are displayed in Figures 12 and 13. The zero line in each figure represents the overall sample mean. Chi-square tests (for categorical measures) and ANOVA (for continuous measures) were used to identify univariate differences between non-

involved youth and victims, bullies and bully-victims. Bonferroni corrections were applied to chi-square tests, to account for multiple comparisons. Post-hoc differences were identified using adjusted standardised residuals (SR) for chi-square tests. As a general rule of thumb, a SR of  $\pm 1.9$  or more (approximately one standard deviation) indicates the number of cases in a cell that significantly differ from the expected count. For ANOVA's, Scheffe's method was used for post-hoc comparisons. For the multivariate analysis, multinomial logistic regression was performed, as this allowed for multiple independent variables to be compared across a nominal dependent variable; which in this case was role in bullying (comprised of non-involved, victim, bully and bully-victim). Measures across all three domains (individual characteristics, sociodemographic characteristics and social activities) were entered simultaneously into the regression model and compared among groups (with non-involved as the reference category). Effect sizes are reported using odds ratios and 95% confidence intervals. For standardised continuous measures, odds ratios represent an increase of 1 standard deviation upon that scale.

### **11.3 Results**

Among all youths, 11.9% (N=330) were victims of bullying, 2.2% (N=62) were bullies, and 0.9% (N=24) bully-victims.

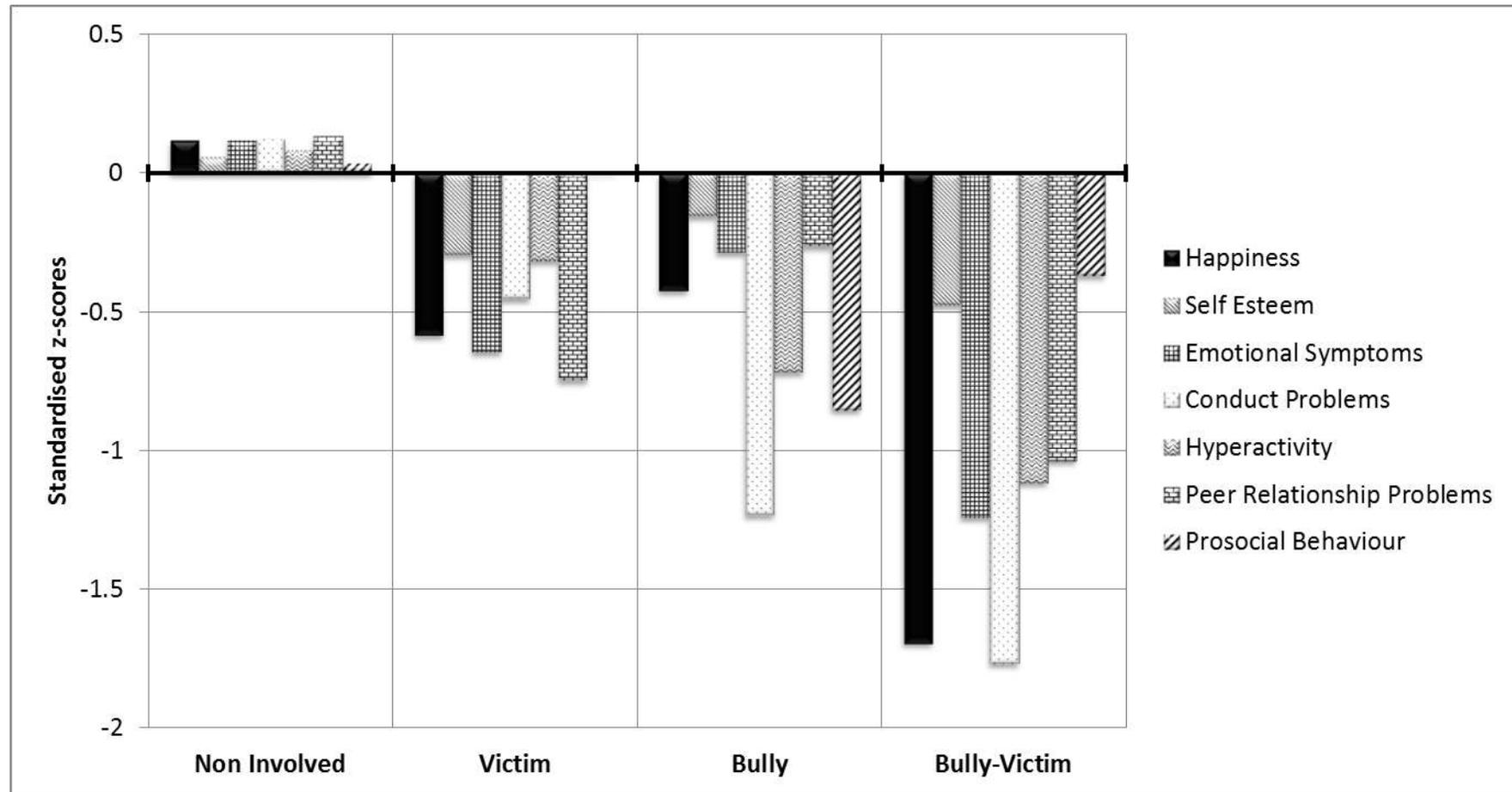
Figure 12 shows mean z-scores on measures of individual characteristics according to role in bullying. Univariate analysis found differences between bullying roles on measures of happiness ( $F=80.79$ ,  $p<0.001$ ), self-esteem ( $F=13.99$ ,  $p<0.001$ ), emotional symptoms ( $F=76.76$ ,  $p<0.001$ ), conduct problems ( $F=99.87$ ,  $p<0.001$ ), hyperactivity ( $F=38.02$ ,  $p<0.001$ ), peer relationships ( $F=93.86$ ,  $p<0.001$ ) and prosocial behaviour ( $F=17.33$ ,  $p<0.001$ ). Post-hoc analysis indicated that non-

involved youth fared better than victims, bullies and bully-victims on all measures except self-esteem and prosocial behaviour. Victims displayed fewer conduct problems and were less hyperactive than bullies and bully-victims, but showed more emotional symptoms and had more problematic peer relationships than bullies. Bullies did not differ from victims on measures of self-esteem, and were less likely to report emotional symptoms and problematic peer relationships than both victims and bully-victims. However, bullies displayed more conduct problems and hyperactivity than victims, and were the least prosocial of all groups. Bully-victims fared the poorest on all outcomes except for prosocial behaviour. Compared to victims and bullies, bully-victims were the least happy, and displayed the highest levels of emotional problems and conduct disorder.

Figure 13 presents mean z-scores on continuous sociodemographic measures according to role in bullying. Univariate analysis found significant differences between groups according to demographic factors: sex ( $\chi^2 = 18.64$ ,  $p < 0.01$ ), age group ( $\chi^2 = 24.13$ ,  $p < 0.01$ ), ethnicity ( $\chi^2 = 27.34$ ,  $p < 0.05$ ); household composition: household size ( $F=4.67$ ,  $p < 0.005$ ); parenting characteristics: negative parent-adolescent relationships ( $F=22.82$ ,  $p < 0.001$ ), harsh parenting ( $F=15.13$ ,  $p < 0.001$ ), parental conflict ( $F=22.23$ ,  $p < 0.001$ ); sibling aggression: sibling victimisation ( $F=22.85$ ,  $p < 0.001$ ), sibling perpetration ( $F=37.37$ ,  $p < 0.001$ ); and socioeconomic factors: parental education ( $\chi^2 = 27.70$ ,  $p < 0.05$ ) and income ( $F=3.21$ ,  $p < 0.05$ ). Post-hoc analysis revealed differing effects according to role in bullying. Among demographic measures, victims of school bullying were more likely to be male (SR = 1.9), aged 10-12 (SR = 4.6), and White (SR = 2.3). Bullies were more often male (SR = 2.7), and either Asian (SR = 3.7) or Black (SR = 1.9). Bully-victims were also more likely to be male (SR = 2.5) but did not differ by age or ethnicity. Among

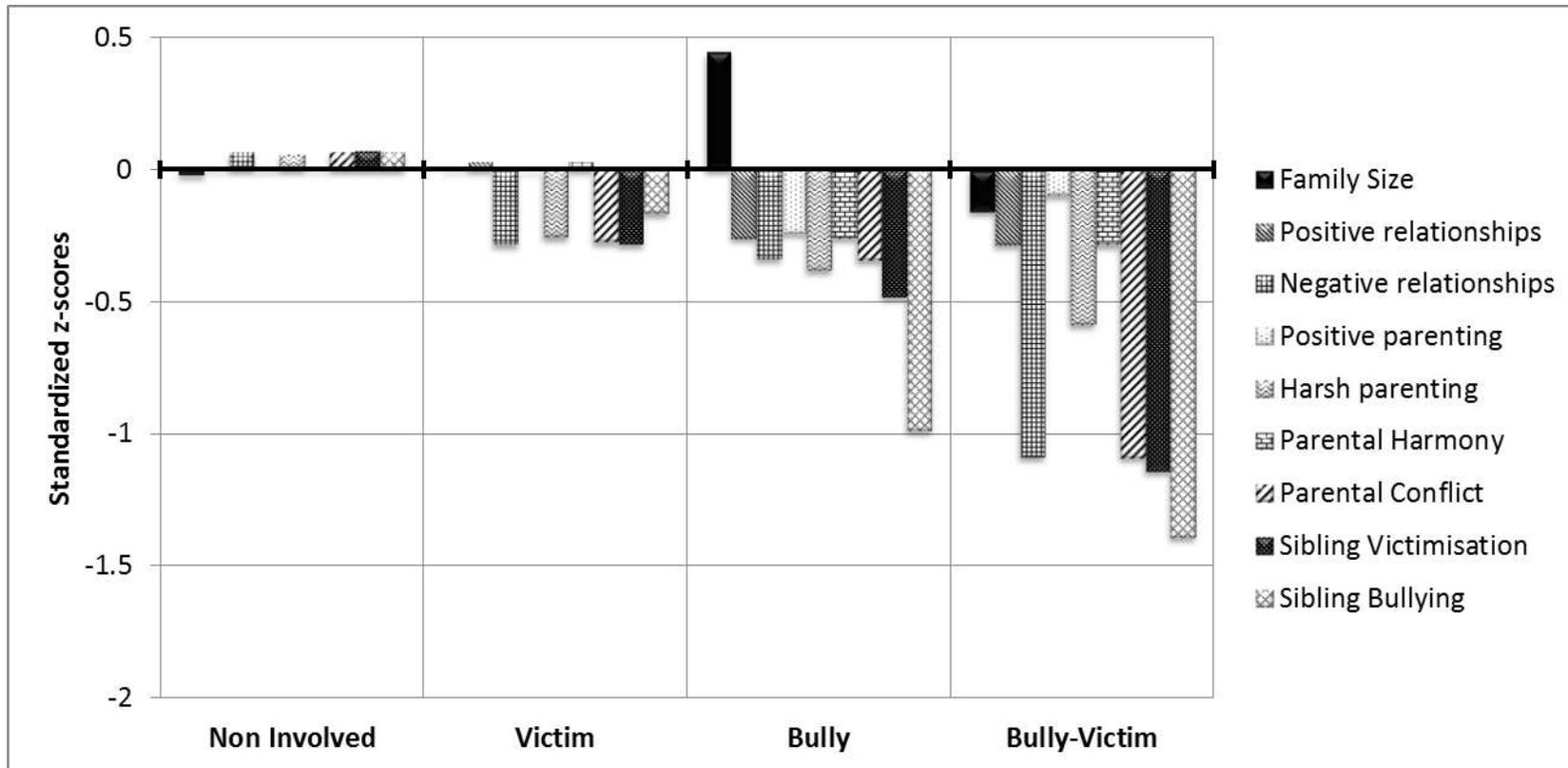
measures of household composition, differences were only observed for bullies, who came from larger households than victims or non-involved youth. For parenting characteristics, victims, bullies and bully-victims all reported more negative relationships with parents, harsher parenting, and greater parental conflict than non-involved youth. Bully-victims reported the most problems, experiencing poorer relationships with parents and greater parental conflict than both victims and bullies. All youth involved in bullying showed greater involvement in sibling aggression. Victims, bullies and bully-victims reported more victimisation by siblings than non-involved youth, while bullies and bully-victims were the most likely to perpetrate aggression towards their siblings. Few differences were observed according to socioeconomic measures, however a greater proportion of bullies and bully-victims had parents with no formal education (SR = 2.8 and 3.5 respectively).

Initial analysis on measures of social activities found group differences relating to social-based activities ( $F=2.74$ ,  $p<0.05$ ), TV watching ( $F=5.32$ ,  $p<0.001$ ) and artistic activities ( $F=7.39$ ,  $p<0.001$ ). Post-hoc analysis revealed few differences between groups, only indicating that victims engaged in more artistic activities, while bullies watched a greater amount of TV than non-involved youth.



<sup>1</sup> Lower scores indicate poorer outcomes on each scale i.e. lower self-esteem, more conduct problems

**Figure 12** Mean Scores on Standardised Measures of Individual Characteristics According to Role in Bullying



<sup>1</sup> Lower scores indicate poorer outcomes on each scale i.e. more negative relationships, less parental harmony

**Figure 13** Mean Scores on Standardised Measures of Sociodemographic Characteristics According to Role in Bullying

### **11.3.1 Fully Adjusted Model**

Entering all of the above items into a single multinomial regression model identified characteristics across all domains that were most strongly associated with roles in school bullying. Results are displayed in Table 10. Victimization was associated with less happiness (OR = 1.41, 95% CI = 1.17-1.71), and more emotional symptoms (OR = 1.20, 95% CI = 1.11-1.31) and peer relationship problems (OR = 1.53, 95% CI = 1.35-1.72). A decrease of 1 standard deviation on each of these scales significantly increased the risk of youth being a victim of school bullying. Associations were also found with sex and age, whereby being male increased the risk of being victimised (OR = 1.57, 95% CI = 1.10-2.24), while being in the older age group decreased it (OR = 0.56, 95% CI = 0.37-0.83). For bullies, associations were found for greater conduct problems (OR = 1.66, 95% CI = 1.29-2.13) and less prosocial behaviour (OR = 1.47, 95% CI = 1.05-2.05) with a change of 1 standard deviation on each scale increasing the risk of youth bullying others. Bullying perpetration was also associated with ethnicity, whereby Asian (OR = 3.67, 95% CI = 1.45-9.29) or Black (OR = 4.16, 95% CI = 1.27-13.57) youth were more likely to bully others. Furthermore, perpetration of aggression towards siblings (OR = 1.82, 95% CI = 1.18-2.79) significantly increased the risk of youth bullying their peers. The role of bully-victim was associated with lower happiness (OR = 2.68, 95% CI = 1.36-5.28), more emotional symptoms (OR = 1.85, 95% CI = 1.26-2.73) and more conduct problems (OR = 1.75, 95% CI = 1.03-2.97). An increase of 1 standard deviation on each of these scales significantly raised the risk of youth being bully-victims. Among sociodemographic factors, perpetration of sibling aggression (OR = 2.49, 95% CI = 1.06-5.84) and living below the poverty line (OR = 12.31, 95% CI = 1.24-121.81) both significantly increased the risk of youth being bully-victims.

**Table 10** Fully Adjusted Model Displaying Multivariate Associations between Roles in School Bullying and Individual, Sociodemographic and Social Measures (Odds Ratios And 95% Confidence Intervals)

	<b>Victim</b> (N=330)	<b>Bully</b> (N=62)	<b>Bully-Victim</b> (N=24)
<b>Individual Characteristics</b>			
Happiness	<b>1.41 (1.17-1.71)</b>	0.99 (0.68-1.45)	<b>2.68 (1.36-5.28)</b>
Self-esteem	0.95 (0.79-1.14)	1.21 (0.85-1.72)	1.88 (0.87-4.06)
Emotional symptoms	<b>1.20 (1.11-1.31)</b>	1.06 (0.90-1.26)	<b>1.85 (1.26-2.73)</b>
Conduct problems	1.13 (0.99-1.29)	<b>1.66 (1.29-2.13)</b>	<b>1.75 (1.03-2.97)</b>
Hyperactivity	1.02 (0.93-1.11)	1.04 (0.88-1.23)	1.07 (0.72-1.57)
Peer relationships	<b>1.53 (1.35-1.72)</b>	1.12 (0.85-1.47)	0.94 (0.53-1.68)
Prosocial	0.84 (0.69-1.02)	<b>1.47 (1.05-2.05)</b>	0.80 (0.36-1.77)
<b>Sociodemographic Characteristics</b>			
<i>Demographics</i>			
Sex: Male	<b>1.57 (1.10-2.24)</b>	1.38 (0.67-2.84)	4.06 (0.70-23.68)
Age: Older	<b>0.56 (0.37-0.83)</b>	1.53 (0.74-3.17)	0.15 (0.01-1.59)
Ethnicity: Mixed	1.21 (0.49-2.94)	1.98 (0.31-12.65)	6.17 (0.33-116.60)
Asian	0.64 (0.35-1.17)	<b>3.67 (1.45-9.29)</b>	0.20 (0.01-11.40)
Black	0.50 (0.17-1.48)	<b>4.16 (1.27-13.57)</b>	-
<i>Household Composition</i>			
Family Size	0.96 (0.78-1.19)	1.22 (0.88-1.70)	1.51 (0.55-4.15)
Single parent: Yes	0.94 (0.64-1.37)	1.29 (0.61-2.76)	0.35 (0.05-2.68)
Siblings: None	0.30 (0.04-2.56)	0.40 (0.12-1.31)	0.93 (0.27-3.25)
<i>Parenting Characteristics</i>			
Positive relationship	1.15 (0.96-1.40)	1.03 (0.72-1.49)	1.06 (0.45-2.36)
Negative relationship	1.12 (0.94-1.32)	0.90 (0.65-1.24)	1.57 (0.76-3.25)
Supportive parenting	0.92 (0.77-1.10)	0.99 (0.71-1.38)	1.34 (0.48-3.75)
Harsh parenting	1.06 (0.89-1.27)	1.11 (0.78-1.57)	1.23 (0.54-2.82)
<i>Parental Relationship</i>			
Parental harmony	1.07 (0.93-1.24)	0.84 (0.62-1.14)	0.86 (0.51-1.45)
Parental conflict	1.24 (1.08-1.42)	1.15 (0.88-1.52)	2.03 (1.27-3.25)
<i>Sibling Aggression</i>			
Sibling victimisation	1.08 (0.85-1.37)	0.80 (0.50-1.30)	1.13 (0.46-2.79)
Sibling perpetration	0.99 (0.77-1.27)	<b>1.82 (1.18-2.79)</b>	<b>2.49 (1.06-5.84)</b>

	<b>Victim</b> (N=330)	<b>Bully</b> (N=62)	<b>Bully-Victim</b> (N=24)
<i>Socioeconomic factors</i>			
Poverty: Poor	0.66 (0.39-1.10)	0.72 (0.28-1.88)	<b>12.31 (1.24-121.81)</b>
Deprivation: High	1.19 (0.80-1.75)	0.89 (0.41-1.93)	1.85 (0.26-12.99)
Financial stress: Any	1.05 (0.69-1.60)	0.98 (0.44-2.17)	0.39 (0.06-2.75)
Education: A-Level	0.98 (0.62-1.54)	1.60 (0.62-4.10)	0.07 (0.01-1.13)
GCSE	1.12 (0.68-1.84)	1.04 (0.36-3.05)	0.19 (0.02-2.19)
None	1.10 (0.54-2.27)	2.44 (0.72-8.24)	0.55 (0.04-7.12)
Income	0.84 (0.66-1.06)	0.83 (0.51-1.35)	0.75 (0.30-1.92)
<b>Social Activities</b>			
Cultural	1.06 (0.88-1.27)	1.06 (0.74-1.53)	0.79 (0.35-1.75)
Social	0.90 (0.74-1.08)	1.00 (0.70-1.41)	0.92 (0.37-2.30)
Computing	0.89 (0.76-1.05)	1.04 (0.75-1.45)	0.59 (0.31-1.11)
TV Watching	1.14 (0.96-1.36)	0.98 (0.70-1.38)	1.31 (0.61-2.82)
Artistic	1.16 (0.97-1.39)	1.29 (0.90-1.85)	2.02 (0.89-4.57)
Number of friends	0.99 (0.81-1.20)	1.25 (0.97-1.60)	0.92 (0.49-1.71)

<sup>1</sup> Multivariate analysis performed using multinomial logistic regression. Reference group is non-involved

<sup>2</sup> Scores in bold indicate significant associations ( $p < 0.05$ ).

<sup>3</sup> For continuous measures, odds ratios represent a change of 1sd. For categorical measures, reference groups are: Sex = Female; Age = 10-12; Ethnicity = White; Single parent = No; Any siblings = Yes; Poverty = Not poor; Deprivation: None; Financial stress = None; Education: Degree

## 11.4 Discussion

This study aimed to explore individual and social factors associated with adolescents' involvement in school bullying. Using a wide range of measures which covered individual, sociodemographic and social domains, the study contributes towards the knowledge base on bullying in three ways. Firstly, univariate associations between individual or sociodemographic characteristics and roles in bullying are replicated and confirmed among a large, nationally representative sample. Secondly, the study employed multivariate analysis to determine which of those factors remained associated with school bullying once all other individual and social characteristics were taken into consideration. Thirdly, the study assessed characteristics which have not, or have only been rarely explored in relation to school bullying, such as involvement in sibling aggression and engagement in social activities outside of school.

Of all factors considered, individual characteristics showed the strongest association with roles in school bullying. Previous research has found victims of school bullying are less happy (Kaltiala-Heino et al., 1999; Seals & Young, 2002), have poor self-esteem (O'Moore & Kirkham, 2001; Wild et al., 2004), and display more behavioural problems than non-involved peers (Gini, 2008; Perren et al., 2006). These findings provide some confirmation of this, however after performing multivariate analysis, only three individual factors remained associated with victimisation: low happiness, emotional symptoms, and peer relationship problems. Both emotional symptoms, which include social anxiety and withdrawal, and problematic peer relationships have been independently linked with peer victimisation (Arseneault et al., 2010; Hodges & Perry, 1999; Perren et al., 2006). These youths have difficulties integrating with their peer group, and struggle to form or maintain positive relationships, leading them to become isolated and bullied by their peers (Hodges et al., 1999). Depression also shows a strong association (Arseneault et al., 2006; Hawker & Boulton, 2000), whereby depressed children are rejected from their peer group, thus increasing the risk of being victimised (Veenstra et al., 2005). Furthermore, the experience of being bullied enhances feelings of unhappiness, such that depressed children become even more depressed through bullying (Fekkes et al., 2004). In contrast to some studies (Ladd & Burgess, 1999; Perren et al., 2006), these findings do not support the view that victims display more conduct disorder and hyperactivity; therefore aggressive or disruptive behaviour does not appear to be a risk factor for victimisation by peers.

Quite different results were found for those who bullied. Although individual associations were found with all measures except self-esteem, multivariate analysis indicated bullying perpetration was only linked with conduct problems and prosocial

behaviour. Bullies have been found to display a range of behavioural and psychological problems (Barker, Arseneault, et al., 2008; Junger-Tas & van Kesteren, 1999; Wolke et al., 2000), including hyperactivity (Taylor et al., 2010) and emotional symptoms (Gini, 2008), however, these findings suggest that bullies have fewer emotional problems and experience better peer relationships than victims and bully-victims. Furthermore, bullies appear to be the happiest, and have the best self-esteem of all youth involved in bullying. Rather, it is conduct problems and a lack of prosocial behaviour that distinguishes bullies from the rest of their peers. Conduct problems, which include a range of antisocial, aggressive or disruptive behaviours, uniquely contribute towards the risk of bullying perpetration (Perren et al., 2006; Viding et al., 2009); however, it is conduct problems, in combination with callous-unemotional traits, such as a lack of empathy or guilt, that presents the greatest risk for bullying others (Viding et al., 2009). The association with low prosocial behaviour may reflect this tendency for bullies to behave callously and without remorse.

Consistent with previous research, bully-victims showed the most psychological and behavioural problems, scoring lowest of all groups on most individual measures (Arseneault et al., 2006; Cook et al., 2010; Wolke et al., 2000). Multivariate analysis identified three characteristics which distinguished bully-victims: low happiness, more emotional symptoms and more conduct problems. The findings illustrate how bully-victims represent a distinct behavioural profile, yet at the same time share traits in common with both victims and bullies. As found for victims, bully-victims were both unhappy and displayed a high rate of emotional problems; characteristics which can lead to youth being isolated or rejected from their peer group, and thus identified as an easy target for bullying. Where bully-victims differed however was in the high

rate of conduct problems they displayed, which is more typical of those who bully. A range of risk factors have been linked with the bully-victim role, and although the causes are not fully understood, it has been suggested that it is how youth respond to victimisation that can lead to them becoming bully-victims (Arseneault et al., 2010). Bully-victims have both poorer mental health and a greater propensity for conduct problems, thus when they are victimised they have few resources which help them to cope, and thus respond by bullying others (Arseneault et al., 2010). The poorer health and social outcomes they have in adolescence and beyond (Copeland et al., 2013; Haynie et al., 2001) suggests that bully-victims are in greatest need of interventions which can support their emotional and behavioural needs.

A wide range of sociodemographic characteristics were included in this study, with each differing in its relationship to bullying roles. Demographic characteristics of age, sex and ethnicity were all linked with bullying; males and younger youth were more likely to be victims, while Black and Asian youth were more often bullies than White youth. The findings are generally consistent with previous research. Males engage more often in all bullying roles than females, although this effect is more pronounced for bullies and bully-victims (Cook et al., 2010; Nansel et al., 2001), and rates of bullying involvement, particularly for those who are victimised, tend to decline throughout adolescence (Solberg & Olweus, 2003). Recent population based surveys have also found that ethnic minority youth are more likely to be bullies and less likely to victims than the ethnic majority (Sawyer et al., 2008; Tippett & Wolke, 2014a; Wang et al., 2009), possibly as a result of differing cultural beliefs or attitudes towards aggression; however, research in this area is still limited at present.

Although few differences were found according to household characteristics, family relationships were associated with all roles in bullying. A large body of research has

highlighted the link between parenting and school bullying, suggesting that maladaptive parenting practices and poor parental relationships can increase the risk of children being victimised or bullying others (Bowes et al., 2009; Lereya, Samara, et al., 2013). The univariate findings in this study appeared to confirm this, showing that victims, bullies and bully-victims all reported poorer relationships with their parents, experienced harsher parenting, and witnessed more domestic conflict than non-involved youth. Despite these individual associations, after controlling for other individual and sociodemographic factors, the relationship between parenting and bullying was no longer significant. Rather, it was the experience of sibling aggression that predicted involvement in school bullying, over and above parenting characteristics. The multivariate analysis found that youth who perpetrated aggression towards their siblings were more likely to be school bullies and bully-victims. The link between aggression with siblings and peers has been previously reported (Tippett & Wolke, 2014a), and studies of school and sibling bullying have found that victim and perpetrator roles carry over between the home and school environment (Duncan, 1999b; Wolke & Samara, 2004). Despite this, most attention has focused on how parenting relates to school bullying; very little has centred on sibling relationships. Improving parenting skills has been identified as a potential route for reducing involvement in school bullying (Horne, Stoddard, & Bell, 2007; Sharp, 1996), however these findings suggest that improving sibling relationships may be a more effective target for anti-bullying interventions.

Although this study included a range of socioeconomic indices, few associations were found with roles in school bullying, through either the univariate or multivariate analysis. Bullies and bully-victims were more likely to have parents with no-formal education, and after controlling for all factors, poverty was associated with a greater

risk of being a bully-victim, however the large confidence interval suggests this is more likely due to the low number of bully-victims in the study. In general, socioeconomic factors did not appear significant, which is consistent with a recent meta-analysis which found only a small association between SES and victim and bully-victim roles, and no association with bullies (Tippett & Wolke, 2014b).

A novel aspect of this study was the inclusion of scales which measured youth's involvement in social activities. A broad range of activities were considered, and grouped into five clusters: cultural activities, social-based activities, computing, watching television, and artistic activities. Previous research has examined bullying in relation to specific activities, such as the amount of TV watched (Sisson et al., 2011) and the use of social networking (Mann, 2009; Ybarra & Mitchell, 2008), however no studies have assessed whether the way in which children spend their free time is associated with roles in bullying. The findings identified some univariate associations, indicating that victims were more often involved in artistic activities, and that bullies watched a greater amount of TV, however neither of these associations remained in the multivariate analysis. Although this is the first study to do so, the results suggest that overall, social activities contributed little to the fully adjusted model, and offer little benefit for predicting roles in school bullying.

In contrast to much of the research in this area, this study failed to find an association between number of friendships and role taken in school bullying. Cross-cultural research has indicated that both victims and bully-victims tend to have fewer friends than children not involved in bullying (Eslea et al., 2004; Rigby, 2007; Wolke, Woods, et al., 2009). Furthermore, the presence of high-quality, trusting, and reciprocated relationships has been found to be a key protective factor against being bullied (Bollmer et al., 2005; Boulton, Trueman, et al., 1999; Hodges et al., 1997).

That the present findings found no association may result from the means of measurement: a single self-report item which asked children how many friends they had. Whether these friends attended the same school or not was not specified, therefore 'friends' may potentially have included family members, or online contacts. Furthermore, there was no indication of either the strength of this relationship, or whether it was reciprocated; therefore the measure neglected some key dimensions of peer friendships. As Eslea et al. (2004) state, "simply asking about the number of friends... is rather a crude way to assess levels of social support".

This study has a number of strengths, including the wide range of individual, sociodemographic and social measures, a nationally representative sample of UK adolescents, and the use of multivariate analysis techniques; however, there are some limitations which need to be acknowledged. Firstly, the data used were cross-sectional, and therefore the findings imply associations rather than causations. Longitudinal research has already identified a wide range of risk factors for involvement in bullying, and the aim of this study was not to catalogue risk factors, but rather to build a psychosocial profile of bullying roles, which can be used by practitioners to support youth who already are, or are at risk of, becoming involved in bullying. Secondly, although this study considers a range of individual and sociodemographic factors, the measures used are far from exhaustive, therefore there is the possibility that unmeasured confounders may explain the differences between bullying roles. Finally, scales relating to social activities and relationships with parents showed low internal consistency. Although 0.7 is seen as the traditional cutoff point, alpha scores of around 0.6 are generally acceptable (Moss et al., 1998). The low alpha values obtained in this study are likely to result from the small number of items used in each scale.

Victims, bullies and bully-victims display distinct individual and sociodemographic profiles which can be used as guide by practitioners to support children who are, or are at risk of, involvement in school bullying. The negative outcomes associated with all roles in bullying indicate the need for early interventions, and that each role is linked to differing characteristics suggests that interventions should be targeted to address youth's specific needs. Victims exhibit a range of emotional problems, including social withdrawal and anxiety, but also have difficulties with peer relationships, thus may benefit from interventions which focus on developing social skills and improving emotional development. Bullies show more conduct problems, are less prosocial, and behave aggressively towards siblings, therefore interventions should aim to encourage empathy and prosocial behaviour, and help them to build more positive and supportive sibling relationships. Bully-victims share characteristics of both victims and bullies and require the most support, in particular, interventions which are able to develop their social skills and ability to maintain successful peer relationships, but also reduce their use of aggressive or antisocial behaviour, with both peers and siblings. The findings serve to illustrate that although individual characteristics may be the greatest contributor to youth's involvement in school bullying, environmental characteristics are also important, and to be most effective, intervention programmes also need to take into account youth's experiences and relationships outside the school environment.

## Chapter 12 Remaining, Escaping or Newly Bullied in Adolescence: Risk Factors and Consequences

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**Objectives:** Victimization by peers can lead to adverse consequences, however, the duration of bullying (stability), and how recently it occurred (recency) may impact on the severity of outcomes. Firstly, this study investigated how stability or recency affected individual, social, and family outcomes of victimisation. Secondly, the study aimed to identify sociodemographic factors which may explain why some youth experienced stable victimisation while others escaped victimisation or became victimised.

**Methods:** Using data from Understanding Society, 1,891 youth, aged 10-15 were surveyed at two time-points, two years apart. Four victim groups (non-involved, escaped, stable, and new) were compared on psychological, behavioural and social outcomes. To identify correlates and risk factors, the same groups were also compared on a range of baseline characteristics, including demographics, parent and sibling relationships, socioeconomic status, school factors, and behavioural problems.

**Results:** Stable victimisation was linked with poor outcomes on all measures including poor sibling relationships, as was recent victimisation. Adolescents who

successfully escaped further peer victimisation showed psychological and social adaptation similar to adolescents who were never bullied. Sociodemographic factors failed to predict whether youths escaped, stayed or became victims of bullying; however, stable victims displayed the most behavioural problems.

**Conclusions:** The findings indicate that stable and concurrent peer victimisation is strongly related to wide range of adverse outcomes, including family relationships. Children who manage to escape peer victimisation over time have a significantly reduced risk of adverse psychological consequences but may remain more vulnerable to sibling aggression.

## 12.1 Introduction

There is sufficient evidence to show that bullying has a significant impact on youth's health and wellbeing (Hawker & Boulton, 2000; Reijntjes et al., 2010), and recent findings have suggested the consequences can be long-lasting, continuing to affect those who are bullied throughout their adult life (Copeland et al., 2013; Takizawa et al., 2014; Wolke, Copeland, et al., 2013). The impact of school bullying differs according to whether youth are involved as victims, bullies, or bully-victims (those who both bully others and are victimised). Being a victim or bully-victim has been found to lead to poor adjustment (Gini, 2008; Sourander et al., 2007) and more problematic social relationships (Connolly et al., 2000), but has also been linked to a range of physical and mental health outcomes, including depression, anxiety, self-harm, suicidal behaviour, and psychosis (Bogart et al., 2014; Reijntjes et al., 2010; Winsper et al., 2012; Wolke, Lereya, et al., 2013; Zwierzyńska et al., 2013).

It is clear that being bullied has adverse physical, mental, and behavioural consequences (Copeland et al., 2014); however, not all victims or bully-victims will

experience adverse outcomes. Two key factors have been identified which can directly affect the severity of these outcomes (Bogart et al., 2014; Schreier et al., 2009; Zwierzynska et al., 2013): stability of victimisation, and how recently the bullying occurred. *Stability* refers to duration of the bullying that was experienced, and recent findings have indicated that the longer a child is victimised, the more severe the consequences will be (Copeland et al., 2013; Juvonen et al., 2000; Rueger et al., 2011; Scholte et al., 2007; Schreier et al., 2009; Smith et al., 2004; Wolke, Copeland, et al., 2013; Zwierzynska et al., 2013). In addition, *recency* can be used to refer to the timing of the bullying experience relative to when data were collected, and there is some evidence to indicate that the more recent the bullying experience is, the poorer the outcomes will be (Bogart et al., 2014; Juvonen et al., 2000; Smith et al., 2004). At present little research has considered the issues of stability and recency, yet these factors may be important for understanding which victims are at risk for the most adverse outcomes.

In addition, few studies have investigated correlates or risk factors which may explain why some youth experience stable victimisation, while others are able to escape being bullied, or become victims later in time. There is some evidence that stable victims have poor relationships (Hodges et al., 1997; Smith et al., 2004; Wolke, Woods, et al., 2009), however, few other factors have been found which explain why some youth are able to escape being victimised.

Completely unknown is whether sibling and other family relationships can impact on remaining a victim, escaping being bullied or becoming a victim of bullying. Cross-sectional studies suggest that being a victim of sibling bullying at home may impact on peer relationships at school (Duncan, 1999b; Tippet & Wolke, 2014a; Wolke & Samara, 2004)

The first aim of this study was to identify the impact of both stability and recency of victimisation on self-reported individual, behavioural, and social outcomes, which led to the question, is there a dose-response relationship with victimisation, or does current experience of being bullied lead to the poorest outcomes? Secondly, a wide range of social and environmental variables available within Understanding Society were used to identify factors, or combination of factors, that may explain why some youth escaped victimisation, while others became, or remained as victims.

## **12.2 Methods**

### ***12.2.1 Design and Sample***

This study uses data from Understanding Society, a longitudinal household panel study which explores the social and economic circumstances of people living in the United Kingdom (England, Wales, Scotland and Northern Ireland). The study comprises over 40,000 households, with data collected annually from any adults or youths living within the selected household at the time. Full descriptions of the sample, as well as processes of participant recruitment and data collection are available elsewhere (Buck & McFall, 2012), and through the project website (<https://www.understandingsociety.ac.uk/>).

Multiple instruments were used in this study. One adult in the household completed a household interview and enumeration grid, following which, all adults aged 16 or over responded to an individual interview and self-completion questionnaire. Youths, defined as anyone aged 10-15 living within the household, were asked to fill in a separate self-completion questionnaire. Informed consent was obtained from parents or guardians, and youths provided oral consent for their participation. Ethical

approval was granted by the University of Essex and all participants were informed that they were free to withdraw from the study at any time.

This study used data from the first three waves of Understanding Society. Baseline data (from Wave 1) were collected between January 2009 and December 2011. The follow up assessment, Time 2 (using data from Wave 3), took place two years later, with data collected between January 2011 and December 2013. At baseline, a total of 30,169 households participated in the study, including 4,899 youths aged between 10 and 15 who responded to the youth self-completion questionnaire. Overall, 3,008 participants were lost between baseline and Time 2, however, this is partly attributable to respondents moving on to the adult questionnaire when they reached the age of 16. Thus, youth who were aged 14 or older at baseline were not eligible to answer the youth questionnaire at Time 2 (N=1,005). Excluding these, 2,003 youths did not provide follow up data: dropout analysis comparing this group to the remaining Time 2 youth respondents is presented in the results section. As this study used both baseline and follow-up data, only participants who responded at both time points were included; therefore, the sample size for the present study was 1,891 youths (49% Male) who participated in Understanding Society.

## **12.2.2 Measures**

### **12.2.2.1 Baseline and Follow-Up Measures**

*Victimisation by peers:* Participants' experiences of being bullied at school were assessed at both baseline and Time 2 through three items in the youth self-completion questionnaire. Two of these items were adapted from the Peer and Friendship Interview (Schreier et al., 2009), and measured physical and relational victimisation, while the third item was part of the Strengths and Difficulties

Questionnaire (SDQ) (Goodman, Patel, & Leon, 2008), and asked participants whether other children or young people picked on or bullied them. Youth who reported being physically or relationally bullied “quite a lot (more than four times in last 6 months)” or “a lot (a few times every week)”, or who responded “certainly true” to the SDQ item were classified as victims of school bullying.

Four outcome variables were used in the present study: happiness, behavioural problems, parent-adolescent relationships, and sibling relationships. Each of these outcomes was assessed at baseline, and again at Time 2.

*Happiness:* Youth’s happiness was measured using six items in the youth self-report questionnaire which asked whether youths felt happy about their schoolwork, appearance, family, friends, school and life as a whole (Knies, 2011). Responses were scored on a seven-point scale ranging from ‘completely happy’ to ‘not at all happy’ and combined to give a mean happiness score (Cronbach’s  $\alpha = 0.74$ ).

*Behavioural problems:* The Strengths and Difficulties Questionnaire (Goodman, 2001) measured five behavioural characteristics: *emotional symptoms*; *conduct problems*; *hyperactivity/inattention*; *peer relationship problems*; and *prosocial behaviour*. Each of these subscales was measured using five questions, scored on a three point scale ranging from 0 (not true) to 2 (certainly true), and responses are then summed to give an overall score for each category, ranging from 0 (least behavioural problems) to 10 (most behavioural problems). One item from the peer relationship problem subscale (picked on or bullied by other children) was used to assess victimisation by peers, therefore this item was removed. A total score, indicating overall level of behavioural difficulties, was calculated by combining the

emotional symptoms, conduct problems, hyperactivity and peer relationship problems subscales (Cronbach's  $\alpha = 0.78$ ).

*Parent-adolescent relationships:* Several items in the youth self-completion questionnaire were used to indicate the quality of youth's relationships with their parents. Positive relationships were assessed using three questions, which asked whether youths talked to their parents about things that mattered (separately for mother and father), and whether they felt supported by their family (Cronbach's  $\alpha = 0.55$ ). Negative relationships were measured through two questions, which asked how often youths quarrelled with their parents (separately for mother and father; Cronbach's  $\alpha = 0.62$ ).

*Sibling relationships:* Involvement in sibling bullying was used as an indicator of sibling relationship quality. Composite scales of victimisation and perpetration were constructed to assess the severity of youth's involvement (as victim and perpetrator) across four types of aggression: physical, stealing, verbal and teasing (for detailed descriptions see Tippett & Wolke, 2014a). Victimisation and perpetration scales ranged from 0 (none) to 12 (most severe).

### **12.2.2.2 Baseline Measures**

Baseline measures covering a wide range of sociodemographic characteristics were included. These were used firstly as control variables, to assess the impact of stability and recency on bullying outcomes, and secondly, as predictor variables, to determine which factors were associated with being an escaped, new, or stable victim of school bullying.

*Sex, age group, and ethnicity* were derived from the Wave 1 adult and youth questionnaires. Measures of household composition included *family size* (number of

people living in household), *number of siblings*, and *number of natural parents living at home*. *Parenting behaviour* was measured through the adult self-report questionnaire: four questions assessed *supportive parenting behaviour* (how often praise child, how often hug child, how often talk about important matters with child, frequency of leisure with child; Cronbach's  $\alpha = 0.79$ ), and three questions measured *harsh parenting behaviour* (how often shout at child, how often quarrel with child, how often spank or slap child; Cronbach's  $\alpha = 0.81$ ). Where data was available from both parents, only scores from mothers were used to ensure consistency with single parent families.

Quality of parent's health and relationships were assessed with the adult self-report questionnaire. Parental health was measured using the 12 item Short Form Health Survey (SF-12; Ware et al., 2002) which included individual components assessing both *physical health* and *mental health*. Additionally, the General Health Questionnaire-12 (GHQ-12) was used to measure *psychological distress* (David P Goldberg et al., 1997), using 12 items, with scores summed to create a scale representing total distress. Primary caregiver scores (usually the mother) for both the SF-12 and GHQ-12 were used. The Dyadic Adjustment Scale (Spanier & Thompson, 1982) measured parents' relationship quality and two factors were identified: *Parental harmony* (stimulating exchange of ideas, calmly discuss something, work together on a project, engage in outside interests, kiss partner; Cronbach's  $\alpha = 0.79$ ) and *parental conflict* (quarrel, get on each other's nerves, consider divorce, regret getting married; Cronbach's  $\alpha = 0.81$ ).

Measures of socioeconomic status included *Parents' education*, defined as the highest level of education achieved by either the mother or the father within the household (University degree, A-level or similar [Further education], GCSE or

equivalent [Secondary education], and no qualifications), dichotomised into A level or higher/GCSE or lower. *Poverty* identified households living below the poverty line, defined as 60% of the gross monthly income median (DWP, 2012). *Deprivation* was assessed using the Child Material Deprivation Index (CMDI) which identified the level of deprivation experienced by youths (Willitts, 2006). *Financial stress* was derived by asking whether households were behind with their rent/mortgage, council tax, or bills (Berthoud, 2011).

Measures of school behaviour and friendships were taken from the youth self-report questionnaire and included *number of friends*, *whether youth played truant from school* (dichotomised to Yes or No), *how often they misbehaved in class*, and *how often others misbehaved in class* (the latter two dichotomised to often/sometimes vs never).

### **12.2.3 Data Analysis**

All analyses were conducted using IBM SPSS Statistics version 19. Time 2 outcome measures (happiness, behavioural problems, parent-adolescent relationships, and sibling relationships) were converted into standardised z-scores, and where necessary, inverted, so that negative scores represented poor outcomes (i.e. less happiness, more behavioural problems, poorer relationships).

To assess the effect of stability and recency on bullying outcomes, four groups of victims were identified: non-victims, escaped victims, stable victims, and new victims. ANCOVA's were used to identify differences between these groups on each of the Time 2 outcome measures, while controlling for baseline scores as well as a range of sociodemographic characteristics (age, sex, ethnicity, household composition, parenting behaviour and socioeconomic measures). Post-hoc

comparisons were performed using Scheffe's method. The results of this analysis are illustrated in Figure 14. Additional analysis was conducted using change scores, which indicated how youth's scores on each outcome variable differed over time. To create this, Time 2 scores were subtracted from baseline, and the resulting values standardised as z-scores. Positive scores indicated improvements, while negative scores reflected a change for the worse. Change scores for the four outcome variables were compared between non, escaped, stable, and new victims using ANCOVA's, which controlled for baseline sociodemographic characteristics. The results are presented in Table 11.

To identify characteristics associated with youths escaping, becoming or remaining victims of bullying, the four victim groups (non-victims, escaped victims, stable victims, and new victims) were compared on all baseline sociodemographic and individual measures using chi-square tests for categorical measures, and ANOVA's for continuous measures. Post-hoc comparisons were performed where necessary using adjusted standardised residuals for chi-square tests, and Scheffe's method for ANOVA's. The results are presented in Table 12.

## **12.3 Results**

### ***12.3.1 Dropout Analysis***

From the original baseline sample of 4,899 youths aged 10-15, 1,005 (20.5%) were not eligible for the youth questionnaire at Time 2, while 2,003 (40.9%) youths dropped out of the study, and 1,891 provided valid responses at both time-points. Respondents and non-respondents (drop-outs only) were compared on baseline sociodemographic measures using ANOVA's and Chi square tests to determine whether the final sample differed significantly from the original. Across all the

baseline characteristics tested, respondents were more likely to be White Caucasian (76.6% of respondents vs 68.2% of non-respondents;  $\chi^2 = 37.50$ ,  $p < 0.001$ ), and more often lived with both natural parents (45.9% vs 33.8%;  $\chi^2 = 59.52$ ,  $p < 0.001$ ). Furthermore, respondents scored higher on measures of socioeconomic status, including poverty (19.9% poor vs 27.0%;  $\chi^2 = 26.65$ ,  $p < 0.001$ ), deprivation (38.1% deprived vs 45.3%;  $\chi^2 = 20.64$ ,  $p < 0.001$ ), parental qualifications (33.7% GCSE or lower vs 46.1%;  $\chi^2 = 60.62$ ,  $p < 0.001$ ), and financial stress (23.8% experience financial stress vs 30.4%;  $\chi^2 = 21.63$ ,  $p < 0.001$ ). No differences were observed between respondents and non-respondents on whether they were victimised by their peers. Additionally, non-respondents did not differ from respondents on baseline measures of happiness, behavioural problems, parent-adolescent relationships, or sibling relationships.

### **12.3.2 Time 2 Outcomes**

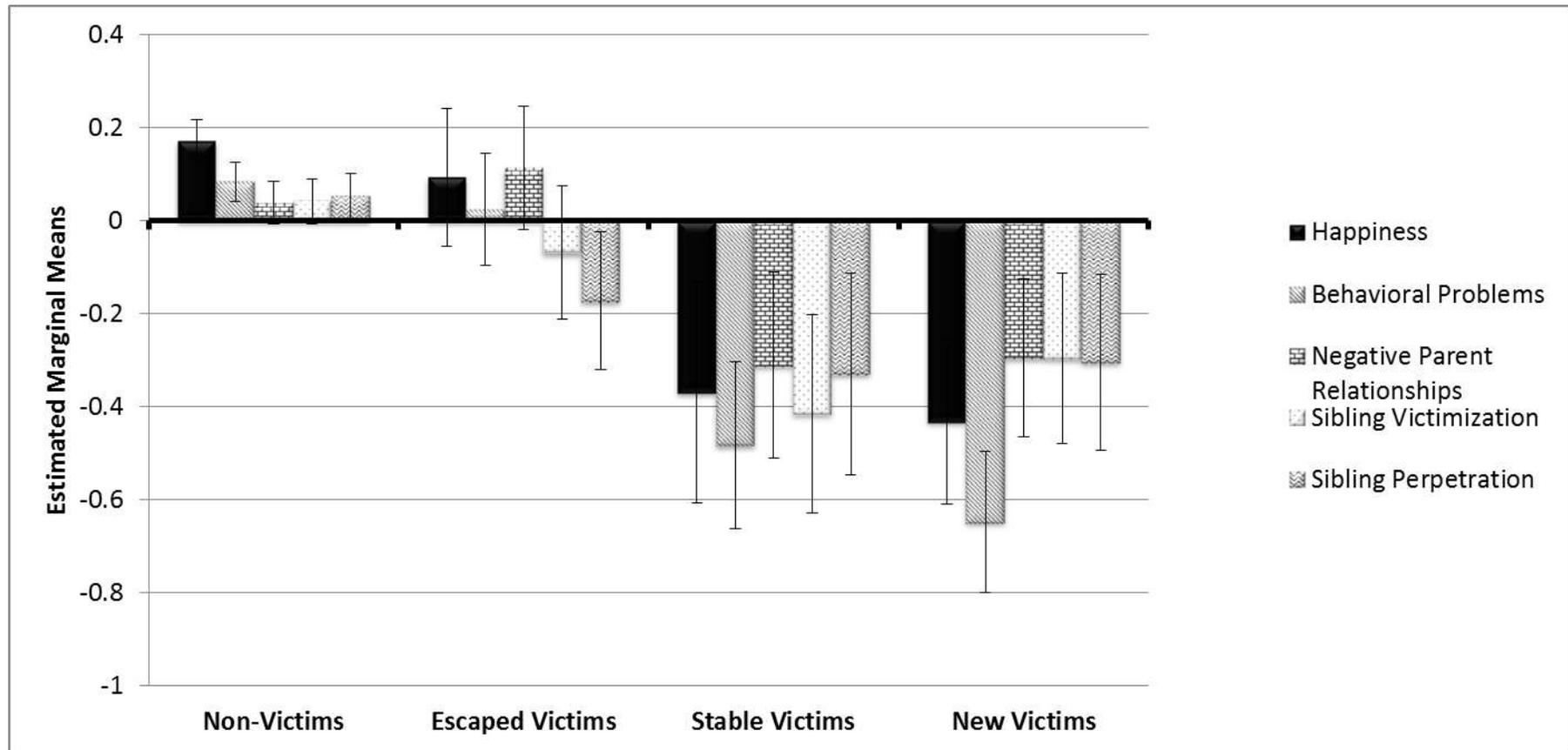
At baseline, 272 youths (14.5%) reported being victimised; by Time 2 this had reduced to 196 youths (10.4%). Four groups were created for the purpose of analysis: Non-victims ( $n=1,493$ , 79.7%), escaped victims ( $n=184$ , 9.8%), stable victims ( $n=84$ , 4.5%), and new victims ( $n=112$ , 6.0%). To examine whether stability or recency had an impact on the outcomes of being bullied, these four groups were compared using ANCOVA's on each of the outcome variables, while simultaneously controlling baseline scores and sociodemographic characteristics. Figure 14 displays mean scores on standardised outcome variables for each of the victim groups.

Significant differences were found between each group according to measures of happiness ( $F = 19.32$ ,  $p < 0.001$ ) and behavioural problems ( $F = 37.08$ ,  $p < 0.001$ ).

Escaped victims did not differ from non-victims on either measure; however, both

stable victims and new victims had significantly more negative scores. No significant differences were observed between stable and new victims, although new victims did score slightly worse on each measure. Further examination was carried out using the five SDQ subscales. A similar pattern emerged: new and stable victims showed more problems than both non-victims and escaped victims in emotional symptoms ( $F = 38.87, p < 0.001$ ), conduct problems ( $F = 16.05, p < 0.001$ ), hyperactivity ( $F = 8.84, p < 0.001$ ), and peer relationship problems ( $F = 44.94, p < 0.001$ ) subscales. No differences were observed between groups in the prosocial behaviour subscale.

Among outcomes examining relationships with parents and siblings, no significant differences were found between groups according to the measure of positive parent-child relationships, however, both stable and new victims reported more negative relationships with their parents than either non-victims or escaped victims ( $F = 8.66, p < 0.001$ ). Escaped victims had the least negative parental relationships, but did not differ from non-victims on this measure. Sibling relationships were assessed using measures of sibling aggression and victimisation. Escaped and non-victims were less often victimised by their siblings than both stable and new victims ( $F = 9.32, p < 0.001$ ). All peer victims, including escaped, stable, and new victims were more likely to bully their siblings than non-victims.



<sup>1</sup> Means adjusted for baseline scores on outcomes variables and sociodemographic factors

**Figure 14** Scores on Time 2 Outcomes Variables among Non-Victims, Escaped Victims, Stable Victims, and New Victims (Estimated Marginal Means And 95% Confidence Intervals)

**Table 11** Baseline, Time 2, and Change Scores on Main Outcome Variables According to Stability and Recency Of Victimization

	<b>Non-Victims<sup>a</sup></b> (N = 1493)	<b>Escaped Victims<sup>b</sup></b> (N = 184)	<b>Stable Victims<sup>c</sup></b> (N = 84)	<b>New Victims<sup>d</sup></b> (N = 112)	<b>F</b>
<b>Happiness</b>					
Baseline <sup>1</sup>	0.13 (0.90)	-0.53 (1.20)	-0.96 (1.25)	-0.13 (1.00)	
Time 2 <sup>1</sup>	0.13 (0.92)	-0.19 (1.03)	-0.93 (1.13)	-0.68 (1.15)	
<b>Change<sup>2</sup></b>	<b>0.01 (0.03)<sup>bd</sup></b>	<b>0.31 (0.07)<sup>ad</sup></b>	<b>0.02 (0.11)<sup>d</sup></b>	<b>-0.56 (0.10)<sup>abc</sup></b>	<b>17.72**</b>
<b>Behavioural Problems</b>					
Baseline <sup>1</sup>	0.20 (0.95)	-0.51 (0.98)	-0.93 (0.99)	-0.31 (0.98)	
Time 2 <sup>1</sup>	0.15 (0.92)	-0.27 (1.01)	-1.00 (1.09)	-0.80 (1.04)	
<b>Change<sup>2</sup></b>	<b>0.01 (0.03)<sup>bd</sup></b>	<b>0.28 (0.08)<sup>ad</sup></b>	<b>-0.05 (0.11)<sup>d</sup></b>	<b>-0.52 (0.10)<sup>abc</sup></b>	<b>14.53**</b>
<b>Negative Parent Relationships</b>					
Baseline <sup>1</sup>	0.14 (0.93)	-0.22 (1.11)	-0.49 (1.05)	-0.06 (0.99)	
Time 2 <sup>1</sup>	0.06 (0.98)	-0.03 (0.98)	-0.57 (1.14)	-0.32 (1.09)	
<b>Change<sup>2</sup></b>	<b>-0.01 (0.03)<sup>b</sup></b>	<b>0.23 (0.08)<sup>ad</sup></b>	<b>0.01 (0.13)</b>	<b>-0.21 (0.11)<sup>b</sup></b>	<b>4.55*</b>
<b>Sibling Victimization</b>					
Baseline <sup>1</sup>	0.05 (0.98)	-0.28 (1.12)	-0.19 (1.12)	-0.12 (1.16)	
Time 2 <sup>1</sup>	0.09 (0.95)	-0.25 (1.05)	-0.66 (1.11)	-0.41 (1.17)	
<b>Change<sup>2</sup></b>	<b>0.02 (0.03)</b>	<b>0.11 (0.09)<sup>c</sup></b>	<b>-0.29 (0.34)<sup>b</sup></b>	<b>-0.18 (0.11)</b>	<b>3.47*</b>
<b>Sibling Perpetration</b>					
Baseline <sup>1</sup>	0.04 (0.96)	-0.18 (1.10)	-0.21 (1.12)	-0.16 (1.17)	
Time 2 <sup>1</sup>	0.08 (0.95)	-0.25 (1.07)	-0.54 (1.13)	-0.41 (1.22)	
<b>Change<sup>2</sup></b>	<b>0.03 (0.03)</b>	<b>-0.06 (0.09)</b>	<b>-0.20 (0.13)</b>	<b>-0.14 (0.11)</b>	<b>1.79</b>

<sup>1</sup> Unadjusted means and standard deviations

<sup>2</sup> Adjusted means and standard error after controlling for baseline sociodemographic characteristics

\*\* p< 0.001, \* p<0.05

### 12.3.3.3 Change Scores

Change scores reflect the difference between baseline and Time 2 scores on each outcome variable. These were standardised as z-scores, with a positive value indicating an improvement over time, and a negative value showing a decline.

Unadjusted baseline and Time 2 scores, along with adjusted standardised means and standard errors for each outcome are presented in Table 11.

Changes in happiness and behavioural problems were found over time. Unadjusted scores showed that stable victims were the least happy and displayed the most behavioural problems both at baseline and Time 2; however, these scores only marginally changed over time. In contrast, escaped victims were unhappy and showed more behavioural problems at baseline, but displayed significant improvements on each measure by Time 2. New victims showed some evidence of behavioural problems at baseline, but these had significantly worsened by Time 2. Utilising the SDQ subscales to expand these findings, differences were found for emotional symptoms ( $F = 19.30, p < 0.001$ ) and peer relationship problems ( $F = 12.33, p < 0.001$ ), with new victims developing greater behavioural problems, but escaped victims improving in both of these areas.

Fewer differences were found according to parent or sibling relationships. Victims differed on the measure of negative parent-adolescent relationships; escaped victims reported less negative relationships at Time 2, while new victims experienced more negative relationships with their parents. No change was found for stable victims. A similar effect was observed for rates of sibling victimisation, with fewer escaped victims being picked on by siblings at Time 2, however, stable and new victims were bullied by brothers or sisters more often. No overall effects were found for either

positive parent-adolescent relationships, or for perpetration of aggression towards siblings.

#### **12.3.4 Sociodemographic Correlates of Escaped, Stable, and New Victimization**

The four groups of victims (non, escaped, stable, and new) were compared on a range of individual, social, and environmental variables at baseline to identify factors which may explain why some youth escaped victimisation, while others remained or became victims. Univariate comparisons were made using chi-square tests for categorical measures and ANOVA's for continuous measures. Results are presented in Table 12.

No differences were found between groups according to demographic characteristics, socioeconomic factors, or measures of household composition. Several variables relating to youth's parents showed a significant association. Escaped and stable victims were more likely to report more negative relationships with their parents ( $F = 17.74, p < 0.001$ ), and also experienced harsher parenting behaviour ( $F = 8.43, p < 0.001$ ). Compared to those of non-victims, the parents of stable victims displayed more mental health problems ( $F = 3.14, p < 0.01$ ) and psychological distress ( $F = 3.47, p < 0.05$ ). Parents of youth who were victimised also reported more conflictual partner relationships than parents of non-victims. All victims experienced slightly greater rates of involvement in sibling aggression, both as victims ( $F = 7.30, p < 0.001$ ) and perpetrators ( $F = 4.74, p < 0.01$ ). Escaped, stable, and new victims were also more likely to play truant from school ( $\chi^2 = 14.00, p < 0.001$ ), and to report that other children in their class often misbehaved ( $\chi^2 = 57.41, p < 0.001$ ) compared to non-victims.

The greatest differences between groups were observed in relation to the SDQ behavioural subscales. All victim groups showed more emotional symptoms ( $F = 47.37, p < 0.001$ ), conduct problems ( $F = 39.66, p < 0.001$ ), hyperactivity ( $F = 20.01, p < 0.001$ ), and peer relationship problems ( $F = 75.44, p < 0.001$ ) than non-victims. In addition, both escaped and stable victims displayed more emotional symptoms and peer relationship problems than new victims. Stable victims exhibited significantly more conduct problems than all other groups.

**Table 12** Comparison of Non-Victims, Escaped Victims, Stable Victims, and New Victims on Baseline Characteristics

	<b>Non-Victims<sup>a</sup></b> (N=1493)	<b>Escaped Victims<sup>b</sup></b> (N=184)	<b>Stable Victims<sup>c</sup></b> (N=84)	<b>New Victims<sup>d</sup></b> (N=112)	<b>p</b>
<b>Demographics</b>					
Sex: <i>Male</i>	720 (48.2)	101 (54.9)	43 (51.2)	55 (49.1)	NS
Ethnicity: <i>White</i>	1117 (75.4)	141 (77.0)	74 (88.1)	92 (82.9)	NS
<b>Socioeconomic Factors</b>					
Poverty: <i>Poor</i>	301 (20.2)	31 (16.8)	21 (25.09)	20 (17.9)	NS
Parental Education: <i>GCSE or less</i>	478 (33.4)	71 (39.5)	29 (36.3)	42 (39.2)	NS
Deprivation: <i>High</i>	548 (36.8)	80 (44.0)	39 (46.4)	44 (39.3)	NS
Financial Stress: <i>Any</i>	338 (22.8)	49 (26.6)	29 (34.5)	26 (23.2)	NS
<b>Household Composition</b>					
Parents at home: <i>One or less</i>	705 (52.8)	104 (56.5)	53 (63.1)	69 (61.6)	NS
Any siblings: <i>None</i>	161 (10.8)	24 (13.0)	13 (15.5)	17 (15.2)	NS
Household Size	4.43 (1.33)	4.47 (1.50)	4.25 (1.24)	4.28 (1.38)	NS
<b>Parent-Adolescent Relationships</b>					
Positive Relationship	-0.06 (0.97)	-0.06 (0.96)	-0.25 (1.01)	0.00 (0.97)	NS
Negative Relationship	0.14 (0.93) <sup>bc</sup>	-0.22 (1.11) <sup>a</sup>	-0.49 (1.05) <sup>ad</sup>	-0.06 (0.99) <sup>c</sup>	<b>0.001</b>
<b>Parenting Behaviour</b>					
Supportive parenting	0.00 (1.00)	-0.02 (1.04)	0.07 (0.84)	-0.00 (1.00)	NS
Harsh parenting	0.06 (1.00) <sup>bcd</sup>	-0.27 (0.94) <sup>a</sup>	-0.25 (1.05) <sup>a</sup>	0.00 (1.02) <sup>a</sup>	<b>0.001</b>

	Non-Victims <sup>a</sup> (N=1493)	Escaped Victims <sup>b</sup> (N=184)	Stable Victims <sup>c</sup> (N=84)	New Victims <sup>d</sup> (N=112)	<i>p</i>
<b>Parental Health</b>					
GHQ	0.03 (0.99) <sup>c</sup>	-0.12 (1.07)	-0.30 (1.13) <sup>a</sup>	-0.02 (1.00)	<b>0.01</b>
SF12 – Physical	0.07 (0.96)	-0.08 (1.10)	-0.14 (1.12)	0.08 (0.99)	<i>NS</i>
SF12 – Mental	0.07 (0.94) <sup>c</sup>	0.03 (0.93)	-0.26 (0.97) <sup>a</sup>	0.06 (0.89)	<b>0.05</b>
<b>Parent's Relationship</b>					
Harmonious	0.00 (1.00)	0.00 (0.98)	-0.08 (1.05)	0.03 (1.02)	<i>NS</i>
Conflictual	0.08 (0.95) <sup>bcd</sup>	-0.33 (1.18) <sup>a</sup>	-0.52 (1.02) <sup>a</sup>	-0.19 (1.06) <sup>a</sup>	<b>0.001</b>
<b>Sibling Bullying</b>					
Victimisation	0.00 (0.97) <sup>b</sup>	-0.33 (1.12) <sup>a</sup>	-0.24 (1.12)	-0.16 (1.17)	<b>0.001</b>
Perpetration	0.04 (0.95)	-0.18 (1.10)	-0.21 (1.12)	-0.16 (1.17)	<b>0.01</b>
<b>School Factors</b>					
Number of Friends	0.01 (0.97)	-0.06 (1.02)	-0.09 (1.29)	-0.06 (0.99)	<i>NS</i>
Play truant: Yes	82 (5.5)	19 (10.4)	9 (10.7)	13 (11.7)	<b>0.01</b>
Misbehave: Often or more	114 (7.7)	19 (10.4)	8 (9.6)	14 (12.6)	<i>NS</i>
Others misbehave: Often or more	625 (42.0)	120 (65.2)	58 (69.0)	60 (53.6)	<b>0.001</b>
<b>Behavioural Problems</b>					
Emotional Symptoms	0.11 (0.93) <sup>bcd</sup>	-0.62 (1.12) <sup>ad</sup>	-0.80 (1.23) <sup>ad</sup>	-0.23 (0.96) <sup>abc</sup>	<b>0.001</b>
Conduct problems	0.12 (0.96) <sup>bcd</sup>	-0.44 (1.06) <sup>ac</sup>	-0.77 (1.07) <sup>abd</sup>	-0.27 (1.04) <sup>ac</sup>	<b>0.001</b>
Hyperactivity	0.05 (0.98) <sup>bcd</sup>	-0.32 (0.97) <sup>a</sup>	-0.62 (1.03) <sup>a</sup>	-0.25 (0.98) <sup>a</sup>	<b>0.001</b>
Peer Problems	0.14 (0.87) <sup>bcd</sup>	-0.67 (1.22) <sup>ad</sup>	-0.93 (1.18) <sup>ad</sup>	-0.27 (1.06) <sup>abc</sup>	<b>0.001</b>
Prosocial	0.11 (0.92)	0.04 (0.96)	-0.01 (0.88)	-0.05 (1.16)	<i>NS</i>

\*N( %) for Categorical Measures, M(Sd) for Continuous Measures

## 12.4 Discussion

Firstly, this study examined the experiences of bullied youth and found that both those who were stable peer victims over two years and those who were currently bullied had poorer outcomes than those who were never bullied or who had escaped from being victimised over the last two years. Secondly, the study identified factors that were linked to stability of victimisation, escaping or becoming a new victim. Sociodemographic characteristics and family composition showed no relationship to victimisation status, however, a more conflictual and negative home environment along with behaviour problems predicted stable victimisation.

In line with recent studies, these findings confirm the presence of a dose-response relationship (Bogart et al., 2014; Bowes et al., 2013; Wolke, Copeland, et al., 2013). Stable victimisation was associated with poor behavioural, psychological, and social outcomes. Compared with escaped victims, stable victims were less happy, and displayed a range of problematic behaviours, including emotional symptoms, conduct problems, and difficulties interacting with peers. While similar behavioural and mental health outcomes associated with continued victimisation have been reported elsewhere (Bogart et al., 2014; Bowes et al., 2013; Scholte et al., 2007), the present findings also indicate links with behaviour at home, whereby stable victimisation at school over time negatively impacted on youth's relationships with their siblings.

Examining how stable victims performed on each of the outcome variables over a period of two years revealed that, rather than becoming increasingly worse, they tended to remain relatively stable over time. Scores on measures of happiness, behavioural problems and parent-relationships were almost identical at baseline and

Time 2. In contrast new victims suffered a negative reaction to being bullied and individual functioning and relationships in the family deteriorated. Being stably or persistently bullied may not further exacerbate the outcomes, but rather maintain them at a level well below that of their peers. The only change observed was in relation to sibling aggression: stable victims were both victimised but also perpetrated aggression towards their siblings slightly more at Time 2 than at baseline, however, this change was not significant. Although the present findings, as well as those from recent longitudinal studies (Bogart et al., 2014; Wolke, Copeland, et al., 2013), have indicated that youth who experience persistent victimisation are likely to suffer more negative outcomes, the stability of low happiness and high behaviour problems over time suggests that, according to the measures used in the present study at least, there may be a floor effect to the damage that bullying causes at school age. Stable victims were functioning on average at up to 1 standard deviation below those not being victimised. Follow-up into adulthood may indicate whether the adverse effects remain, in particular, for those with stable victimisation experience. Furthermore, children who were stable victims may have been previously bullied for years at the time of the baseline assessment. Being bullied is moderately stable with children bullied at primary school also more likely to be bullied at secondary school despite changes in social context and pupils (Schäfer et al., 2005; Sourander et al., 2000), distinguishing them from those who escaped. Unfortunately, this could not be tested as children in families only participated if they had reached their 10<sup>th</sup> birthday. While the dose-response relationship is generally supported, the findings also show evidence of a strong recency effect, which has been observed in many other areas of development, such as cognitive functioning (Bornstein, Hahn, & Wolke, 2013). Youth who were being bullied at the time of follow-up, including both new and

stable victims, reported substantially poorer concurrent outcomes than either escaped victims or non-victims. After controlling for baseline scores, new victims actually performed slightly worse than stable victims on psychological and behavioural outcomes. These findings closely resemble those of Juvonen et al. (2000), who suggested that in some circumstances, current experience of being bullied may more accurately predict outcomes than the stability of victimisation.

Examining changes in outcome scores over time, two clear trends emerged. Firstly, compared to non-victims who showed little change over time, escaped victims performed significantly better on behavioural and psychological measures at Time 2 than at baseline. Escaping victimisation significantly improved their relationships with their parents. It has previously been suggested that the ill effects of being bullied may fade away once the victimisation stops (Scholte et al., 2007). Although these findings partially support this, they are more in line with that of Smith et al. (2004) who found that while there was notable improvement among escaped victims, some residual impact remained. As the Time 2 scores indicate, despite no longer being bullied, escaped victims still differed from non-victims in terms of their happiness, behaviour, and family relationships. This is consistent with longer term follow-up studies into adulthood that show that being bullied at any time in childhood may have lingering effects many years later (Copeland et al., 2013; Sourander et al., 2007; Stapinski et al., 2014; Takizawa et al., 2014; Wolke, Copeland, et al., 2013).

Secondly, the strong impact that being bullied can have is shown by the changes in functioning in new victims over the two year observation period, who displayed significant deterioration in outcomes at Time 2. Compared to all other groups, new victims were significantly less happy and reported more problematic behaviour,

including emotional symptoms, and peer relationship problems, at Time 2 than at baseline. This is consistent with findings of genetically sensitive research designs that consistently showed worsening of emotional functioning once exposed to bullying (Arseneault et al., 2008). In other words, bullying is an environmental trauma with short and long term adverse effects on psychological functioning.

There was also some evidence of worsening familial relationships with parents and siblings; however, this decline was not statistically significant. Few studies have tracked youth before they become victims of bullying. Although it is not surprising that new victims suffer some immediate consequences from being bullied, that they scored the same as, or in some cases, slightly worse than stable victims, is particularly concerning. As Juvonen et al. (2000) suggest, the consequences of victimisation may be as much dependent on timing or context than having accumulated over time.

The second purpose of this study was to identify background characteristics which might explain why some youth escape victimisation while others do not. A wide range of demographic, socioeconomic, family, school and individual characteristics were considered, however, few of these showed any association with the stability and recency of victimisation. All youth who experienced victimisation tended to report more negative and aggressive home environments, which is consistent with literature on general victimisation, which finds victims are more likely to experience harsher parenting behaviour (Lereya, Samara, et al., 2013), more domestic violence (Baldry, 2003), and aggressive sibling relationships (Tippett & Wolke, 2014a). All youth who were bullied also tended to play truant from school more, and to report that other members of their class misbehaved regularly. However, according to self-reports, no differences in number of friends with peers were found, which is contrary to previous

studies that have suggested that fewer friends increase the risk of being bullied and more friends protect against stable victimisation (Hodges et al., 1997). However, it may be the quality of friendships and relationships rather than the number of friends that predict escaping or becoming a victim (Wolke, Woods, et al., 2009).

The clearest associations of changes in victimisation status were found in relation to behavioural characteristics. At baseline, both stable and escaped victims showed more emotional symptoms, conduct problems, hyperactivity, and peer relationship problems than non-victims; however, these behavioural characteristics may have resulted from youth's experiences of victimisation, and does not explain why they were bullied. These two groups differed on one characteristic: stable victims displayed more conduct problems than escaped victims. This may suggest that stable victims may be more often victims who also bully, a group previously identified to be a high risk group for adverse outcome (Arseneault et al., 2010). Due to the low rates of bullying perpetration within the sample, this study was not able to distinguish between pure victims and bully-victims in relation to stability or recency; however, post-hoc analysis indicated that bully-victims were significantly overrepresented in the stable victim category. Bully-victims tend to be the least well-adjusted of all children involved in bullying (Nansel et al., 2001). Considering that these youth experienced more stable victimisation in the present study, it may be surmised that youth with the poorest behaviour, or who respond to bullies through aggression, are at risk of more persistent and stable victimisation, and therefore less likely to escape. The other key finding to emerge was that youth who became newly bullied were distinguishable from non-victims on the basis of their behaviour. New victims displayed more emotional symptoms, more conduct problems, were more hyperactive and had more problems in peer relationships than non-victims at

baseline. This finding is of particular importance in targeting preventative intervention programs, which aim to stop bullying before it occurs. Youth who display problematic behaviour are at significantly increased risk of becoming bullied, and as the Time 2 outcomes show, being bullied only serves to exacerbate these problems. Identifying, and providing support for these youth at an early age may reduce the risk of them being bullied, and increase their chances of positive outcomes in later life.

Despite its strengths such as its representative sampling and prospective design, this study has a number of limitations. Firstly, there was substantial dropout between baseline and Time 2. Dropout analysis indicated that fewer ethnic minority participants, as well those from lower socioeconomic backgrounds, responded at Time 2. Greater attrition of participants from low socioeconomic backgrounds has been consistently found in other longitudinal research (de Graaf et al., 2000; Wolke, Waylen, et al., 2009). However, those who dropped out and stayed did not differ in whether they had been bullied or not, which was the major independent variable of interest. Background sociodemographic characteristics were controlled for throughout the analysis to partially accommodate for this; however, the final sample was lower than initially expected. Secondly, while the study incorporated a broad range of sociodemographic factors, there may be other unmeasured confounders which could explain why some youth are able to escape being bullied. Thirdly, the outcome scales pertaining to parent-adolescent relationships showed low internal consistency. In some cases alpha scores of around 0.6 are acceptable (Moss et al., 1998), and the low values obtained in this study likely result from the small number of items in each scale. Due to budgetary constraints and restrictions on the survey length, it was not possible to use more in-depth measures.

Being bullied by peers is linked with a range of negative consequences; however, the severity of this depends, in part, on the nature of the bullying. Stable, prolonged victimisation leads to consistently poor outcomes over time, and stable victims appear to be at greater risk of problems in later-life (Wolke, Copeland, et al., 2013). When considering short-term outcomes, recency appeared to have a significant impact; youths who are currently being bullied report the poor outcomes, irrespective of how long the bullying has lasted. There was also evidence of behavioural and psychological improvements among youth who had managed to escape bullying. Future research on the impact of peer bullying must make efforts to address concepts of stability and recency, as these may have a major effect on the severity of outcomes. Notable is that sociodemographic characteristics were not able to explain why some youth experienced more stable victimisation than others, which is consistent with recent cumulative evidence (Tippett & Wolke, 2014b). However, differences in individual behaviour were found, with stable victims displaying greater conduct disorder than escaped victims. New victims also displayed behavioural problems at baseline which may have led to them being more likely to be picked on and bullied (Reijntjes et al., 2010). The findings have implications for anti-bullying efforts. Potential victims may be identified through existing behavioural problems, allowing preventative measures to be implemented which can help them avoid becoming bullied. Stable victims are in need of continued support which addresses their psychological and behavioural issues, and impedes the cycle of bullying. Finally, escaped victims, although able to improve with time, still show residual effects, and therefore may require ongoing support even after they are no longer bullied by peers.

## Chapter 13 Overall Discussion

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This chapter provides a summary of the key findings from each of the five studies, and a brief discussion integrating the findings in relation to ecological systems theory (Bronfenbrenner, 1979), the overarching model for this research which was presented in Chapter 2. Strengths and limitations of the research are discussed, and implications and suggestions for future research identified.

The aims of this research were twofold. Firstly, this thesis set out to identify individual and sociodemographic correlates and risk factors which were associated with involvement in school bullying. Factors across multiple levels of children's socio-ecological environments were considered, with specific focus on the exosystemic (socioeconomic status), microsystemic (sibling and parent relationships), and individual (ethnicity, behaviour, psychological characteristics) layers. Studies 1-3 focused on three factors which had been under-researched, or showed controversial associations with bullying: socioeconomic status, sibling aggression, and ethnicity. Study 4 then drew together correlates spanning multiple layers of the ecological model to determine which characteristic or group of characteristics was most strongly associated with victim, bully, and bully-victim roles. Secondly, this thesis explored stability and recency of bullying in relation to the outcomes and risk factors associated with victimisation. Comparisons between stable, new and escaped victims were made to determine whether stable victimisation

was associated with greater consequences, and if escaping victimisation could lead to improvements on psychological and social outcomes.

### **13.1 Summary of Results**

Study 1 examined the relationship between socioeconomic status and involvement in school bullying. The results showed significant, but weak associations. Being a victim was positively related to low SES, and negatively associated with high SES. Bully-victim status was related to low SES, but not high. Bullying perpetration was the most weakly related, with bullies only slightly less likely to come from higher socioeconomic backgrounds. Overall, the findings indicated a slightly increased risk of victimisation at lower socioeconomic levels, however, bullying perpetration appeared to be found across all socioeconomic strata with only small variations.

Study 2 identified the association between sibling aggression and involvement in school bullying. Due to the lack of research in this area, the study also explored the nature and correlates of sibling aggression. Firstly, sibling aggression was widespread, with nearly half of youths regularly being victimised or perpetrating aggression towards siblings. Most demographic, household and socioeconomic characteristics were only weakly associated: negative parenting behaviour showed the strongest relationship to sibling aggression. When explored in relation to school bullying, a moderate-to-strong homotypic relationship was found. Victimisation by siblings was linked to being bullied by peers, and children who perpetrated aggression towards siblings more often bullied others at school (as bully or bully-victim).

Study 3 investigated whether involvement in school bullying differed according to ethnicity. The findings indicated that overall, there were few differences in rates of

victimisation or perpetration of bullying between ethnic groups. Ethnic minority youth were no more likely to be victims than White youth, but showed slightly greater rates of bullying others. Focusing on specific ethnic groups, African and Bangladeshi boys and girls were slightly less likely to be victimised by peers, while Caribbean and Pakistani girls reported bullying others more often when compared to White British girls.

Study 4 used measures spanning multiple layers of the socio-ecological model to determine which characteristic, or group of characteristics, was most strongly associated with roles in school bullying. Once all factors were considered, socioeconomic and household characteristics were found to have little direct impact. While parenting behaviour showed only univariate associations, sibling relationships, specifically involvement in sibling aggression, predicted bully and bully-victim roles even after controlling for other factors. Individual and demographic characteristics, including sex, age, happiness and behavioural problems showed the strongest relationship, and were uniquely associated with victim, bully, and bully-victim roles.

Study 5 examined the outcomes and risk factors of being bullied according to both the stability and recency of victimisation. The findings showed that those who were stable victims of bullying over a two year period, as well as those who were currently bullied, had the poorest psychological, behavioural and social outcomes. Importantly, escaping victimisation led to significant behavioural and psychological improvements, although some lingering effects of being bullied still remained. Considering correlates and risk factors, sociodemographic characteristics were only weakly associated with the stability or recency of victimisation; however, a more conflictual and negative home environment and greater behavioural problems predicted more stable victimisation.

## 12.2 Integrated Discussion

Identifying individual factors associated with involvement in school bullying has important implications for research and practice; however, as the findings from this thesis showed, no one factor alone can explain why children are involved in school bullying as victims, bullies or bully-victims. Rather, correlates and risk factors associated with roles in school bullying are numerous, spanning all layers of a child's socio-ecological environment, and varying in the strength of their association. This thesis considered a range of individual, microsystemic, and exosystemic characteristics, and when taken as a whole, the findings clearly show that the closer these influences are to the child, the more strongly they are linked to involvement in school bullying. Factors located within the inner layers of the socio-ecological model, such as individual characteristics or sibling relationships, showed strong associations, while those in the outer layers, such as socioeconomic status, had little impact on whether children were more often involved in school bullying.

The most distant characteristic considered in the present research was socioeconomic status, an exosystemic risk factor. The weak link between socioeconomic status and bullying roles was somewhat surprising considering that individual characteristics linked with bullying, including aggression, anti-social behaviour, and behavioural difficulties, are all found at greater rates among lower socioeconomic strata (Bolger et al., 1995; Bradley & Corwyn, 2002; Leventhal & Brooks-Gunn, 2000; Loeber et al., 1995; McLeod & Shanahan, 1993). Although some univariate associations between bullying roles and socioeconomic measures were found in Study 4, these disappeared after controlling for other characteristics, suggesting that more immediate environmental factors, such as sibling relationships or parenting

behaviour, may moderate this relationship, and are more appropriate for predicting involvement in school bullying.

Moving toward the central layers of the socio-ecological model, microsystemic characteristics, including parent and sibling relationships, showed a much stronger association to school bullying roles. Parenting behaviour and relationships between children and their parents moderately predict roles taken in school bullying (Bowes et al., 2009; Lereya, Samara, et al., 2013); however, very little research has considered whether children's relationships with their siblings will have the same effect. The findings showed that involvement in sibling aggression was able to predict roles in school bullying, even after controlling for multiple individual and environmental risk factors. In contrast, although univariate associations were found between bullying roles and parenting characteristics, these disappeared in the fully adjusted model. The findings suggest that sibling relationships may predict involvement in school bullying over and above parenting characteristics.

Considering the greater amount of time that children spend with their siblings compared to with their parents, as well as the formative role that siblings have upon each other's social and emotional development (Kramer & Conger, 2009), it is surprising that so little research has investigated the link between sibling relationships and bullying at school. While the findings presented here are cross-sectional and do not indicate a causal relationship, sibling aggression among infants has been found to be predictive of bullying peers in a laboratory setting one year later (Ensor et al., 2010); thus, it would appear that bullying among peers may begin at home. There is a clear lack of research, not just on the link with school bullying, but on sibling aggression more generally (Eriksen & Jensen, 2006; Krienert & Walsh,

2011; Tucker, Finkelhor, Shattuck, et al., 2013), and further research is needed to better understand its nature, consequences and association with school bullying.

The inner-most layer of the socio-ecological model comprises individual characteristics, and, in combination with sibling aggression, it was these factors that showed the strongest association to school bullying. Behavioural problems emerged as significant predictors: both victim and bully-victim roles were associated with more emotional symptoms and peer relationship problems. Although the present findings, in combination with existing literature, showed that the experience of being bullied can lead to adverse behavioural and psychological outcomes (Connolly et al., 2000; Gini, 2008; Sourander et al., 2007), Study 5 also showed that children who became victims (including pure victims and bully-victims) already displayed some problems prior to being bullied. Thus, while behavioural problems may be further exacerbated by the experience of being bullied, they are also significant risk factors which increase the likelihood of children being victimised.

In contrast to the findings for victims and bully-victims, bullies showed fewer associations with individual characteristics, and overall, appeared to be relatively well-adjusted. This supports the view that bullies are emotionally stable and popular within their peer group, and not the aggressive, inept “oafs” they are often portrayed as (Gini et al., 2011; Sutton et al., 1999; Woods et al., 2009). Longitudinal research has shown that bullies suffer few negative consequences for their behaviour (Copeland et al., 2013; Copeland et al., 2014; Wolke, Copeland, et al., 2013), and therefore future studies should focus on the underlying motivations which cause relatively well-adjusted children to begin bullying their peers. One intriguing finding for bullies was the association with ethnicity. While ethnic minority children were not at any greater risk of victimisation, higher proportions of bullies were found in

specific ethnic groups, even after controlling for individual and sociodemographic risk factors. Previous explanations for this have focused on differences in parenting or attitudes towards aggression between ethnic groups (Krieger, 2000; Österman et al., 1994; Sawyer et al., 2008), and it may be that ethnicity, in combination with other socio-ecological factors, can lead to a greater likelihood of bullying others.

The final study in this thesis focused on the timing of bullying behaviour, thereby incorporating the outer layer of the socio-ecological model, the chronosystem, into research on school bullying. Few studies have considered the effect of changes in bullying over time, and these findings offered new insight into how the outcomes of bullying differ according to the stability and recency of the bullying experience.

Firstly, there was clear evidence of a dose-response relationship, which is consistent with other research on the health-related, social, occupational, and academic outcomes of victimisation (Copeland et al., 2013; Rueger et al., 2011; Schreier et al., 2009; Smith et al., 2004; Wolke, Copeland, et al., 2013; Zwierzyńska et al., 2013).

Secondly, children who had managed to escape being bullied demonstrated significant improvements on individual and social outcome measures. This is a particularly important finding, as it shows that if stopped early enough, the adverse consequences of being bullied can be limited. Although Study 5 found few differences between stable and escaped victims on individual or sociodemographic measures, determining why some children remain as stable victims of bullying while others are able to escape has important implications for anti-bullying interventions, and should be a priority for future research.

Overall, this thesis provides strong support for the use of the socio-ecological model in bullying research, as it allows for individual and social correlates and risk factors to be arranged in a way that accounts for their relative strength and interrelations.

Distant influences, such as socioeconomic status, had little impact on involvement in school bullying, while factors pertaining to children's more immediate environments, such as sibling relationships, had a much stronger effect, and may mediate more distant risk factors. Furthermore, while individual characteristics were among the strongest predictors of bullying roles, these alone were not sufficient to explain involvement in school bullying; the child's social environment also needed to be considered. Finally, incorporating the chronosystem into the research identified how changes over time can affect the outcomes of being bullied. The findings illustrate the need for research to consider all aspects of a child's socio-ecological environment, including wider societal influences, relationships with siblings, and the importance of time when examining the correlates and consequences of bullying at school.

### **13.3 Strengths and Limitations of the Research**

There are a number of strengths to the present research. Firstly, the Understanding Society sample was designed to be nationally representative of the UK as a whole (Buck & McFall, 2012), and included almost 5,000 youth at Wave 1, which is relatively large in comparison to other studies on school bullying. As an additional design benefit, the project's specific focus on ethnic minority participants ensured there were sufficient numbers of participants from the five main ethnic minority groups in the UK: Indian, Pakistani, Bangladeshi, Caribbean and African.

One of the greatest strengths of using Understanding Society was the breadth of topics it covered. Measures used in the present research included demographics, socioeconomic factors, household structure, parenting behaviours, sibling relationships, and health, behavioural, and psychological characteristics. Few studies

include such a diverse range of measures. In some cases, data were collected from multiple respondents, thus, there was cross-validation on some measures (e.g. parenting behaviour and relationships).

Three sets of measures used in the study were of particular relevance to the research questions. Firstly, reliable measures of sibling aggression were used (Wolke & Samara, 2004; Wolke & Skew, 2012), which was particularly important considering the lack of consistency between studies in this area. These measures had been previously used, thereby validating their appropriateness for assessing sibling aggression, and allowing for comparisons to be made with other studies in the area. Secondly, the measure of ethnicity incorporated in the study was based on the National Census; therefore, it offered an accurate and reliable assessment of ethnic differences (ONS, 2007, 2012). Previous studies in the UK have often relied on more basic ethnic majority versus ethnic minority distinctions (Boulton & Smith, 1992; Eslea & Mukhtar, 2000). Finally, due to its economic focus, multiple measures of socioeconomic status were available. This was important considering that individual indicators may show differential associations with involvement in school bullying (Galobardes, Shaw, Lawlor, & Lynch, 2006; Galobardes, Shaw, Lawlor, Lynch, et al., 2006).

Lastly, the range of measures available was a key strength of this study as it enabled multivariate statistical techniques. Many studies which examine the correlates and risk factors for school bullying tend to focus on a single predictor variable, or group of predictors, without adjusting for potentially confounding factors. Throughout much of the analysis, demographic, household, family, and individual factors were controlled for, or entered simultaneously as predictor variables, enabling individual

factors and roles in school bullying to be explored in relation to children's socio-ecological contexts.

Despite the many benefits, several limitations also need to be considered when interpreting the research findings. Firstly, in Studies 1-4, it is important to note that the data were cross-sectional, and therefore findings only imply an association rather than a causative relationship. Cross-sectional studies can be used to identify potential risk factors associated with school bullying, the effect of which can then be explored through further longitudinal research. At the time of these studies, only data from the first three waves of Understanding Society were available; however, as the study progressed over time, longitudinal research using the same measures will be possible (Kraemer et al., 2001).

Secondly, Study 5 drew on longitudinal data across 3 waves of Understanding Society; however, there was substantial dropout during this time. In part this was due to participants aged 16 or over responding to the adult questionnaire, although a substantial number of participants also discontinued their participation in the study completely. Dropout analysis indicated that fewer ethnic minority participants, as well as those from lower socioeconomic backgrounds, responded at Time 2; this is consistent with patterns of selective dropout in other large scale longitudinal studies (de Graaf et al., 2000; Wolke et al., 1995; Wolke, Waylen, et al., 2009). Although high dropout rates may have an effect on key measures, those who dropped out of the study did not differ in whether they had been bullied or not, the major independent variable of interest.

Thirdly, measures used in Understanding Society were agreed upon by a committee and selected far in advance of data being collected, therefore it was not possible to

control which measures of bullying were used. Consistent with much research in this area, the six items used in the present study to assess school bullying were treated as categorical variables, with a cut-off point based on repetition. Using these items categorically ensured consistency with the definition of school bullying (i.e. only those who experienced behaviour on a regular basis), but also allowed for identification of a bully-victim group, who are of particular interest given the unique risk factors and outcomes associated with the role. Categorising data in this way, rather than using it continuously, can lead to a loss of information and power, due to the variability in the dataset being reduced (Altman & Royston, 2006). Furthermore, using data categorically assumes the relationship between predictor and outcome variables is equal within each category, thereby creating significant heterogeneity which may cause residual confounding (Altman & Royston, 2006; van Walraven & Hart, 2008). The use a multi-item scale to assess bullying involvement would have provided greater power, and a more valid and reliable assessment, however, this was not possible within the present study. A further limitation based on the financial and spatial requirements, was the number of questions available concerning parenting behaviour. The scales used to assess parental relationships showed low internal consistency. A traditional cut-off point of 0.7 is usually applied, however, alpha scores of around 0.6 are generally acceptable, and more likely when scales are comprised of few items (Moss et al., 1998), therefore the decision was taken to include them within the analysis.

Fourthly, including multiple members of a family in the same analysis violates the assumption that the data is independent. In an individual level study, it is assumed that data from one individual is not related to that obtained from another. The present research used multiple youth respondents from the same family, who would have

experienced the same home environment, and thus the data they provided was non-independent. This is particularly important for measures of parenting behaviour, which were reported for all children, not just one specific child within the family. Both ANOVA and regression techniques assume independence within the sample, therefore when non-independent data is used, standard errors can be underestimated, resulting in less strict tests of significance, and a greater likelihood of Type I error (Bliese & Hanges, 2004; Grawitch & Munz, 2004). To account for non-independence, a control variable identifying the number of respondents within each family was used in the analysis for studies 2, 4 and 5, however, to ensure data are fully independent, only one participant from each family should be included in the analysis.

Fifthly, conducting multiple tests simultaneously increases the likelihood of obtaining a Type I error, therefore corrections should be applied to the p-value to account for the number of tests being performed (Bland & Altman, 1995). Multiple comparisons were not accounted for in studies 2 and 3, however in studies 4 and 5, Bonferroni corrections were applied to chi-square tests, and Scheffe's method used for ANOVA's and ANCOVA's.

Sixthly, despite having a large sample size and robust statistical findings, the number of children who reported bullying others was relatively small. Small sample sizes, which in this case include both the bully and bully-victim groups, can reduce the statistical power of tests, and increase the likelihood of a Type II error, whereby the null hypothesis is wrongly rejected. Small sample sizes, and in particular a lack of bully-victims, have been a problem for much research on school bullying. Although the current data is based on only a small number of children, significant associations were still observed with several individual and sociodemographic characteristics,

albeit marked by large confidence intervals. Future research should attempt to confirm and clarify the strength of these associations.

Seventhly, although a wide range of correlates and risk factors were included and controlled for throughout much of the analysis, there is always the possibility that the findings are attributable to residual confounds not included in the analysis. In particular, no measure of parental maltreatment was available. Children who experience one form of violence (e.g. peer bullying) are at greater risk of other types of violence (e.g. parental maltreatment, sibling aggression) (Finkelhor, Ormrod, & Turner, 2007), and to identify the individual and cumulative outcomes, it is important to consider all types of victimisation concurrently. Furthermore, no measures pertaining to the school or neighbourhood were available to use in the research, however, the possibility to link the Understanding Society dataset with school and neighbourhood level data may resolve this issue in future research.

Finally, the use of meta-analytic techniques in Study 1 led to some unique limitations. Primarily, there was significant heterogeneity in the results, with moderator analysis indicating differences according to which socioeconomic measure was used, the country in which the study took place, whether data were cross-sectional or longitudinal, and the age of the participants. The low number of studies overall meant few trends could be observed through the moderator analysis; however, the analysis used a random effects model to account for the lack of homogeneity within the sample. Additionally, while there is some evidence that the association between bullying roles and socioeconomic status may differ according to type of bullying or age and sex differences (Wang et al., 2009), there were too few studies to sufficiently explore this in the analysis. Finally, some evidence of

publication bias was found, which may have an effect on the results; however, this was adjusted for in the final models.

### **13.4 Implications and Future Directions**

This thesis contributes towards the knowledge base on bullying in three ways.

Firstly, it resolves controversial findings and gaps in the literature in relation to three key risk factors: socioeconomic status, sibling aggression, and ethnicity. The lack of consistent findings in these areas is largely bought about by either a lack of research, or through the use of weak (e.g. using a majority vs minority measure of ethnicity) or incomparable (i.e. differing definitions of sibling aggression) measures. Where reliable and validated measures have been used, clearer results have been obtained (Bradshaw, Sawyer, & O'Brennan, 2009; Due, Merlo, et al., 2009; Jansen et al., 2012; Spriggs et al., 2007; Wolke & Skew, 2012). The present findings add support for the need to use robust and validated measures, such as the census based categorisation for ethnic groups (ONS, 2007), or tried-and-tested assessments of sibling aggression (Wolke & Samara, 2004). Furthermore, the use of meta-analytic techniques can be used to clarify the strength of an association, provided there are a sufficient number of studies in that area.

The findings for both socioeconomic status and ethnicity suggest that anti-bullying interventions should not specifically focus on children from ethnic minority or low socioeconomic groups; however, it should be recognised that in combination with other family risk factors, these characteristics may increase the likelihood of children being bullied or bullying others. Sibling aggression on the other hand showed a strong relationship to school bullying. That sibling relationships may have a causative impact on peer relationships (Ensor et al., 2010) suggests school-based

interventions may also need to consider children's relationships at home.

Furthermore, the lack of research in the area, and the currently poor understanding of sibling aggression, indicates the need for research to document the nature, consequences, and correlates of aggression between siblings. At present, aside from a few small programs designed to promote positive sibling relationships (Feinberg et al., 2013; Kennedy & Kramer, 2008), there are no large-scale, evaluated interventions designed to prevent sibling aggression or bullying (Bowes et al., 2014).

Secondly, the socio-ecological model allowed for school bullying to be explored as a function of children's wider social environments. The model helped to identify factors operating outside of the child's immediate vicinity, assessing the relative strength of each, and exploring how these factors interacted with each other to increase the risk of (or protect against) children being bullied or bullying others. At present however, there remain large gaps in our understanding. While much of the research has focused on central components of the socio-ecological model, primarily individual characteristics and microsystemic interactions, fewer studies address the outer layers of the model. Each layer can have an impact on whether or not children are involved in bullying, and thus offers opportunities for further research.

At the mesosystemic level, little is currently known about interactions between other family members. As a multi-informant study, *Understanding Society* includes data from siblings and parents which could be used to determine the amount of familial conflict or hostility witnessed by the child, and to what extent this is associated with involvement in school bullying. Furthermore, questions concerning parental involvement in children's schoolwork may give an insight into whether more communication and interaction between teachers and parents can reduce the likelihood of children being involved in school bullying.

Exosystemic factors show some associations with school bullying; for example the greater rate of victimisation among children from low socioeconomic households (see Chapter 8), and the higher prevalence of bullying in low socioeconomic level schools (Bowes et al., 2009); however, much of this research only identifies individual associations, and does not consider these characteristics concurrently. It may be that children from low socioeconomic households are more likely to attend low socioeconomic schools, in which case the greater risk of victimisation could be attributable to the home environment, the school environment, or both. Furthermore, there may be a cumulative impact, such that coming from a low socioeconomic household, and attending a low socioeconomic school jointly increase the risk of being bullied. Future research is needed which considers exosystemic factors spanning multiple environments in order to determine to what extent each environment is dependent upon the other, and thus how well exosystemic factors can predict roles in school bullying.

The contribution that the macrosystem makes towards explaining bullying is perhaps the most poorly understood at present, possibly resulting from the breadth of this layer, which includes social and cultural characteristics spanning local, regional, and national levels. While cross-cultural comparisons are beyond the realms of the present research, Understanding Society does offer the opportunity for data linkages which could be used to identify local or regional characteristics associated with school bullying. In particular, linkages to governmental datasets covering geographic, educational, health, crime, and economic circumstances offer the potential to explore macrosystemic factors including school or neighbourhood income setting, urbanicity, socioeconomic inequality, and rates of community violence or social disorganisation. Traditionally, research on bullying has utilised

smaller classroom or school based samples which has precluded the chance to explore wider societal characteristics, however, recent large scale, population based surveys are now beginning to present opportunities to explore how macrosystemic characteristics can influence whether or not children are involved in school bullying.

Although it is important to identify individual associations with school bullying across each layer of the socio-ecological model, the findings from Study 4 illustrated the need to consider how factors interact across multiple individual and social domains. In isolation, many singular characteristics were linked to involvement in school bullying, yet multivariate analysis revealed that some of these associations were relatively weak, and most likely moderated by individual (behavioural or psychological) or familial (parent and sibling relationships) risk factors. Therefore, although gaps in our knowledge must be filled, it is important that findings are interpreted with consideration to children's whole socio-ecological environment.

Lastly, the final study identified the importance that timing plays on the impact of victimisation. Although a wide range of outcomes have been linked with the experience of being bullied, until recently, few studies have accounted for either the stability or recency of bullying behaviour. Following groups of escaped, new, and stable victims over two years revealed several key implications. Stable victims showed consistently poor outcomes over time, and were in need of support both to stop the bullying, and to help with their adjustment. Although new victims showed a similar level of problems to stable victims, it was clear that they already had some behavioural difficulties prior to being bullied. Preventative intervention programmes could be provided to children who exhibit behavioural problems in order to reduce the risk of them becoming bullied at a later stage. Finally, it was reassuring that escaped victims appeared to show improvements on outcome variables, and this may

be explained by factors of resilience situated within their own socio-ecological environments (Masten & Coatsworth, 1998). Individual characteristics, such as high self-esteem and a sense of belonging (Jordan, 2013; Prilleltensky, Nelson, & Peirson, 2001), as well as strong family relationships (Rutter, 1999) and quality peer friendships (Collins & Laursen, 2004) have been shown to enhance childhood resilience, however, research has only recently begun to examine these factors in relation to school bullying (Bowes et al., 2010; Papatraianou et al., 2014; Vandoninck, d'Haenens, & Roe, 2013). This is an area of research that requires significantly more attention to better understand the multitude of factors that can enable victims to escape being bullied, and reduce the adverse consequences of peer victimisation.

## References

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- Aber, J. L., Bennett, N. G., Conley, D. C., & Li, J. (1997). The effects of poverty on child health and development. *Annual Review of Public Health, 18*, 463-483. doi: 10.1146/annurev.publhealth.18.1.463
- Abrams, D. (2010). Processes of prejudice: Theory, evidence and intervention *EHRC Research Report no. 56*. Manchester: Equality and Human Rights Commission.
- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101*, 213-232.
- Alexander, C. E. (2000). *The Asian gang: ethnicity, identity, masculinity*. Oxford, UK: Berg.
- Alikasifoglu, M., Erginoz, E., Ercan, O., Uysal, O., & Albayrak-Kaymak, D. (2007). Bullying behaviours and psychosocial health: Results from a cross-sectional survey among high school students in Istanbul, Turkey. *European Journal of Pediatrics, 166*, 1253-1260. doi: 10.1007/s00431-006-0411-x
- Altman, D. G., & Royston, P. (2006). The cost of dichotomising continuous variables. *BMJ, 332*, 1080. doi: 10.1136/bmj.332.7549.1080

- Amato, P. R. (2001). Children of divorce in the 1990s: An update of the Amato and Keith (1991) meta-analysis. *Journal of Family Psychology, 15*, 355-370. doi: 10.1037/0893-3200.15.3.355
- Amato, P. R., & Keith, B. (1991). Parental divorce and the well-being of children: A meta-analysis. *Psychological Bulletin, 110*, 26-46. doi: 10.1037/0033-2909.110.1.26
- Amone-P'Olak, K., Burger, H., Ormel, J., Huisman, M., Verhulst, F. C., & Oldehinkel, A. J. (2009). Socioeconomic position and mental health problems in pre-and early-adolescents. *Social Psychiatry and Psychiatric Epidemiology, 44*, 231-238. doi: 10.1007/s00127-008-0424-z
- Analitis, F., Velderman, M. K., Ravens-Sieberer, U., Detmar, S., Erhart, M., Herdman, M., Berra, S., Alonso, J., & Rajmil, L. (2009). Being bullied: Associated factors in children and adolescents 8 to 18 years old in 11 European countries. *Pediatrics, 123*, 569-577. doi: 10.1542/peds.2008-0323
- Arseneault, L., Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: "Much ado about nothing"? *Psychological Medicine, 40*, 717-729 doi: 10.1017/S0033291709991383
- Arseneault, L., Milne, B. J., Taylor, A., Adams, F., Delgado, K., Caspi, A., & Moffitt, T. E. (2008). Being bullied as an environmentally mediated contributing factor to children's internalizing problems: A study of twins discordant for victimization. *Archives of Pediatrics & Adolescent Medicine, 162*, 145-150. doi: 10.1001/archpediatrics.2007.53
- Arseneault, L., Walsh, E., Trzesniewski, K., Newcombe, R., Caspi, A., & Moffitt, T. E. (2006). Bullying victimization uniquely contributes to adjustment

- problems in young children: A nationally representative cohort study. *Pediatrics*, *118*, 130-138. doi: 10.1542/peds.2005-2388
- Aunola, K., & Nurmi, J. E. (2005). The role of parenting styles in children's problem behavior. *Child Development*, *76*, 1144-1159. doi: 10.1111/j.1467-8624.2005.00840.x-i1
- Baldry, A. C. (2003). Bullying in schools and exposure to domestic violence. *Child Abuse & Neglect*, *27*, 713-732. doi: 10.1016/S0145-2134(03)00114-5
- Baldry, A. C., & Farrington, D. P. (1998). Parenting influences on bullying and victimization. *Legal and Criminological Psychology*, *3*, 237-254. doi: 10.1111/j.2044-8333.1998.tb00364.x
- Baldry, A. C., & Farrington, D. P. (2000). Bullies and delinquents: Personal characteristics and parental styles. *Journal of Community & Applied Social Psychology*, *10*, 17-31. doi: 10.1002/(SICI)1099-1298(200001/02)10:1<17::AID-CASP526>3.0.CO;2-M
- Ball, H. A., Arseneault, L., Taylor, A., Maughan, B., Caspi, A., & Moffitt, T. E. (2008). Genetic and environmental influences on victims, bullies and bully-victims in childhood. *Journal of Child Psychology and Psychiatry*, *49*, 104-112.
- Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication*, *28*, 12-29. doi: 10.1111/j.1460-2466.1978.tb01621.x
- Bank, L., Burraston, B., & Snyder, J. (2004). Sibling conflict and ineffective parenting as predictors of adolescent boys' antisocial behavior and peer difficulties: Additive and interactional effects. *Journal of Research on Adolescence*, *14*, 99-125. doi: 10.1111/j.1532-7795.2004.01401005.x

- Bank, L., Patterson, G. R., & Reid, J. B. (1996). Negative sibling interaction patterns as predictors of later adjustment problems in adolescent and young adult males. In G. H. Brody (Ed.), *Sibling relationships: Their causes and consequences* (pp. 197-229). Norwood, NJ: Ablex.
- Barboza, G. E., Schiamberg, L. B., Oehmke, J., Korzeniewski, S. J., Post, L. A., & Heraux, C. G. (2009). Individual characteristics and the multiple contexts of adolescent bullying: An ecological perspective. *Journal of Youth and Adolescence, 38*, 101-121. doi: 10.1007/s10964-008-9271-1
- Barker, E. D., Arseneault, L., Brendgen, M., Fontaine, N., & Maughan, B. (2008). Joint development of bullying and victimization in adolescence: Relations to delinquency and self-harm. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*, 1030-1038. doi: 10.1097/CHI.ObO13e31817eec98
- Barker, E. D., Boivin, M., Brendgen, M., Fontaine, N., Arseneault, L., Vitaro, F., Bissonnette, C., & Tremblay, R. E. (2008). Predictive validity and early predictors of peer-victimization trajectories in preschool. *Archives of General Psychiatry, 65*, 1185-1192. doi: 10.1001/archpsyc.65.10.1185
- Batsche, G. M., & Knoff, H. M. (1994). Bullies and their victims: Understanding a pervasive problem in the schools. *School Psychology Review, 23*, 165-174.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology, 4*, 1-103. doi: 10.1037/h0030372
- Bayley, N., & Schaefer, E. S. (1960). Relationships between socioeconomic variables and the behavior of mothers toward young children. *Journal of Genetic Psychology, 96*, 61-77. doi: 10.1080/00221325.1960.10534275

- Begg, C. B., & Mazumdar, M. (1994). Operating characteristics of a rank correlation test for publication bias. *Biometrics*, *50*, 1088-1101.
- Bentley, K. M., & Li, A. K. F. (1996). Bully and victim problems in elementary schools and students' beliefs about aggression. *Canadian Journal of School Psychology*, *11*, 153-165. doi: 10.1177/082957359601100220
- Beran, T., & Li, Q. (2008). The relationship between cyberbullying and school bullying. *The Journal of Student Wellbeing*, *1*, 15-33.
- Berthoud, R. (2011). Income and other measures of material well-being. In S. McFall & C. Garrington (Eds.), *Understanding Society: Early findings from the first wave of the UK's household longitudinal study* (pp. 55-64). Institute for Social and Economic Research, University of Essex, Colchester.
- Bjorkqvist, K., Lagerspetz, K. M. J., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior*, *18*, 117-127. doi: 10.1002/1098-2337(1992)18:2<117::AID-AB2480180205>3.0.CO;2-3
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2005). The more the merrier? The effect of family size and birth order on children's education. *The Quarterly Journal of Economics*, *120*, 669-700.
- Blake, J. (1981). Family size and the quality of children. *Demography*, *18*, 421-442.
- Bland, J. M., & Altman, D. G. (1995). Multiple significance tests: The Bonferroni method. *BMJ*, *310*, 170. doi: 10.1136/bmj.310.6973.170
- Bland, J. M., & Altman, D. G. (2000). Statistics notes: The odds ratio. *BMJ*, *320*, 1468. doi: 10.1136/bmj.320.7247.1468
- Bliese, P. D., & Hanges, P. J. (2004). Being both too liberal and too conservative: The perils of treating grouped data as though they were independent.

*Organizational Research Methods*, 7, 400-417. doi:

10.1177/1094428104268542

Bogart, L. M., Elliott, M. N., Klein, D. J., Tortolero, S. R., Mrug, S., Peskin, M. F., Davies, S. L., Schink, E. T., & Schuster, M. A. (2014). Peer victimization in fifth grade and health in tenth grade. *Pediatrics*, 133, 440-447. doi:

10.1542/peds.2013-3510

Bolger, K. E., Patterson, C. J., & Kupersmidt, J. B. (1998). Peer relationships and self-esteem among children who have been maltreated. *Child DevELOPMENT*, 69, 1171-1197. doi: 10.1111/j.1467-8624.1998.tb06166.x

Bolger, K. E., Patterson, C. J., Thompson, W. W., & Kupersmidt, J. B. (1995). Psychosocial adjustment among children experiencing persistent and intermittent family economic hardship. *Child Development*, 66, 1107-1129. doi: 10.1111/j.1467-8624.1995.tb00926.x

Bollmer, J. M., Milich, R., Harris, M. J., & Maras, M. A. (2005). A friend in need: The role of friendship quality as a protective factor in peer victimization and bullying. *Journal of Interpersonal Violence*, 20, 701-712. doi:

10.1177/0886260504272897

Bond, L., Carlin, J. B., Thomas, L., Rubin, K., & Patton, G. (2001). Does bullying cause emotional problems? A prospective study of young teenagers. *British Medical Journal*, 323, 480-484. doi: 10.1136/bmj.323.7311.480

Bonnet, M., Goossens, F. A., Willems, A. M., & Schuengel, C. (2009). Peer victimization in Dutch school classes of four-to five-year-olds: Contributing factors at the school level. *The Elementary School Journal*, 110, 163-177.

doi: 10.1086/605769

- Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: The role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health, 33*, 60-70. doi: 10.1016/S1054-139X(03)00100-9
- Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2005). *Comprehensive meta-analysis version 2*. Englewood, NJ: Biostat.
- Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2011). *Introduction to meta-analysis*. Chippingham: Wiley.
- Bornstein, M. H., Hahn, C. S., & Wolke, D. (2013). Systems and cascades in cognitive development and academic achievement. *Child development, 84*, 154-162.
- Boulton, M. J. (1995). Patterns of bully/victim problems in mixed race groups of children. *Social Development, 4*, 277-293. doi: 10.1111/j.1467-9507.1995.tb00066.x
- Boulton, M. J., Bucci, E., & Hawker, D. D. S. (1999). Swedish and English secondary school pupils' attitudes towards, and conceptions of, bullying: Concurrent links with bully/victim involvement. *Scandinavian Journal of Psychology, 40*, 277-284. doi: 10.1111/1467-9450.404127
- Boulton, M. J., & Smith, P. K. (1992). Ethnic preferences and perceptions among Asian and White British middle school children. *Social Development, 1*, 55-66. doi: 10.1111/j.1467-9507.1992.tb00134.x
- Boulton, M. J., & Smith, P. K. (1994). Bully/victim problems in middle-school children: Stability, self-perceived competence, peer perceptions and peer

- acceptance. *British Journal of Developmental Psychology*, *12*, 315-329. doi: 10.1111/j.2044-835X.1994.tb00637.x
- Boulton, M. J., Trueman, M., Chau, C., Whitehand, C., & Amatya, K. (1999). Concurrent and longitudinal links between friendship and peer victimization: Implications for befriending interventions. *Journal of Adolescence*, *22*, 461-466. doi: 10.1006/jado.1999.0240
- Boulton, M. J., & Underwood, K. (1992). Bully/victim problems among middle school children. *British Journal of Educational Psychology*, *62*, 73-87. doi: 10.1111/j.2044-8279.1992.tb01000.x
- Bowers, L., Smith, P. K., & Binney, V. (1992). Cohesion and power in the families of children involved in bully/victim problems at school. *Journal of Family Therapy*, *14*, 371-387. doi: 10.1046/j..1992.00467.x
- Bowes, L., Arseneault, L., Maughan, B., Taylor, A., Caspi, A., & Moffitt, T. E. (2009). School, neighborhood, and family factors are associated with children's bullying involvement: A nationally representative longitudinal study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*, 545-553. doi: 10.1097/CHI.0b013e31819cb017
- Bowes, L., Maughan, B., Ball, H., Shakoor, S., Ouellet-Morin, I., Caspi, A., Moffitt, T. E., & Arseneault, L. (2013). Chronic bullying victimization across school transitions: The role of genetic and environmental influences. *Development and Psychopathology*, *25*, 333-346. doi: 10.1017/S0954579412001095
- Bowes, L., Maughan, B., Caspi, A., Moffitt, T. E., & Arseneault, L. (2010). Families promote emotional and behavioural resilience to bullying: Evidence of an environmental effect. *Journal of Child Psychology and Psychiatry*, *51*, 809-817. doi: 10.1111/j.1469-7610.2010.02216.x

- Bowes, L., Wolke, D., Joinson, C., Lereya, S. T., & Lewis, G. (2014). Sibling bullying and risk of depression, anxiety, and self-harm: A prospective cohort study. *Pediatrics, 134*, e1032-e1039. doi: 10.1542/peds.2014-0832
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399. doi: 10.1146/annurev.psych.53.100901.135233
- Bradshaw, C. P., Sawyer, A. L., & O'Brennan, L. M. (2009). A social disorganization perspective on bullying-related attitudes and behaviors: the influence of school context. *American Journal of Community Psychology, 43*, 204-220. doi: 10.1007/s10464-009-9240-1
- Braveman, P. A., Cubbin, C., Egerter, S., Chideya, S., Marchi, K. S., Metzler, M., & Posner, S. (2005). Socioeconomic status in health research: One size does not fit all. *JAMA, 294*, 2879-2888. doi: 10.1001/jama.294.22.2879
- Brody, G. H. (1998). Sibling relationship quality: Its Causes and Consequences. *Annual Review of Psychology, 49*, 1-24. doi: 10.1146/annurev.psych.49.1.1
- Brody, G. H., Stoneman, Z., & McCoy, J. K. (1994). Contributions of family relationships and child temperaments to longitudinal variations in sibling relationship quality and sibling relationship styles. *Journal of Family Psychology, 8*, 274-286. doi: 10.1037/0893-3200.8.3.274
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist, 34*, 844-850. doi: 10.1037/0003-066X.34.10.844
- Buck, N., & McFall, S. (2012). Understanding Society: Design overview. *Longitudinal and Life Course Studies, 3*, 5-17.

- Burgess, S., Wilson, D., & Lupton, R. (2005). Parallel Lives? Ethnic Segregation in Schools and Neighbourhoods. *Urban Studies*, 42, 1027-1056. doi: 10.1080/00420980500120741
- Burton, J., Nandi, A., & Platt, L. (2008). Who are the UK's minority ethnic groups? Issues of identification and measurement in a longitudinal study *Understanding Society Working Paper Series: Understanding Society at the Institute for Social and Economic Research*.
- Button, D. M., & Gealt, R. (2010). High risk behaviors among victims of sibling violence. *Journal of Family Violence*, 25, 131-140.
- Caffaro, J. V. (1998). *Sibling Abuse Trauma: Assessment and Intervention Strategies for Children, Families, and Adults*. New York: Haworth.
- Cappadocia, M. C., Weiss, J. A., & Pepler, D. (2012). Bullying experiences among children and youth with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 42, 266-277. doi: 10.1007/s10803-011-1241-x
- Carlyle, K. E., & Steinman, K. J. (2007). Demographic differences in the prevalence, co-occurrence, and correlates of adolescent bullying at school. *The Journal of School Health*, 77, 623-629. doi: 10.1111/j.1746-1561.2007.00242.x
- Carney, A. G., & Merrell, K. W. (2001). Bullying in schools: Perspectives on understanding and preventing an international problem. *School Psychology International*, 22, 364-382. doi: 10.1177/0143034301223011
- Caro, D. H., McDonald, J. T., & Willms, J. D. (2009). Socio-economic status and academic achievement trajectories from childhood to adolescence. *Canadian Journal of Education*, 32, 558-590.

- Chambers, D., Tincknell, E., & Loon, J. V. (2004). Peer regulation of teenage sexual identities. *Gender and Education, 16*, 397-415. doi: 10.1080/09540250042000251515
- Chang, L., Schwartz, D., Dodge, K. A., & McBride-Chang, C. (2003). Harsh parenting in relation to child emotion regulation and aggression. *Journal of Family Psychology, 17*, 598-606. doi: 10.1037/0893-3200.17.4.598
- Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin, 128*, 295-329. doi: 10.1037/0033-2909.128.2.295
- Christie-Mizell, C. A., Keil, J. M., Laske, M. T., & Stewart, J. (2011). Bullying behavior, parents' work hours and early adolescents' perceptions of time spent with parents. *Youth & Society, 43*, 1570-1595. doi: 10.1177/0044118X10388261
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.)*. Hillsdale, NJ: Erlbaum.
- Collins, W. A., & Laursen, B. (2004). Changing relationships, changing youth interpersonal contexts of adolescent development. *The Journal of Early Adolescence, 24*, 55-62. doi: 10.1177/0272431603260882
- Compton, K., Snyder, J., Schrepferman, L., Bank, L., & Shortt, J. W. (2003). The contribution of parents and siblings to antisocial and depressive behavior in adolescents: A double jeopardy coercion model. *Development and Psychopathology, 15*, 163-182. doi: 10.1017/S0954579403000099
- Condliffe, S., & Link, C. R. (2008). The relationship between economic status and child health: Evidence from the United States. *American Economic Review, 98*, 1605-1618. doi: 10.1257/aer.98.4.1605

- Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A Family Process Model of Economic Hardship and Adjustment of Early Adolescent Boys. *Child Development, 63*, 526-541. doi: 10.1111/j.1467-8624.1992.tb01644.x
- Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1993). Family economic stress and adjustment of early adolescent girls. *Developmental Psychology, 29*, 206-219. doi: 10.1037/0012-1649.29.2.206
- Connell, A. M., & Goodman, S. H. (2002). The association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems: A meta-analysis. *Psychological Bulletin, 128*, 746-773. doi: 10.1037/0033-2909.128.5.746
- Connolly, J., Pepler, D., Craig, W., & Taradash, A. (2000). Dating experiences of bullies in early adolescence. *Child Maltreatment, 5*, 299-310. doi: 10.1177/1077559500005004002
- Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly, 25*, 65-83. doi: 10.1037/a0020149
- Cooper, H. (2002). Investigating socio-economic explanations for gender and ethnic inequalities in health. *Social Science & Medicine, 54*, 693-706. doi: [http://dx.doi.org/10.1016/S0277-9536\(01\)00118-6](http://dx.doi.org/10.1016/S0277-9536(01)00118-6)
- Copeland, W. E., Wolke, D., Angold, A., & Costello, E. J. (2013). Adult psychiatric outcomes of bullying and being bullied by peers in childhood and

adolescence. *JAMA Psychiatry*, *70*, 419-426. doi:

10.1001/jamapsychiatry.2013.504

Copeland, W. E., Wolke, D., Lereya, S. T., Shanahan, L., Worthman, C., & Costello,

E. J. (2014). Childhood bullying involvement predicts low-grade systemic inflammation into adulthood. *Proceedings of the National Academy of Sciences*, *111*, 7570-7575. doi: 10.1073/pnas.1323641111

Craig, W. M. (1998). The relationship among bullying, victimization, depression, anxiety, and aggression in elementary school children. *Personality and Individual Differences*, *24*, 123-130. doi: 10.1016/S0191-8869(97)00145-1

Craig, W. M., Harel-Fisch, Y., Fogel-Grinvald, H., Dostaler, S., Hetland, J., Simons-Morton, B., Molcho, M., de Mato, M. G., Overpeck, M., Due, P., & Pickett, W. (2009). A cross-national profile of bullying and victimization among adolescents in 40 countries. *International Journal of Public Health*, *54*, 216-224. doi: 10.1007/s00038-009-5413-9

Craig, W. M., Pepler, D., & Atlas, R. (2000). Observations of bullying in the playground and in the classroom. *School Psychology International*, *21*, 22-36. doi: 10.1177/0143034300211002

Craig, W. M., & Pepler, D. J. (1998). Observations of bullying and victimization in the school yard. *Canadian Journal of School Psychology*, *13*, 41-59. doi: 10.1177/082957359801300205

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development*, *66*, 710-722. doi: 10.1111/j.1467-8624.1995.tb00900.x

- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology*, 8, 367-380. doi: 10.1017/S0954579400007148
- Cunradi, C. B., Caetano, R., & Schafer, J. (2002). Socioeconomic predictors of intimate partner violence among White, Black, and Hispanic couples in the United States. *Journal of Family Violence*, 17, 377-389. doi: 10.1023/A:1020374617328
- de Graaf, R., Bijl, R. V., Smit, F., Ravelli, A., & Vollebergh, W. A. (2000). Psychiatric and sociodemographic predictors of attrition in a longitudinal study The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *American Journal of Epidemiology*, 152, 1039-1047.
- Dehue, F., Bolman, C., & Völlink, T. (2008). Cyberbullying: Youngsters' experiences and parental perception. *CyberPsychology & Behavior*, 11, 217-223. doi: 10.1089/cpb.2007.0008
- Dehue, F., Bolman, C., Völlink, T., & Pouwelse, M. (2012). Cyberbullying and traditional bullying in relation to adolescents' perception of parenting. *Journal of CyberTherapy and Rehabilitation*, 5, 25-34.
- DeKeseredy, W. S., & Ellis, D. (1997). Sibling violence: A review of Canadian sociological research and suggestions for further empirical work. *Humanity & Society*, 21, 397-411. doi: 10.1177/016059769702100405
- Deković, M., Janssens, J. M. A. M., & Van As, N. M. C. (2003). Family predictors of antisocial behavior in adolescence. *Family Process*, 42, 223-235. doi: 10.1111/j.1545-5300.2003.42203.x

- DeLeire, T., & Kalil, A. (2002). Good things come in threes: Single-parent multigenerational family structure and adolescent adjustment. *Demography*, *39*, 393-413. doi: 10.1353/dem.2002.0016
- DerSimonian, R., & Laird, N. (1986). Meta-analysis in clinical trials. *Controlled Clinical Trials*, *7*, 177-188. doi: 10.1016/0197-2456(86)90046-2
- Desforges, C., & Abouchar, A. (2003). The impact of parental involvement, parental support and family education on pupil achievements and adjustment: A literature review (Vol. DfES Research Report 433): DfES.
- Dodge, K. A., & Coie, J. D. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology*, *53*, 1146-1158. doi: 10.1037/0022-3514.53.6.1146
- Dodge, K. A., Pettit, G. S., & Bates, J. E. (1994). Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Development*, *65*, 649-665. doi: 10.1111/j.1467-8624.1994.tb00774.x
- Due, P., Damsgaard, M. T., Lund, R., & Holstein, B. E. (2009). Is bullying equally harmful for rich and poor children?: A study of bullying and depression from age 15 to 27. *European Journal of Public Health*, *19*, 464-469. doi: 10.1093/eurpub/ckp099
- Due, P., Holstein, B. E., Lynch, J., Diderichsen, F., Gabhain, S. N., Scheidt, P., & Currie, C. (2005). Bullying and symptoms among school-aged children: International comparative cross sectional study in 28 countries. *The European Journal of Public Health*, *15*, 128-132. doi: 10.1093/eurpub/cki105
- Due, P., Merlo, J., Harel-Fisch, Y., Damsgaard, M. T., Holstein, B. E., Hetland, J., Currie, C., Gabhainn, S. N., de Matos, M. G., & Lynch, J. (2009). Socioeconomic inequality in exposure to bullying during adolescence: A

- comparative, cross-sectional, multilevel study in 35 countries. *American Journal of Public Health*, 99, 907-914. doi: 10.2105/ajph.2008.139303
- Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1994). Economic deprivation and early childhood development. *Child Development*, 65, 296-318. doi: 10.1111/j.1467-8624.1994.tb00752.x
- Duncan, R. D. (1999a). Maltreatment by parents and peers: The relationship between child abuse, bully victimization, and psychological distress. *Child Maltreatment*, 4, 45-55. doi: 10.1177/1077559599004001005
- Duncan, R. D. (1999b). Peer and sibling aggression. *Journal of Interpersonal Violence*, 14, 871-886. doi: 10.1177/088626099014008005
- Duncan, R. D. (2004). The impact of family relationships on school bullies and victims. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools: A social-ecological perspective on prevention and intervention* (pp. 227-244). Mahwah, NJ: Erlbaum.
- Dunn, J., Slomkowski, C., & Beardsall, L. (1994). Sibling relationships from the preschool period through middle childhood and early adolescence. *Developmental Psychology*, 30, 315-324. doi: 10.1037/0012-1649.30.3.315
- Durkin, K., Hunter, S., Levin, K. A., Bergin, D., Heim, D., & Howe, C. (2012). Discriminatory peer aggression among children as a function of minority status and group proportion in school context. *European Journal of Social Psychology*, 42, 243-251. doi: 10.1002/ejsp.870
- Duval, S., & Tweedie, R. (2000). A nonparametric "trim and fill" method of accounting for publication bias in meta-analysis. *Journal of the American Statistical Association*, 95, 89-98. doi: 10.1080/01621459.2000.10473905

- DWP. (2012). *Households Below Average Income: An Analysis of the Income Distribution 1994/95 - 2010/11*. London: Department for Work and Pensions.
- Egan, S. K., & Perry, D. G. (1998). Does low self-regard invite victimization? *Developmental Psychology, 34*, 299-309. doi: 10.1037/0012-1649.34.2.299
- Elgar, F. J., Craig, W., Boyce, W. T., Morgan, A., & Vella-Zarb, R. (2009). Income inequality and school bullying: Multilevel study of adolescents in 37 countries. *Journal of Adolescent Health, 45*, 351-359. doi: 10.1016/j.jadohealth.2009.04.004
- Elias, M. J., & Zins, J. E. (2003). Bullying, other forms of peer harassment, and victimization in the schools: Issues for school psychology research and practice. *Journal of Applied School Psychology, 19*, 1-5.
- Ensor, R., Marks, A., Jacobs, L., & Hughes, C. (2010). Trajectories of antisocial behaviour towards siblings predict antisocial behaviour towards peers. *Journal of Child Psychology and Psychiatry, 51*, 1208-1216. doi: 10.1111/j.1469-7610.2010.02276.x
- Eriksen, S., & Jensen, V. (2006). All in the family? Family environment factors in sibling violence. *Journal of Family Violence, 21*, 497-507. doi: 10.1007/s10896-006-9048-9
- Eriksen, S., & Jensen, V. (2009). A push or a punch: Distinguishing the severity of sibling violence. *Journal of Interpersonal Violence, 24*, 183-208. doi: 10.1177/0886260508316298
- Eslea, M., Menesini, E., Morita, Y., O'Moore, M., Mora-Merchán, J. A., Pereira, B., & Smith, P. K. (2004). Friendship and loneliness among bullies and victims:

- Data from seven countries. *Aggressive Behavior*, 30, 71-83. doi:  
10.1002/ab.20006
- Eslea, M., & Mukhtar, K. (2000). Bullying and racism among Asian schoolchildren in Britain. *Educational Research*, 42, 207-217. doi:  
10.1080/001318800363845
- Espelage, D. L., Bosworth, K., & Simon, T. R. (2000). Examining the social context of bullying behaviors in early adolescence. *Journal of Counseling & Development*, 78, 326-333. doi: 10.1002/j.1556-6676.2000.tb01914.x
- Espelage, D. L., Mebane, S. E., & Swearer, S. M. (2004). Gender differences in bullying: Moving beyond mean level differences. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools: A social-ecological perspective on prevention and intervention* (pp. 15-35). Mahwah, NJ: Erlbaum.
- Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, 13, 1-22. doi: 10.1023/A:1009048817385
- Fandrem, H., Strohmeier, D., & Roland, E. (2009). Bullying and victimization among native and immigrant adolescents in Norway: The role of proactive and reactive aggressiveness. *The Journal of Early Adolescence*, 29, 898-923. doi: 10.1177/0272431609332935
- Farrington, D. P. (1993). Understanding and preventing bullying. *Crime and justice*, 17, 381-458.
- Farrington, D. P., & Baldry, A. C. (2010). Individual risk factors for school bullying. *Journal of Aggression, Conflict and Peace Research*, 2, 4-16. doi:  
10.5042/jacpr.2010.0001

- Feinberg, M. E., Solmeyer, A. R., Hostetler, M. L., Sakuma, K. L., Jones, D., & McHale, S. M. (2013). Siblings are special: Initial test of a new approach for preventing youth behavior problems. *Journal of Adolescent Health, 53*, 166-173. doi: 10.1016/j.jadohealth.2012.10.004
- Fekkes, M., Pijpers, F. I. M., Fredriks, A. M., Vogels, T., & Verloove-Vanhorick, S. P. (2006). Do bullied children get ill, or do ill children get bullied? A prospective cohort study on the relationship between bullying and health-related symptoms. *Pediatrics, 117*, 1568-1574. doi: 10.1542/peds.2005-0187
- Fekkes, M., Pijpers, F. I. M., & Verloove-Vanhorick, S. P. (2004). Bullying behavior and associations with psychosomatic complaints and depression in victims. *The Journal of Pediatrics, 144*, 17-22. doi: 10.1016/j.jpeds.2003.09.025
- Felson, R. B. (1983). Aggression and violence between siblings. *Social Psychology Quarterly, 46*, 271-285.
- Felson, R. B. (1996). Big people hit little people: Sex differences in physical power and interpersonal violence. *Criminology, 34*, 433-452. doi: 10.1111/j.1745-9125.1996.tb01214.x
- Fewell, Z., Davey Smith, G., & Sterne, J. A. C. (2007). The Impact of Residual and Unmeasured Confounding in Epidemiologic Studies: A Simulation Study. *American Journal of Epidemiology, 166*, 646-655. doi: 10.1093/aje/kwm165
- Finkelhor, D., Ormrod, R., & Turner, H. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect, 31*, 7-26. doi: 10.1016/j.chiabu.2006.06.008
- Finkelhor, D., Ormrod, R., Turner, H., & Hamby, S. L. (2005). The victimization of children and youth: A comprehensive, national survey. *Child Maltreatment, 10*, 5-25. doi: 10.1177/1077559504271287

- Finkelhor, D., Turner, H., & Ormrod, R. (2006). Kid's stuff: The nature and impact of peer and sibling violence on younger and older children. *Child abuse & neglect, 30*, 1401-1421.
- Fisher, H. L., Moffitt, T. E., Houts, R. M., Belsky, D. W., Arseneault, L., & Caspi, A. (2012). Bullying victimisation and risk of self harm in early adolescence: Longitudinal cohort study. *BMJ, 344*. doi: 10.1136/bmj.e2683
- Flouri, E., & Buchanan, A. (2003). The role of mother involvement and father involvement in adolescent bullying behavior. *Journal of Interpersonal Violence, 18*, 634-644. doi: 10.1177/0886260503251129
- Fogelman, K. R. (1975). Developmental correlates of family size: A report from the National Child Development Study. *British Journal of Social Work, 5*, 43-57.
- Forero, R., McLellan, L., Rissel, C., & Bauman, A. (1999). Bullying behaviour and psychosocial health among school students in New South Wales, Australia: Cross sectional survey. *BMJ, 319*, 344. doi: 10.1136/bmj.319.7206.344
- Frisen, A., Jonsson, A., & Persson, C. (2007). Adolescents' perception of bullying: Who is the victim? Who is the bully? What can be done to stop bullying? *Adolescence, 42*, 749-761.
- Galobardes, B., Shaw, M., Lawlor, D. A., & Lynch, J. W. (2006). Indicators of socioeconomic position (part 2). *Journal of Epidemiology and Community Health, 60*, 95-101. doi: 10.1136/jech.2004.028092
- Galobardes, B., Shaw, M., Lawlor, D. A., Lynch, J. W., & Smith, G. D. (2006). Indicators of socioeconomic position (part 1). *Journal of Epidemiology and Community Health, 60*, 7-12. doi: 10.1136/jech.2004.023531
- Garandeanu, C. F., Ahn, H. J., & Rodkin, P. C. (2011). The social status of aggressive students across contexts: The role of classroom status hierarchy, academic

- achievement, and grade. *Developmental Psychology*, 47, 1699-1710. doi: 10.1037/a0025271
- Garandeau, C. F., Lee, I. A., & Salmivalli, C. (2014). Differential effects of the KiVa anti-bullying program on popular and unpopular bullies. *Journal of Applied Developmental Psychology*, 35, 44-50. doi: 10.1016/j.appdev.2013.10.004
- Garbarino, J. (1992). The meaning of poverty in the world of children. *American Behavioral Scientist*, 35, 220-237. doi: 10.1177/0002764292035003003
- Garner, P. W., & Hinton, T. S. (2010). Emotional display rules and emotion self-regulation: Associations with bullying and victimization in community-based after school programs. *Journal of Community & Applied Social Psychology*, 20, 480-496. doi: 10.1002/casp.1057
- Genta, M. L., Smith, P. K., Ortega, R., Brighi, A., Guarini, A., Thompson, F., Tippett, N., Mora-Merchán, J., & Calmaestra, J. (2011). Comparative aspects of cyberbullying in Italy, England, and Spain. In Q. Li, D. Cross & P. K. Smith (Eds.), *Cyberbullying in the Global Playground: Research from International Perspectives* (pp. 15-31). Chichester, UK: Wiley-Blackwell.
- Georgiou, S. N. (2008). Bullying and victimization at school: The role of mothers. *British Journal of Educational Psychology*, 78, 109-125. doi: 10.1348/000709907X204363
- Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology*, 41, 235-284. doi: 10.1016/S0022-4405(03)00048-7
- Gini, G. (2008). Associations between bullying behaviour, psychosomatic complaints, emotional and behavioural problems. *Journal of Paediatrics and Child Health*, 44, 492-497. doi: 10.1111/j.1440-1754.2007.01155.x

- Gini, G., & Pozzoli, T. (2009). Association between bullying and psychosomatic problems: A meta-analysis. *Pediatrics*, *123*, 1059-1065. doi: 10.1542/peds.2008-1215
- Gini, G., & Pozzoli, T. (2013). Bullied children and psychosomatic problems: A meta-analysis. *Pediatrics*, *132*, 720-729. doi: 10.1542/peds.2013-0614
- Gini, G., Pozzoli, T., & Hauser, M. (2011). Bullies have enhanced moral competence to judge relative to victims, but lack moral compassion. *Personality and Individual Differences*, *50*, 603-608. doi: 10.1016/j.paid.2010.12.002
- Glasgow, K. L., Dornbusch, S. M., Troyer, L., Steinberg, L., & Ritter, P. L. (1997). Parenting styles, adolescents' attributions, and educational outcomes in nine heterogeneous high schools. *Child Development*, *68*, 507-529. doi: 10.1111/j.1467-8624.1997.tb01955.x
- Glew, G. M., Fan, M. Y., Katon, W., Rivara, F. P., & Kernic, M. A. (2005). Bullying, psychosocial adjustment, and academic performance in elementary school. *Archives of Pediatrics & Adolescent Medicine*, *159*, 1026-1031. doi: 10.1001/archpedi.159.11.1026
- Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological medicine*, *27*, 191-197.
- Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, *27*, 191-197. doi: 10.1017/S0033291796004242

- Goodman, E. (1999). The role of socioeconomic status gradients in explaining differences in US adolescents' health. *American Journal of Public Health, 89*, 1522-1528. doi: 10.2105/AJPH.89.10.1522
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 1337-1345. doi: 10.1097/00004583-200111000-00015
- Graham-Bermann, S. A., Cutler, S. E., Litzenberger, B. W., & Schwartz, W. E. (1994). Perceived conflict and violence in childhood sibling relationships and later emotional adjustment. *Journal of Family Psychology, 8*, 85. doi: 10.1037/0893-3200.8.1.85
- Grawitch, M. J., & Munz, D. C. (2004). Are your data nonindependent? A practical guide to evaluating nonindependence and within-group agreement. *Understanding Statistics, 3*, 231-257. doi: 10.1207/s15328031us0304\_2
- Green, A. H. (1984). Child abuse by siblings. *Child Abuse & Neglect, 8*, 311-317. doi: 10.1016/0145-2134(84)90072-3
- Green, R., Collingwood, A., & Ross, A. (2010). Characteristics of bullying victims in schools. London: Department for Education.
- Griffin, K. W., Botvin, G. J., Scheier, L. M., Diaz, T., & Miller, N. L. (2000). Parenting practices as predictors of substance use, delinquency, and aggression among urban minority youth: Moderating effects of family structure and gender. *Psychology of Addictive Behaviors, 14*, 174-184. doi: 10.1037/0893-164X.14.2.174
- Griffin, R. S., & Gross, A. M. (2004). Childhood bullying: Current empirical findings and future directions for research. *Aggression and Violent Behavior, 9*, 379-400. doi: 10.1016/S1359-1789(03)00033-8

- Hackman, D. A., & Farah, M. J. (2009). Socioeconomic status and the developing brain. *Trends in Cognitive Sciences, 13*, 65-73. doi: 10.1016/j.tics.2008.11.003
- Hanish, L. D., & Guerra, N. G. (2000). The roles of ethnicity and school context in predicting children's victimization by peers. *American Journal of Community Psychology, 28*, 201-223. doi: 10.1023/a:1005187201519
- Hanson, M. D., & Chen, E. (2007). Socioeconomic status and health behaviors in adolescence: A review of the literature. *Journal of Behavioral Medicine, 30*, 263-285. doi: 10.1007/s10865-007-9098-3
- Hanushek, E. A. (1992). The trade-off between child quantity and quality. *Journal of Political Economy, 100*, 84-117.
- Hardy, M. S. (2001). Physical Aggression and Sexual Behavior Among Siblings: A Retrospective Study. *Journal of Family Violence, 16*, 255-268. doi: 10.1023/a:1011186215874
- Harland, P., Reijneveld, S. A., Brugman, E., Verloove-Vanhorick, S. P., & Verhulst, F. C. (2002). Family factors and life events as risk factors for behavioural and emotional problems in children. *European Child & Adolescent Psychiatry, 11*, 176-184. doi: 10.1007/s00787-002-0277-z
- Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *The Journal of Child Psychology and Psychiatry, 41*, 441-455. doi: 10.1111/1469-7610.00629
- Hawley, P. H. (2003). Strategies of control, aggression, and morality in preschoolers: An evolutionary perspective. *Journal of Experimental Child Psychology, 85*, 213-235. doi: 10.1016/S0022-0965(03)00073-0

- Hawley, P. H. (2007). Social dominance in childhood and adolescence: Why social competence and aggression may go hand in hand. In P. H. Hawley, T. D. Little & P. C. Rodkin (Eds.), *Aggression and Adaptation: The Bright Side to Bad Behavior* (pp. 1-29). Mahwah, NJ: Lawrence Erlbaum.
- Haynie, D. L., Nansel, T., Eitel, P., Crump, A. D., Saylor, K., Yu, K., & Simons-Morton, B. (2001). Bullies, victims, and bully/victims: Distinct groups of at-risk youth. *The Journal of Early Adolescence, 21*, 29-49. doi: 10.1177/0272431601021001002
- Heinemann, P. P. (1973). *Mobbing: Gruppevold blant barn og voksne*. Oslo: Gyldendal.
- Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: protection against an escalating cycle of peer victimization. *Developmental psychology, 35*, 94.
- Hodges, E. V. E., Malone, M. J., & Perry, D. G. (1997). Individual risk and social risk as interacting determinants of victimization in the peer group. *Developmental Psychology, 33*, 1032-1039. doi: 10.1037/0012-1649.33.6.1032
- Hodges, E. V. E., & Perry, D. G. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of personality and social psychology, 76*, 677.
- Hoeve, M., Dubas, J. S., Eichelsheim, V. I., van der Laan, P. H., Smeenk, W., & Gerris, J. R. M. (2009). The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology, 37*, 749-775. doi: 10.1007/s10802-009-9310-8

- Hoff, E., Laursen, B., & Tardif, T. (2002). Socioeconomic status and parenting. In M. Borenstein (Ed.), *Handbook of Parenting Volume 2: Biology and Ecology of Parenting* (pp. 231-252). Mahwah, NJ: Lawrence Erlbaum.
- Hoffman, K. L., Kiecolt, K. J., & Edwards, J. N. (2005). Physical Violence Between Siblings A Theoretical and Empirical Analysis. *Journal of Family Issues*, 26, 1103-1130. doi: 10.1177/0192513x05277809
- Holt, M. K., Kaufman Kantor, G., & Finkelhor, D. (2008). Parent/child concordance about bullying involvement and family characteristics related to bullying and peer victimization. *Journal of School Violence*, 8, 42-63. doi: 10.1080/15388220802067813
- Hong, J. S., Espelage, D. L., Grogan-Kaylor, A., & Allen-Meares, P. (2012). Identifying potential mediators and moderators of the association between child maltreatment and bullying perpetration and victimization in school. *Educational Psychology Review*, 24, 167-186. doi: 10.1007/s10648-011-9185-4
- Horne, A. M., Stoddard, J. L., & Bell, C. D. (2007). Group approaches to reducing aggression and bullying in school. *Group Dynamics: Theory, Research, and Practice*, 11, 262.
- House of Commons Education and Skills Committee. (2007). *Bullying: Government response to the committee's third report of session 2006-07*. London: The Stationery Office.
- Huesmann, L. R., & Guerra, N. G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology*, 72, 408-419. doi: 10.1037/0022-3514.72.2.408

- Hussey, J. M., Chang, J. J., & Kotch, J. B. (2006). Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics, 118*, 933-942. doi: 10.1542/peds.2005-2452
- Ivarsson, T., Broberg, A. G., Arvidsson, T., & Gillberg, C. (2005). Bullying in adolescence: Psychiatric problems in victims and bullies as measured by the Youth Self Report (YSR) and the Depression Self-Rating Scale (DSRS). *Nordic Journal of Psychiatry, 59*, 365-373. doi: 10.1080/08039480500227816
- Jankauskiene, R., Kardelis, K., Sukys, S., & Kardeliene, L. (2008). Associations between school bullying and psychosocial factors. *Social Behavior and Personality: An international journal, 36*, 145-162. doi: 10.2224/sbp.2008.36.2.145
- Jansen, D. E. M. C., Veenstra, R., Ormel, J., Verhulst, F. C., & Reijneveld, S. A. (2011). Early risk factors for being a bully, victim, or bully/victim in late elementary and early secondary education. The longitudinal TRAILS study. *BMC Public Health, 11*, 440-446. doi: 10.1186/1471-2458-11-440
- Jansen, P. W., Verlinden, M., Dommisse-van Berkel, A., Mieloo, C., van der Ende, J., Veenstra, R., Verhulst, F. C., Jansen, W., & Tiemeier, H. (2012). Prevalence of bullying and victimization among children in early elementary school: Do family and school neighbourhood socioeconomic status matter? *BMC Public Health, 12*, 494-504. doi: 10.1186/1471-2458-12-494
- Janssen, I., Craig, W. M., Boyce, W. F., & Pickett, W. (2004). Associations between overweight and obesity with bullying behaviors in school-aged children. *Pediatrics, 113*, 1187-1194.

- Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education, 42*, 82-110. doi: 10.1177/0042085906293818
- Johnson, H. R., Thompson, M. J. J., Wilkinson, S., Walsh, L., Balding, J., & Wright, V. (2002). Vulnerability to bullying: Teacher-reported conduct and emotional problems, hyperactivity, peer relationship difficulties, and prosocial behaviour in primary school children. *Educational Psychology, 22*, 553-556. doi: 10.1080/0144341022000023626
- Johnston, R., Wilson, D., & Burgess, S. (2004). School segregation in multiethnic England. *Ethnicities, 4*, 237-265. doi: 10.1177/1468796804042605
- Jordan, J. V. (2013). Relational resilience in girls. In S. Goldstein & R. Brooks (Eds.), *Handbook of Resilience in Children* (pp. 73-86). NY: Springer.
- Junger-Tas, J., & van Kesteren, J. (1999). *Bullying and delinquency in a Dutch school population*. Leiden, Netherlands: Kugler Publications.
- Juvonen, J., Graham, S., & Schuster, M. A. (2003). Bullying among young adolescents: The strong, the weak, and the troubled. *Pediatrics, 112*, 1231-1237.
- Juvonen, J., Nishina, A., & Graham, S. (2000). Peer harassment, psychological adjustment, and school functioning in early adolescence. *Journal of Educational Psychology, 92*, 349-359. doi: 10.1037/0022-0663.92.2.349
- Kaltiala-Heino, R., Rimpelä, M., Marttunen, M., Rimpelä, A., & Rantanen, P. (1999). Bullying, depression, and suicidal ideation in Finnish adolescents: School survey. *BMJ, 319*, 348-351. doi: 10.1136/bmj.319.7206.348

- Kaltiala-Heino, R., Rimpelä, M., Rantanen, P., & Rimpelä, A. (2000). Bullying at school—an indicator of adolescents at risk for mental disorders. *Journal of Adolescence*, *23*, 661-674. doi: 10.1006/jado.2000.0351
- Kennedy, D. E., & Kramer, L. (2008). Improving emotion regulation and sibling relationship quality: The more fun with sisters and brothers program. *Family Relations*, *57*, 567-578. doi: 10.1111/j.1741-3729.2008.00523.x
- Khan, R., & Cooke, D. J. (2013). Measurement of sibling violence: A two-factor model of severity. *Criminal Justice and Behavior*, *40*, 26-39. doi: 10.1177/0093854812463349
- Kim, Y. S., Boyce, W. T., Koh, Y. J., & Leventhal, B. L. (2009). Time trends, trajectories, and demographic predictors of bullying: A prospective study in Korean adolescents. *Journal of Adolescent Health*, *45*, 360-367. doi: 10.1016/j.jadohealth.2009.02.005
- Kishiyama, M. M., Boyce, W. T., Jimenez, A. M., Perry, L. M., & Knight, R. T. (2009). Socioeconomic disparities affect prefrontal function in children. *Journal of Cognitive Neuroscience*, *21*, 1106-1115. doi: 10.1162/jocn.2009.21101
- Klomek, A. B., Marrocco, F., Kleinman, M., Schonfeld, I. S., & Gould, M. S. (2007). Bullying, depression, and suicidality in adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *46*, 40-49 doi: 10.1097/01.chi.0000242237.84925.18
- Knies, G. (2011). Life satisfaction and material well-being of young people in the UK. In S. McFall & C. Garrington (Eds.), *Understanding Society: Early findings from the first wave of the UK's household longitudinal study* (pp. 15-

- 22). Institute for Social and Economic Research, University of Essex, Colchester.
- Kokkinos, C. M., & Panayiotou, G. (2004). Predicting bullying and victimization among early adolescents: Associations with disruptive behavior disorders. *Aggressive Behavior, 30*, 520-533. doi: 10.1002/ab.20055
- Korenman, S., Miller, J. E., & Sjaastad, J. E. (1995). Long-term poverty and child development in the United States: Results from the NLSY. *Children and Youth Services Review, 17*, 127-155. doi: 10.1016/0190-7409(95)00006-X
- Kotecha, S. (2014). More children talking to ChildLine about suicide. Retrieved from BBC News website: <http://www.bbc.co.uk/news/uk-29842616>
- Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., & Kupfer, D. (2001). How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry, 158*, 848-856.
- Kramer, L., & Conger, K. J. (2009). What we learn from our sisters and brothers: For better or for worse. *New Directions for Child and Adolescent Development, 2009*, 1-12. doi: 10.1002/cd.253
- Krieger, N. (2000). Discrimination and health. In L. Berkman & I. Kawachi (Eds.), *Social Epidemiology* (pp. 36-75). Oxford: Oxford University Press.
- Krieger, N., Williams, D. R., & Moss, N. E. (1997). Measuring social class in US public health research: Concepts, methodologies, and guidelines. *Annual Review of Public Health, 18*, 341-378. doi: doi:10.1146/annurev.publhealth.18.1.341
- Krienert, J. L., & Walsh, J. A. (2011). My brother's keeper: A contemporary examination of reported sibling violence using national level data, 2000–

2005. *Journal of Family Violence*, 26, 331-342. doi: 10.1007/s10896-011-9367-3

Kumpulainen, K., Räsänen, E., Henttonen, I., Almqvist, F., Kresanov, K., Linna, S. L., Moilanen, I., Piha, J., Puura, K., & Tamminen, T. (1998). Bullying and psychiatric symptoms among elementary school-age children. *Child Abuse & Neglect*, 22, 705-717. doi: 10.1016/S0145-2134(98)00049-0

Kuntsche, E., Pickett, W., Overpeck, M., Craig, W. M., Boyce, W., & de Matos, M. G. (2006). Television viewing and forms of bullying among adolescents from eight countries. *Journal of Adolescent Health*, 39, 908-915.

Ladd, G. W. (1999). Peer relationships and social competence during early and middle childhood. *Annual Review of Psychology*, 50, 333-359. doi: 10.1146/annurev.psych.50.1.333

Ladd, G. W., & Burgess, K. B. (1999). Charting the relationship trajectories of aggressive, withdrawn, and aggressive/withdrawn children during early grade school. *Child development*, 70, 910-929.

Lahey, B. B., Loeber, R., Hart, E. L., Frick, P. J., Applegate, B., Zhang, Q., Green, S. M., & Russo, M. F. (1995). Four-year longitudinal study of conduct disorder in boys: Patterns and predictors of persistence. *Journal of Abnormal Psychology*, 104, 83-93. doi: 10.1037/0021-843X.104.1.83

Lansford, J. E., Ceballo, R., Abbey, A., & Stewart, A. J. (2001). Does family structure matter? A comparison of adoptive, two-parent biological, single-mother, stepfather, and stepmother households. *Journal of Marriage and Family*, 63, 840-851. doi: 10.1111/j.1741-3737.2001.00840.x

Lansford, J. E., Deater-Deckard, K., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Ethnic differences in the link between physical discipline and later

- adolescent externalizing behaviors. *Journal of Child Psychology and Psychiatry*, 45, 801-812. doi: 10.1111/j.1469-7610.2004.00273.x
- Lee, C. H. (2011). An ecological systems approach to bullying behaviors among middle school students in the United States. *Journal of Interpersonal Violence*, 26, 1664-1693. doi: 10.1177/0886260510370591
- Lee, S. S., & Wong, D. S. (2009). School, parents, and peer factors in relation to Hong Kong students' bullying. *International Journal of Adolescence and Youth*, 15, 217-233. doi: 10.1080/02673843.2009.9748030
- Lees, S. (1989). Learning to Love: Sexual Reputation, Morality and the Social Control of Girls. In M. Cain (Ed.), *Growing Up Good: Policing the Behavior of Girls in Europe*. Thousand Oaks, CA: Sage Publications Inc.
- Lemstra, M. E., Nielsen, G., Rogers, M. R., Thompson, A. T., & Moraros, J. S. (2012). Risk indicators and outcomes associated with bullying in youth aged 9-15 years. *Canadian Journal of Public Health*, 103, 9-13.
- Lereya, S. T., Samara, M., & Wolke, D. (2013). Parenting behavior and the risk of becoming a victim and a bully/victim: A meta-analysis study. *Child Abuse & Neglect*, 37, 1091-1108. doi: 10.1016/j.chiabu.2013.03.001
- Lereya, S. T., Winsper, C., Heron, J., Lewis, G., Gunnell, D., Fisher, H. L., & Wolke, D. (2013). Being bullied during childhood and the prospective pathways to self-harm in late adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52, 608-618.
- Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*, 126, 309-337. doi: 10.1037/0033-2909.126.2.309

- Loeber, R., Burke, J. D., Lahey, B. B., Winters, A., & Zera, M. (2000). Oppositional defiant and conduct disorder: A review of the past 10 years, part I. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 1468-1484. doi: 10.1097/00004583-200012000-00007
- Loeber, R., Green, S. M., Keenan, K., & Lahey, B. B. (1995). Which boys will fare worse? Early predictors of the onset of conduct disorder in a six-year longitudinal study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *34*, 499-509. doi: 10.1097/00004583-199504000-00017
- Lucia, V. C., & Breslau, N. (2006). Family cohesion and children's behavior problems: A longitudinal investigation. *Psychiatry Research*, *141*, 141-149. doi: 10.1016/j.psychres.2005.06.009
- Lumeng, J. C., Forrest, P., Appugliese, D. P., Kaciroti, N., Corwyn, R. F., & Bradley, R. H. (2010). Weight status as a predictor of being bullied in third through sixth grades. *Pediatrics*, *125*, 1301-1307. doi: 10.1542/peds.2009-0774
- Lynn, P., Burton, J., Kaminska, O., Knies, G., & Nandi, A. (2012). An initial look at non-response and attrition in Understanding Society *Understanding Society Working Paper Series*. Understanding Society at the Institute for Social and Economic Research.
- Ma, X. (2001). Bullying and being bullied: To what extent are bullies also victims? *American Educational Research Journal*, *38*, 351-370. doi: 10.3102/00028312038002351
- Mackey, A. L., Fromuth, M. E., & Kelly, D. B. (2010). The association of sibling relationship and abuse with later psychological adjustment. *Journal of Interpersonal Violence*, *25*, 955-968. doi: 10.1177/0886260509340545

- MacKinnon-Lewis, C., Volling, B. L., Lamb, M. E., Dechman, K., Rabiner, D., & Curtner, M. E. (1994). A cross-contextual analysis of boys' social competence: From family to school. *Developmental Psychology, 30*, 325-333. doi: 10.1037/0012-1649.30.3.325
- Magklara, K., Skapinakis, P., Gkatsa, T., Bellos, S., Araya, R., Stylianidis, S., & Mavreas, V. (2012). Bullying behaviour in schools, socioeconomic position and psychiatric morbidity: A cross-sectional study in late adolescents in Greece. *Child and Adolescent Psychiatry and Mental Health, 6*, 8-21. doi: 10.1186/1753-2000-6-8
- Mann, B. L. (2009). Social networking websites—a concatenation of impersonation, denigration, sexual aggressive solicitation, cyber-bullying or happy slapping videos. *International Journal of Law and Information Technology, 17*, 252-267.
- Manning, W. D., & Lamb, K. A. (2003). Adolescent well-being in cohabiting, married, and single-parent families. *Journal of Marriage and Family, 65*, 876-893. doi: 10.1111/j.1741-3737.2003.00876.x
- Marini, Z. A., Dane, A. V., Bosacki, S. L., & Cura, Y. L. C. (2006). Direct and indirect bully-victims: Differential psychosocial risk factors associated with adolescents involved in bullying and victimization. *Aggressive Behavior, 32*, 551-569. doi: 10.1002/ab.20155
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*, 205-220. doi: 10.1037/0003-066X.53.2.205

- Matherne, M. M., & Thomas, A. (2001). Family environment as a predictor of adolescent delinquency. *Adolescence, 36*, 655-664.
- Matthias, E., George, D. S., Martin, S., & Christoph, M. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ, 315*, 629-634. doi: 10.1136/bmj.315.7109.629
- McConville, D. W., & Cornell, D. G. (2003). Aggressive attitudes predict aggressive behavior in middle school students. *Journal of Emotional and Behavioral Disorders, 11*, 179-187. doi: 10.1177/10634266030110030501
- McCoy, J. K., Brody, G. H., & Stoneman, Z. (1994). A longitudinal analysis of sibling relationships as mediators of the link between family processes and youths' best friendships. *Family Relations, 43*, 400-408.
- McFall, S. (2013). Understanding Society: The UK Household Longitudinal Study Waves 1-3, User Manual. Colchester: University of Essex.
- McLeod, B. D., Weisz, J. R., & Wood, J. J. (2007). Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review, 27*, 986-1003. doi: 10.1016/j.cpr.2007.03.001
- McLeod, B. D., Wood, J. J., & Weisz, J. R. (2007). Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review, 27*, 155-172. doi: 10.1016/j.cpr.2006.09.002
- McLeod, J. D., & Shanahan, M. J. (1993). Poverty, parenting, and children's mental health. *American Sociological Review, 58*, 351-366. doi: 10.2307/2095905
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204. doi: 10.1037/0003-066X.53.2.185

- Menesini, E., Camodeca, M., & Nocentini, A. (2010). Bullying among siblings: The role of personality and relational variables. *British Journal of Developmental Psychology*, 28, 921-939. doi: 10.1348/026151009x479402
- Miech, R. A., Caspi, A., Moffitt, T. E., Wright, B. R. E., & Silva, P. A. (1999). Low socioeconomic status and mental disorders: A longitudinal study of selection and causation during young adulthood *American Journal of Sociology*, 104, 1096-1131.
- Mishna, F. (2003). Learning disabilities and bullying: Double jeopardy. *Journal of Learning Disabilities*, 36, 336-347. doi: 10.1177/00222194030360040501
- Mistry, R. S., Biesanz, J. C., Chien, N., Howes, C., & Benner, A. D. (2008). Socioeconomic status, parental investments, and the cognitive and behavioral outcomes of low-income children from immigrant and native households. *Early Childhood Research Quarterly*, 23, 193-212. doi: 10.1016/j.ecresq.2008.01.002
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS Medicine*, 6, e1000097. doi: 10.1371/journal.pmed.1000097
- Monks, C. P., & Coyne, I. (2011). A history of research into bullying. In C. P. Monks & I. Coyne (Eds.), *Bullying in Different Contexts*. Cambridge: Cambridge University Press.
- Monks, C. P., Ortega-Ruiz, R., & Rodríguez-Hidalgo, A. J. (2008). Peer victimization in multicultural schools in Spain and England. *European Journal of Developmental Psychology*, 5, 507-535. doi: 10.1080/17405620701307316

- Monks, C. P., Smith, P. K., & Swettenham, J. (2003). Aggressors, victims, and defenders in preschool: Peer, self-, and teacher reports. *Merrill-Palmer Quarterly*, *49*, 453-469. doi: 10.1353/mpq.2003.0024
- Moran, S., Smith, P. K., Thompson, D., & Whitney, I. (1993). Ethnic differences in experiences of bullying: Asian and white children. *British Journal of Educational Psychology*, *63*, 431-440. doi: 10.1111/j.2044-8279.1993.tb01069.x
- Morris, S. (2014). Mother of nine-year-old boy found hanged claims he was bullied at school. *The Guardian*. <http://www.theguardian.com/uk-news/2014/jul/14/mother-aaron-dugmore-bullied-school-claims-inquest>
- Moss, S., Prosser, H., Costello, H., Simpson, N., Patel, P., Rowe, S., Turner, S., & Hatton, C. (1998). Reliability and validity of the PAS-ADD Checklist for detecting psychiatric disorders in adults with intellectual disability. *Journal of Intellectual Disability Research*, *42*, 173-183. doi: 10.1046/j.1365-2788.1998.00116.x
- Murray, J., & Farrington, D. P. (2010). Risk factors for conduct disorder and delinquency: Key findings from longitudinal studies. *Canadian Journal of Psychiatry*, *55*, 633-642.
- Mynard, H., & Joseph, S. (1997). Bully/victim problems and their association with Eysenck's personality dimensions in 8 to 13 year-olds. *British Journal of Educational Psychology*, *67*, 51-54. doi: 10.1111/j.2044-8279.1997.tb01226.x
- Nansel, T. R., Craig, W., Overpeck, M. D., Saluja, G., & Ruan, W. J. (2004). Cross-national consistency in the relationship between bullying behaviors and

- psychosocial adjustment. *Archives of pediatrics & adolescent medicine*, 158, 730-736. doi: 10.1001/archpedi.158.8.730
- Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *JAMA*, 285, 2094-2100. doi: 10.1001/jama.285.16.2094
- Naylor, P. B., Petch, L., & Williams, J. V. (2011). Sibling abuse and bullying in childhood and adolescence: Knowns and unknowns. In C. Barter & D. Berridge (Eds.), *Children Behaving Badly? Peer Violence Between Children and Young People* (pp. 47-57). Chichester: Wiley-Blackwell.
- Nordhagen, R., Nielsen, A., Stigum, H., & Kohler, L. (2005). Parental reported bullying among Nordic children: A population-based study. *Child: Care, Health and Development*, 31, 693-701. doi: 10.1111/j.1365-2214.2005.00559.x
- O'Moore, M., & Hillery, B. (1989). Bullying in Dublin schools. *The Irish Journal of Psychology*, 10, 426-441. doi: 10.1080/03033910.1989.10557759
- O'Moore, M., & Kirkham, C. (2001). Self-esteem and its relationship to bullying behaviour. *Aggressive Behavior*, 27, 269-283. doi: 10.1002/ab.1010
- Olthof, T., & Goossens, F. A. (2008). Bullying and the need to belong: Early adolescents' bullying-related behavior and the acceptance they desire and receive from particular classmates. *Social Development*, 17, 24-46. doi: 10.1111/j.1467-9507.2007.00413.x
- Olweus, D. (1978). *Aggression in the schools: Bullies and whipping boys*. Washington DC: Hemisphere.

- Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Oxford: Wiley-Blackwell.
- Olweus, D. (1994). Bullying at school: Basic facts and effects of a school based intervention program. *Journal of Child Psychology & Psychiatry*, 35, 1171-1190. doi: 10.1111/j.1469-7610.1994.tb01229.x
- Olweus, D. (1999). Sweden. In P. K. Smith, Y. Morita, J. Junger-Tas, D. Olweus, R. Catalano & P. Slee (Eds.), *The nature of school bullying: A cross-national perspective* (pp. 7-27). London: Routledge.
- Olweus, D. (2010). Understanding and researching bullying. In S. R. Jimerson, S. M. Swearer & D. L. Espelage (Eds.), *Handbook of Bullying in Schools: An International Perspective* (pp. 9-33). New York: Routledge.
- Olweus, D. (2012). Cyberbullying: An overrated phenomenon? *European Journal of Developmental Psychology*, 9, 520-538. doi: 10.1080/17405629.2012.682358
- ONS. (2007). 2011 Census: Ethnic Group, National Identity, Religion and Language consultation: Summary report on responses to the 2011 Census stakeholders consultation 2006/07. London.
- ONS. (2012). Guidance and Methodology: Measuring Equality: Ethnic Group. from <http://www.ons.gov.uk/ons/guide-method/measuring-equality/equality/ethnic-nat-identity-religion/ethnic-group/index.html>
- Österman, K., Björkqvist, K., Lagerspetz, K. M. J., Kaukiainen, A., Huesmann, L. R., & Frączek, A. (1994). Peer and Self-Estimated Aggression and Victimization in 8-Year-Old Children From Five Ethnic Groups. *Aggressive Behavior*, 20, 411-428. doi: 10.1002/1098-2337(1994)20:6<411::aid-ab2480200602>3.0.co;2-4

- Paolucci, E. O., & Violato, C. (2004). A meta-analysis of the published research on the affective, cognitive, and behavioral effects of corporal punishment. *The Journal of Psychology, 138*, 197-222. doi: 10.3200/JRLP.138.3.197-222
- Papatraianou, L. H., Levine, D., & West, D. (2014). Resilience in the face of cyberbullying: An ecological perspective on young people's experiences of online adversity. *Pastoral Care in Education, Early view*. doi: 10.1080/02643944.2014
- Patterson, G. R., DeBaryshe, B. D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. *American Psychologist, 44*, 329-335. doi: 10.1037/0003-066X.44.2.329
- Patterson, G. R., Dishion, T. J., & Bank, L. (1984). Family interaction: A process model of deviancy training. *Aggressive Behavior, 10*, 253-267. doi: 10.1002/1098-2337(1984)10:3<253::aid-ab2480100309>3.0.co;2-2
- Peeples, F., & Loeber, R. (1994). Do individual factors and neighborhood context explain ethnic differences in juvenile delinquency? *Journal of Quantitative Criminology, 10*, 141-157. doi: 10.1007/bf02221156
- Pellegrini, A. D., & Bartini, M. (2001). Dominance in early adolescent boys: Affiliative and aggressive dimensions and possible functions. *Merrill Palmer Quarterly, 47*, 142-163. doi: 10.1353/mpq.2001.0004
- Pepler, D., Jiang, D., Craig, W. M., & Connolly, J. (2008). Developmental trajectories of bullying and associated factors. *Child Development, 79*, 325-338. doi: 10.1111/j.1467-8624.2007.01128.x
- Pereira, B., Mendonça, D., Neto, C., Valente, L., & Smith, P. K. (2004). Bullying in Portuguese schools. *School Psychology International, 25*, 241-254. doi: 10.1177/0143034304043690

- Perren, S., & Alsaker, F. D. (2006). Social behavior and peer relationships of victims, bully-victims, and bullies in kindergarten. *Journal of Child Psychology and Psychiatry*, *47*, 45-57. doi: 10.1111/j.1469-7610.2005.01445.x
- Perren, S., & Hornung, R. (2005). Bullying and delinquency in adolescence: Victims' and perpetrators' family and peer relations. *Swiss Journal of Psychology*, *64*, 51-64. doi: 10.1024/1421-0185.64.1.51
- Perren, S., von Wyl, A., Stadelmann, S., Burgin, D., & von Klitzing, K. (2006). Associations between behavioral/emotional difficulties in kindergarten children and the quality of their peer relationships. *Journal of the American Academy of Child & Adolescent Psychiatry*, *45*, 867-876.
- Pike, A., Coldwell, J., & Dunn, J. F. (2005). Sibling relationships in early/middle childhood: Links with individual adjustment. *Journal of Family Psychology*, *19*, 523-532. doi: 10.1037/0893-3200.19.4.523
- Platt, L. (2007). *Poverty and ethnicity in the UK*. Bristol, UK: The Policy Press.
- Prilleltensky, I., Nelson, G., & Peirson, L. (2001). The role of power and control in children's lives: An ecological analysis of pathways toward wellness, resilience and problems. *Journal of Community & Applied Social Psychology*, *11*, 143-158. doi: 10.1002/casp.616
- Radford, L., Corral, S., Bradley, C., & Fisher, H. L. (2013). The prevalence and impact of child maltreatment and other types of victimization in the UK: Findings from a population survey of caregivers, children and young people and young adults. *Child Abuse & Neglect*, *37*, 801-813. doi: 10.1016/j.chiabu.2013.02.004

- Ranta, K., Kaltiala-Heino, R., Pelkonen, M., & Marttunen, M. (2009). Associations between peer victimization, self-reported depression and social phobia among adolescents: The role of comorbidity. *Journal of Adolescence*, *32*, 77-93. doi: 10.1016/j.adolescence.2007.11.005
- Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*, *34*, 244-252. doi: 10.1016/j.chiabu.2009.07.009
- Richmond, M. K., & Stocker, C. M. (2006). Associations between family cohesion and adolescent siblings' externalizing behavior. *Journal of Family Psychology*, *20*, 663-669. doi: 10.1037/0893-3200.20.4.663
- Rigby, K. (2005). Why do some children bully at school? The contributions of negative attitudes towards victims and the perceived expectations of friends, parents and teachers. *School Psychology International*, *26*, 147-161. doi: 10.1177/0143034305052910
- Rigby, K. (2007). *Bullying in schools and what to do about it*. London: Jessica Kingsley.
- Rigby, K., & Slee, P. T. (1991). Bullying among Australian school children: Reported behavior and attitudes toward victims. *The Journal of Social Psychology*, *131*, 615-627. doi: 10.1080/00224545.1991.9924646
- Rigby, K., & Slee, P. T. (1993). Dimensions of interpersonal relation among Australian children and implications for psychological well-being. *The Journal of Social Psychology*, *133*, 33-42. doi: 10.1080/00224545.1993.9712116

- Rigby, K., Slee, P. T., & Martin, G. (2007). Implications of inadequate parental bonding and peer victimization for adolescent mental health. *Journal of Adolescence, 30*, 801-812. doi: 10.1016/j.adolescence.2006.09.008
- Rosenberg, M. (1989). *Society and the adolescent self-image*: Wesleyan University Press.
- Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin, 86*, 638-641. doi: 10.1037/0033-2909.86.3.638
- Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2011). Stability of peer victimization in early adolescence: Effects of timing and duration. *Journal of School Psychology, 49*, 443-464. doi: 10.1016/j.jsp.2011.04.005
- Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy, 21*, 119-144. doi: 10.1111/1467-6427.00108
- Sackett, P. R., Kuncel, N. R., Arneson, J. J., Cooper, S. R., & Waters, S. D. (2009). Does socioeconomic status explain the relationship between admissions tests and post-secondary academic performance? *Psychological Bulletin, 135*, 1-22. doi: 10.1037/a0013978
- Salmivalli, C., Lagerspetz, K., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive behavior, 22*, 1-15.
- Salmivalli, C., Lappalainen, M., & Lagerspetz, K. M. J. (1998). Stability and change of behavior in connection with bullying in schools: A two-year follow-up. *Aggressive behavior, 24*, 205-218. doi: 10.1002/(SICI)1098-2337(1998)24:3<205::AID-AB5>3.0.CO;2-J

- Salmivalli, C., & Voeten, M. (2004). Connections between attitudes, group norms, and behaviour in bullying situations. *International Journal of Behavioral Development, 28*, 246-258. doi: 10.1080/01650250344000488
- Salmon, G., James, A., Cassidy, E. L., & Javaloyes, M. A. (2000). Bullying a review: Presentations to an adolescent psychiatric service and within a school for emotionally and behaviourally disturbed children. *Clinical Child Psychology and Psychiatry, 5*, 563-579. doi: 10.1177/1359104500005004010
- Salzinger, S., Feldman, R. S., Ng-Mak, D. S., Mojica, E., Stockhammer, T., & Rosario, M. (2002). Effects of partner violence and physical child abuse on child behavior: A study of abused and comparison children. *Journal of Family Violence, 17*, 23-52. doi: 10.1023/A:1013656906303
- Sameroff, A., Seifer, R., Zax, M., & Barocas, R. (1987). Early indicators of developmental risk: Rochester longitudinal study. *Schizophrenia Bulletin, 13*, 383-394.
- Santrock, J. W. (2008). *Life-span Development (11th ed.)*. Boston: McGraw-Hill.
- Sapouna, M., & Wolke, D. (2013). Resilience to bullying victimization: The role of individual, family and peer characteristics. *Child Abuse & Neglect, 37*, 997-1006. doi: 10.1016/j.chiabu.2013.05.009
- Sawyer, A. L., Bradshaw, C. P., & O'Brennan, L. M. (2008). Examining ethnic, gender, and developmental differences in the way children report being a victim of "bullying" on self-report measures. *Journal of Adolescent Health, 43*, 106-114. doi: 10.1016/j.jadohealth.2007.12.011
- Scaramella, L. V., Neppl, T. K., Ontai, L. L., & Conger, R. D. (2008). Consequences of socioeconomic disadvantage across three generations: Parenting behavior

- and child externalizing problems. *Journal of Family Psychology*, 22, 725-733. doi: 10.1037/a0013190
- Schäfer, M., Korn, S., Brodbeck, F. C., Wolke, D., & Schulz, H. (2005). Bullying roles in changing contexts: The stability of victim and bully roles from primary to secondary school. *International Journal of Behavioral Development*, 29, 323-335. doi: 10.1177/01650250544000107
- Scheithauer, H., Hayer, T., Petermann, F., & Jugert, G. (2006). Physical, verbal, and relational forms of bullying among German students: Age trends, gender differences, and correlates. *Aggressive behavior*, 32, 261-275. doi: 10.1002/ab.20128
- Schneiders, J., Drukker, M., Van der Ende, J., Verhulst, F. C., Van Os, J., & Nicolson, N. A. (2003). Neighbourhood socioeconomic disadvantage and behavioural problems from late childhood into early adolescence. *Journal of Epidemiology and Community Health*, 57, 699-703. doi: 10.1136/jech.57.9.699
- Scholte, R. H. J., Engels, R. C. M. E., Overbeek, G., De Kemp, R. A. T., & Haselager, G. J. T. (2007). Stability in bullying and victimization and its association with social adjustment in childhood and adolescence. *Journal of Abnormal Child Psychology*, 35, 217-228. doi: 10.1007/s10802-006-9074-3
- Schreier, A., Wolke, D., Thomas, K., Horwood, J., Hollis, C., Gunnell, D., Lewis, G., Thompson, A., Zammit, S., Duffy, L., Salvi, G., & Harrison, G. (2009). Prospective study of peer victimization in childhood and psychotic symptoms in a nonclinical population at age 12 years. *Archives of General Psychiatry*, 66, 527-536. doi: 10.1001/archgenpsychiatry.2009.23

- Schwartz, D., Dodge, K. A., Pettit, G. S., & Bates, J. E. (1997). The early socialization of aggressive victims of bullying. *Child Development, 68*, 665-675. doi: 10.1111/j.1467-8624.1997.tb04228.x
- Seals, D., & Young, J. (2002). Bullying and victimization: Prevalence and relationship to gender, grade level, ethnicity, self-esteem, and depression. *Adolescence, 38*, 735-747.
- Sharp, S. (1996). Self-esteem, response style and victimization possible ways of preventing victimization through parenting and school based training programmes. *School Psychology International, 17*, 347-357.
- Sherman, A. M., Lansford, J. E., & Volling, B. L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships, 13*, 151-165. doi: 10.1111/j.1475-6811.2006.00110.x
- Shetgiri, R., Lin, H., & Flores, G. (2012). Identifying children at risk for being bullies in the United States. *Academic Pediatrics, 12*, 509-522. doi: 10.1016/j.acap.2012.06.013
- Shields, A., & Cicchetti, D. (2001). Parental maltreatment and emotion dysregulation as risk factors for bullying and victimization in middle childhood. *Journal of Clinical Child Psychology, 30*, 349-363. doi: 10.1207/S15374424JCCP3003\_7
- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*, 417-453. doi: 10.3102/00346543075003417
- Sisson, S. B., Broyles, S. T., Newton Jr, R. L., Baker, B. L., & Chernausek, S. D. (2011). TVs in the bedrooms of children: does it impact health and behavior? *Preventive medicine, 52*, 104-108.

- Skinner, J. A., & Kowalski, R. M. (2013). Profiles of sibling bullying. *Journal of Interpersonal Violence, 28*, 1726-1736. doi: 10.1177/0886260512468327
- Slee, P. T. (1994). Situational and interpersonal correlates of anxiety associated with peer victimisation. *Child Psychiatry and Human Development, 25*, 97-107. doi: 10.1007/BF02253289
- Smith, P. K. (2011). Bullying in schools: Thirty years of research. In C. P. Monks & I. Coyne (Eds.), *Bullying in Different Contexts* (pp. 36-60). Cambridge: Cambridge University Press.
- Smith, P. K., Cowie, H., Olafsson, R. F., & Liefhoghe, A. P. D. (2002). Definitions of bullying: A comparison of terms used, and age and gender differences, in a fourteen-country international comparison. *Child Development, 73*, 1119-1133. doi: 10.1111/1467-8624.00461
- Smith, P. K., Madsen, K. C., & Moody, J. C. (1999). What causes the age decline in reports of being bullied at school? Towards a developmental analysis of risks of being bullied. *Educational Research, 41*, 267-285. doi: 10.1080/0013188990410303
- Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376-385. doi: 10.1111/j.1469-7610.2007.01846.x
- Smith, P. K., & Myron-Wilson, R. (1998). Parenting and school bullying. *Clinical Child Psychology and Psychiatry, 3*, 405-417. doi: 10.1177/1359104598033006

- Smith, P. K., & Sharp, S. (2002). The problem of school bullying. In P. K. Smith & S. Sharp (Eds.), *School bullying: Insights and Perspectives* (pp. 1-19). London: Routledge.
- Smith, P. K., Talamelli, L., Cowie, H., Naylor, P., & Chauhan, P. (2004). Profiles of non-victims, escaped victims, continuing victims and new victims of school bullying. *British Journal of Educational Psychology*, *74*, 565-581. doi: 10.1348/0007099042376427
- Snyder, J., Bank, L., & Burraston, B. (2005). The consequences of antisocial behavior in older male siblings for younger brothers and sisters. *Journal of Family Psychology*, *19*, 643. doi: 10.1037/0893-3200.19.4.643
- Solberg, M. E., & Olweus, D. (2003). Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behavior*, *29*, 239-268. doi: 10.1002/ab.10047
- Solberg, M. E., Olweus, D., & Endresen, I. M. (2007). Bullies and victims at school: Are they the same pupils? *British Journal of Educational Psychology*, *77*, 441-464. doi: 10.1348/000709906X105689
- Sourander, A., Helstelä, L., Helenius, H., & Piha, J. (2000). Persistence of bullying from childhood to adolescence—a longitudinal 8-year follow-up study. *Child abuse & neglect*, *24*, 873-881.
- Sourander, A., Jensen, P., Rönning, J. A., Niemelä, S., Helenius, H., Sillanmäki, L., Kumpulainen, K., Piha, J., Tamminen, T., Moilanen, I., & Almqvist, F. (2007). What is the early adulthood outcome of boys who bully or are bullied in childhood? The Finnish “From a Boy to a Man” study. *Pediatrics*, *120*, 397-404. doi: 10.1542/peds.2006-2704

- Sourander, A., Ronning, J., Brunstein-Klomek, A., Gyllenberg, D., Kumpulainen, K., Niemela, S., Helenius, H., Sillanmaki, L., Ristkari, T., Tamminen, T., Moilanen, I., Piha, J., & Almqvist, F. (2009). Childhood bullying behavior and later psychiatric hospital and psychopharmacologic treatment: Findings from the Finnish 1981 Birth Cohort Study. *Archives of General Psychiatry*, *66*, 1005-1012. doi: 10.1001/archgenpsychiatry.2009.122
- Spanier, G. B., & Thompson, L. (1982). A confirmatory analysis of the Dyadic Adjustment Scale. *Journal of Marriage and Family*, *44*, 731-738.
- Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review*, *17*, 125-146. doi: 10.1007/s10648-005-3950-1
- Spriggs, A. L., Iannotti, R. J., Nansel, T. R., & Haynie, D. L. (2007). Adolescent bullying involvement and perceived family, peer and school relations: Commonalities and differences across race/ethnicity. *Journal of Adolescent Health*, *41*, 283-293. doi: 10.1016/j.jadohealth.2007.04.009
- Srabstein, J. C., & Merrick, J. (2013). *Bullying: A Public Health Concern*. Hauppauge, NY: Nova Science Publishing.
- Stapinski, L. A., Bowes, L., Wolke, D., Pearson, R. M., Mahedy, L., Button, K. S., Lewis, G., & Araya, R. (2014). Peer victimization during adolescence and risk for anxiety disorders in adulthood: A prospective cohort study. *Depression and Anxiety*, *31*, 574-582. doi: 10.1002/da.22270
- Stefanek, E., Strohmeier, D., van de Schoot, R., & Spiel, C. (2011). Bullying and Victimization in Ethnically Diverse Schools: Risk and Protective Factors on the Individual and Class Level. *International Journal of Developmental Science*, *5*, 73-84. doi: 10.3233/dev-2011-11073

- Stevens, V., De Bourdeaudhuij, I., & Van Oost, P. (2002). Relationship of the family environment to children's involvement in bully/victim problems at school. *Journal of Youth and Adolescence*, *31*, 419-428. doi: 10.1023/A:1020207003027
- Stocker, C., & Dunn, J. (1990). Sibling relationships in childhood: Links with friendships and peer relationships. *British Journal of Developmental Psychology*, *8*, 227-244. doi: 10.1111/j.2044-835X.1990.tb00838.x
- Stormshak, E. A., Bellanti, C. J., & Bierman, K. L. (1996). The Quality of Sibling Relationships and the Development of Social Competence and Behavioral Control in Aggressive Children. *Developmental Psychology*, *32*, 79-89. doi: 10.1037/0012-1649.32.1.79
- Stormshak, E. A., Bierman, K. L., McMahon, R. J., & Lengua, L. J. (2000). Parenting practices and child disruptive behavior problems in early elementary school. *Journal of Clinical Child Psychology*, *29*, 17-29. doi: 10.1207/S15374424jccp2901\_3
- Straus, M. A., Gelles, R. J., & Steinmetz, S. K. (1980). *Behind Closed Doors: Violence in the American Family*. New Brunswick, NJ: Transaction Publishing.
- Straus, M. A., & Stewart, J. H. (1999). Corporal punishment by American parents: National data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical Child and Family Psychology Review*, *2*, 55-70. doi: 10.1023/A:1021891529770
- Strohmeier, D., Spiel, C., & Gradinger, P. (2008). Social relationships in multicultural schools: Bullying and victimization. *European Journal of Developmental Psychology*, *5*, 262-285. doi: 10.1080/17405620701556664

- Sutton, J., Smith, P. K., & Swettenham, J. (1999). Social cognition and bullying: Social inadequacy or skilled manipulation? *British Journal of Developmental Psychology, 17*, 435-450. doi: 10.1348/026151099165384
- Swearer, S. M., & Doll, B. (2001). Bullying in schools: An ecological framework. *Journal of Emotional Abuse, 2*, 7-23. doi: 10.1300/J135v02n02\_02
- Swearer, S. M., Espelage, D. L., & Napolitano, S. A. (2011). *Bullying prevention and intervention: Realistic strategies for schools*. New York: Guilford Press.
- Swearer, S. M., Song, S. Y., Cary, P. T., Eagle, J. W., & Mickelson, W. T. (2001). Psychosocial correlates in bullying and victimization: The relationship between depression, anxiety, and bully/victim status. *Journal of Emotional Abuse, 2*, 95-121. doi: 10.1300/J135v02n02\_07
- Swearer, S. M., Turner, R. K., Givens, J. E., & Pollack, W. S. (2008). "You're So Gay!": Do Different Forms of Bullying Matter for Adolescent Males? *School Psychology Review, 37*, 160.
- Sweeting, H., & West, P. (2001). Being different: Correlates of the experience of teasing and bullying at age 11. *Research Papers in Education, 16*, 225-246. doi: 10.1080/02671520110058679
- Taanila, A., Laitinen, E., Moilanen, I., & Järvelin, M. R. (2002). Effects of family interaction on the child's behavior in single-parent or reconstructed families. *Family Process, 41*, 693-708. doi: 10.1111/j.1545-5300.2002.00693.x
- Takeuchi, D. T., Williams, D. R., & Adair, R. K. (1991). Economic stress in the family and children's emotional and behavioral problems. *Journal of Marriage and Family, 53*, 1031-1041. doi: 10.2307/353006
- Takizawa, R., Maughan, B., & Arseneault, L. (2014). Adult health outcomes of childhood bullying victimization: Evidence from a five-decade longitudinal

- British birth cohort. *American Journal of Psychiatry*, *171*, 777-784. doi: 10.1176/appi.ajp.2014.13101401
- Taylor, L. A., Saylor, C., Twyman, K., & Macias, M. (2010). Adding insult to injury: Bullying experiences of youth with attention deficit hyperactivity disorder. *Children's Health Care*, *39*, 59-72. doi: 10.1080/02739610903455152
- Thornberg, R. (2010). Schoolchildren's social representations on bullying causes. *Psychology in the Schools*, *47*, 311-327. doi: 10.1002/pits.20472
- Tippett, N., & Wolke, D. (2014a). Aggression between siblings: Associations with the home environment and peer bullying. *Aggressive Behavior, Early View*. doi: 10.1002/ab.21557
- Tippett, N., & Wolke, D. (2014b). Socioeconomic status and bullying: A meta-analysis. *American Journal of Public Health*, *104*, e48-e59. doi: 10.2105/AJPH.2014.301960
- Tippett, N., Wolke, D., & Platt, L. (2013). Ethnicity and bullying involvement in a national UK youth sample. *Journal of Adolescence*, *36*, 639-649. doi: 10.1016/j.adolescence.2013.03.013
- Toblin, R. L., Schwartz, D., Hopmeyer Gorman, A., & Abou-ezzeddine, T. (2005). Social-cognitive and behavioral attributes of aggressive victims of bullying. *Journal of Applied Developmental Psychology*, *26*, 329-346. doi: 10.1016/j.appdev.2005.02.004
- Ttofi, M. M., Farrington, D. P., Losel, F., & Loeber, R. (2011). The predictive efficiency of school bullying versus later offending: A systematic/meta-analytic review of longitudinal studies. *Criminal Behaviour and Mental Health*, *21*, 80-89. doi: 10.1002/cbm.808

- Tucker, C. J., Finkelhor, D., Shattuck, A. M., & Turner, H. (2013). Prevalence and correlates of sibling victimization types. *Child Abuse & Neglect, 37*, 213-223. doi: 10.1016/j.chiabu.2013.01.006
- Tucker, C. J., Finkelhor, D., Turner, H., & Shattuck, A. (2013). Association of sibling aggression with child and adolescent mental health. *Pediatrics, 132*, 79-84. doi: 10.1542/peds.2012-3801
- Twyman, K. A., Saylor, C. F., Saia, D., Macias, M. M., Taylor, L. A., & Spratt, E. (2010). Bullying and ostracism experiences in children with special health care needs. *Journal of Developmental & Behavioral Pediatrics, 31*, 1-8. doi: 10.1097/DBP.0b013e3181c828c8
- Updegraff, K. A., Thayer, S. M., Whiteman, S. D., Denning, D. J., & McHale, S. M. (2005). Relational aggression in adolescents' sibling relationships: Links to sibling and parent-adolescent relationship quality. *Family Relations, 54*, 373-385. doi: 10.1111/j.1741-3729.2005.00324.x
- van Walraven, C., & Hart, R. G. (2008). Leave 'em alone—why continuous variables should be analyzed as such. *Neuroepidemiology, 30*, 138-139. doi: 10.1159/000126908
- Vandoninck, S., d'Haenens, L., & Roe, K. (2013). Online risks: Coping strategies of less resilient children and teenagers across Europe. *Journal of Children and Media, 7*, 60-78. doi: 10.1080/17482798.2012.739780
- Veenstra, R., Lindenberg, S., Munniksma, A., & Dijkstra, J. K. (2010). The complex relation between bullying, victimization, acceptance, and rejection: Giving special attention to status, affection, and sex differences. *Child Development, 81*, 480-486. doi: 10.1111/j.1467-8624.2009.01411.x

- Veenstra, R., Lindenberg, S., Oldehinkel, A. J., De Winter, A. F., Verhulst, F. C., & Ormel, J. (2005). Bullying and victimization in elementary schools: A comparison of bullies, victims, bully/victims, and uninvolved preadolescents. *Developmental Psychology, 41*, 672-682. doi: 10.1037/0012-1649.41.4.672
- Verkuyten, M., & Thijs, J. (2002). Racist victimization among children in The Netherlands: The effect of ethnic group and school. *Ethnic and Racial Studies, 25*, 310-331. doi: 10.1080/01419870120109502
- Vespo, J. E., Pedersen, J., & Hay, D. F. (1995). Young children's conflicts with peers and siblings: Gender effects. *Child Study Journal, 25*, 189-212.
- Viding, E., Simmonds, E., Petrides, K. V., & Frederickson, N. (2009). The contribution of callous-unemotional traits and conduct problems to bullying in early adolescence. *Journal of Child Psychology and Psychiatry, 50*, 471-481.
- Vieno, A., Gini, G., & Santinello, M. (2011). Different forms of bullying and their association to smoking and drinking behavior in Italian adolescents. *Journal of School Health, 81*, 393-399. doi: 10.1111/j.1746-1561.2011.00607.x
- Volk, A. A., Camilleri, J. A., Dane, A. V., & Marini, Z. A. (2012). Is adolescent bullying an evolutionary adaptation? *Aggressive Behavior, 38*, 222-238. doi: 10.1002/ab.21418
- Volling, B. L., & Belsky, J. (1992). The Contribution of Mother-Child and Father-Child Relationships to the Quality of Sibling Interaction: A Longitudinal Study. *Child Development, 63*, 1209-1222. doi: 10.1111/1467-8624.ep9301210072

- Volling, B. L., Youngblade, L. M., & Belsky, J. (1997). Young children's social relationships with siblings and friends. *American Journal of Orthopsychiatry*, 67, 102-111. doi: 10.1037/h0080215
- von Grunigen, R., Perren, S., Nagele, C., & Alsaker, F. D. (2010). Immigrant children's peer acceptance and victimization in kindergarten: The role of local language competence. *British Journal of Developmental Psychology*, 28, 679-697. doi: 10.1348/026151009X470582
- Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School bullying among adolescents in the United States: Physical, verbal, relational, and cyber. *Journal of Adolescent Health*, 45, 368-375. doi: 10.1016/j.jadohealth.2009.03.021
- Warden, D., & Mackinnon, S. (2003). Prosocial children, bullies and victims: An investigation of their sociometric status, empathy and social problem-solving strategies. *British Journal of Developmental Psychology*, 21, 367-385. doi: 10.1348/026151003322277757
- Ware, J. E., Kosinski, M., Turner-Bowker, D. M., & Gandek, B. (2002). *How to Score Version 2 of the SF-12 Health Survey (with a supplement documenting version 1)*. Lincoln, RI: Quality Metrics.
- Whitney, I., & Smith, P. K. (1993). A survey of the nature and extent of bullying in junior/middle and secondary schools. *Educational Research*, 35, 3-25. doi: 10.1080/0013188930350101
- Wiener, J., & Mak, M. (2009). Peer victimization in children with Attention-Deficit/Hyperactivity Disorder. *Psychology in the Schools*, 46, 116-131. doi: 10.1002/pits.20358
- Wight, R. G., Botticello, A. L., & Aneshensel, C. S. (2006). Socioeconomic context, social support, and adolescent mental health: A multilevel investigation.

*Journal of Youth and Adolescence*, 35, 109-120. doi: 10.1007/s10964-005-9009-2

- Wild, L. G., Flisher, A. J., Bhana, A., & Lombard, C. (2004). Associations among adolescent risk behaviours and self-esteem in six domains. *Journal of Child Psychology and Psychiatry*, 45, 1454-1467. doi: 10.1111/j.1469-7610.2004.00330.x
- Willitts, M. (2006). Measuring child poverty using material deprivation: Possible approaches *DWP Working Paper No. 28*. London: Department for Work and Pensions.
- Wilson, M. L., Bovet, P., Viswanathan, B., & Suris, J. C. (2012). Bullying among adolescents in a sub-Saharan middle-income setting. *Journal of Adolescent Health*, 51, 96-98. doi: 10.1016/j.jadohealth.2011.11.024
- Winsper, C., Lereya, T., Zanarini, M., & Wolke, D. (2012). Involvement in bullying and suicide-related behavior at 11 years: A prospective birth cohort study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 51, 271-282. doi: 10.1016/j.jaac.2012.01.001
- Wolke, D., Copeland, W. E., Angold, A., & Costello, E. J. (2013). Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychological Science*, 24, 1958-1970. doi: 10.1177/0956797613481608
- Wolke, D., Lereya, S. T., Fisher, H. L., Lewis, G., & Zammit, S. (2013). Bullying in elementary school and psychotic experiences at 18 years: A longitudinal, population-based cohort study. *Psychological Medicine*, 44, 2199-2211. doi: 10.1017/S0033291713002912
- Wolke, D., & Samara, M. (2004). Bullied by siblings: Association with peer victimisation and behaviour problems in Israeli lower secondary school

- children. *Journal of Child Psychology and Psychiatry*, 45, 1015-1029. doi: 10.1111/j.1469-7610.2004.t01-1-00293.x
- Wolke, D., & Skew, A. J. (2012). Bullying among siblings. *International Journal of Adolescent Medicine and Health*, 24, 17-25. doi: 10.1515/ijamh.2012.004
- Wolke, D., Söhne, B., Ohrt, B., & Riegel, K. (1995). Follow-up of preterm children: important to document dropouts. *The Lancet*, 345, 447.
- Wolke, D., & Stanford, K. (1999). Bullying in school children. In D. Messer & S. Millar (Eds.), *Developmental Psychology* (pp. 341-360). London, UK: Arnold.
- Wolke, D., Waylen, A., Samara, M., Steer, C., Goodman, R., Ford, T., & Lamberts, K. (2009). Selective drop-out in longitudinal studies and non-biased prediction of behaviour disorders. *The British Journal of Psychiatry*, 195, 249-256.
- Wolke, D., Woods, S., Bloomfield, L., & Karstadt, L. (2000). The association between direct and relational bullying and behaviour problems among primary school children. *Journal of Child Psychology and Psychiatry*, 41, 989-1002. doi: 10.1111/1469-7610.00687
- Wolke, D., Woods, S., & Samara, M. (2009). Who escapes or remains a victim of bullying in primary school? *British Journal of Developmental Psychology*, 27, 835-851. doi: 10.1348/026151008X383003
- Wolke, D., Woods, S., Stanford, K., & Schulz, H. (2001). Bullying and victimization of primary school children in England and Germany: Prevalence and school factors. *British Journal of Psychology*, 92, 673-696. doi: 10.1348/000712601162419

- Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W. C., & Chu, B. C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, *44*, 134-151. doi: 10.1111/1469-7610.00106
- Woods, S., & Wolke, D. (2003). Does the content of anti-bullying policies inform us about the prevalence of direct and relational bullying behaviour in primary schools? *Educational Psychology*, *23*, 381-401.
- Woods, S., & Wolke, D. (2004). Direct and relational bullying among primary school children and academic achievement. *Journal of School Psychology*, *42*, 135-155. doi: 10.1016/j.jsp.2003.12.002
- Woods, S., Wolke, D., Nowicki, S., & Hall, L. (2009). Emotion recognition abilities and empathy of victims of bullying. *Child Abuse & Neglect*, *33*, 307-311. doi: 10.1016/j.chiabu.2008.11.002
- Woodworth, S., Belsky, J., & Crnic, K. (1996). The determinants of fathering during the child's second and third years of life: A developmental analysis. *Journal of Marriage and Family*, *58*, 679-692. doi: 10.2307/353728
- Woolfenden, S. R., Williams, K., & Peat, J. (2001). Family and parenting interventions in children and adolescents with conduct disorder and delinquency aged 10-17. *Cochrane Database of Systematic Reviews 2001*, *2*. doi: 10.1002/14651858.CD003015
- Ybarra, M. L., & Mitchell, K. J. (2008). How risky are social networking sites? A comparison of places online where youth sexual solicitation and harassment occurs. *Pediatrics*, *121*, e350-e357.

- Yeh, H. C., & Lempers, J. D. (2004). Perceived sibling relationships and adolescent development. *Journal of Youth and Adolescence*, *33*, 133-147. doi: 10.1023/B:JOYO.0000013425.86424.0f
- Yeung, W. J., Linver, M. R., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. *Child Development*, *73*, 1861-1879. doi: 10.1111/1467-8624.t01-1-00511
- Yoneyama, S., & Rigby, K. (2006). Bully/victim students and classroom climate. *Youth Studies Australia*, *25*, 34-41.
- Zimmerman, F. J., Glew, G. M., Christakis, D. A., & Katon, W. (2005). Early cognitive stimulation, emotional support, and television watching as predictors of subsequent bullying among grade-school children. *Archives of Pediatrics & Adolescent Medicine*, *159*, 384-388. doi: 10.1001/archpedi.159.4.38
- Zwierzynska, K., Wolke, D., & Lereya, T. S. (2013). Peer victimization in childhood and internalizing problems in adolescence: A prospective longitudinal study. *Journal of Abnormal Child Psychology*, *41*, 309-323. doi: 10.1007/s10802-012-9678-8

## Appendix A Understanding Society Youth Self-Report Questionnaire

---

YOUR QUESTIONNAIRE

Your questionnaire

Self-completion questionnaire (10 - 15 yrs)

YOUR QUESTIONNAIRE

Point.No	Address	HH.No	P.No	ChkL
<input type="text"/>				
First name	Int No	F/Area		
<input type="text"/>	<input type="text"/>	<input type="text"/>		

Understanding Society

ESW  
P2822 W1  
10-15s

### COMPLETING THE QUESTIONNAIRE

The questions inside cover a wide range of subjects, but each one can be answered simply by ticking the box next to the answer, as in the example below. Next to some of the boxes are arrows and instructions. They show or tell you which question to answer next. If there are no special instructions, just answer the next question.

#### Example Question

---

**Q16 Did you have breakfast today?**

Yes

No  → 18

When you have finished answering the questionnaire, please seal it in the envelope and hand it back to the interviewer. If you have any questions or need help, please ask the interviewer. Thank you again for your help.

**1** Please write your date of birth.

<input type="text"/>							
Day		Month		Year			
YPDOBD		YPDOBM		YPDOBY			

**2** Please tick whether you are male or female.

Male  Female  YPSEX

**3** Do you ever use a computer at home? This includes computers for playing games but not games consoles.

YPCOMP

Yes  → 4

No  → 9

Don't have a computer at home  → 9

**4** How often do you use a computer at home for doing schoolwork or course work?

YPPCHW

Every day

At least once a week

At least once a month

Less often than once a month

Never

**5** How many hours do you spend using the computer at home for playing games on a normal school day?

YPCPGS

None

Less than an hour

1-3 hours

4-6 hours

7 or more hours

**6** How often do you use the computer at home for connecting to the Internet, including for playing games?

YPCINTNT

Every day

At least once a week

At least once a month

Less often than once a month

Never

**7** Do you belong to a social web-site such as Bebo, Facebook or MySpace?

YPSOCWEB

Yes

→ **8**

No

→ **9**



8

How many hours do you spend chatting or interacting with friends through a social web-site like that on a normal school day?

YPNETCHT

None

Less than an hour

1-3 hours

4-6 hours

7 or more hours

9

Do you or anyone else in your house have a games console such as Playstation, X-Box, Wii or something like that?

YPCONSOL

Yes



10

No



11

10

How many hours do you spend playing games on a games console on a normal school day?

YPCONSTM

None

Less than an hour

1-3 hours

4-6 hours

7 or more hours

**11** How many hours do you spend watching TV, including video and DVDs, on a normal school day?

YPTVVIDHRS

None

Less than an hour

1-3 hours

4-6 hours

7 or more hours

**12** Do you have your own personal mobile phone?

YPMOBU

Yes

No

**13** How many close friends do you have - friends you could talk to if you were in some kind of trouble?

YPNPAL

Write in number



The next few questions are about you and your family.

**14** In the past 7 days how many times have you eaten an evening meal together with the rest of your family who live with you?

YPEATLIVU

None

1-2 times

3-5 times

6-7 times

**15** Do you feel supported by your family, that is the people who live with you?

YPFAMSUP

I feel supported by my family in most or all of the things I do

I feel supported by my family in some of the things I do

I do not feel supported by my family in the things I do

**16** Suppose you felt upset or worried about something and you wanted to talk about it. Who would you turn to first within your family? Please tick one box only.

YPUPSET

Mum or stepmum

Dad or stepdad

A brother or sister (or step-brother/sister)

Another relative living with you

Another relative not living with you

No-one within my family

**17** In the past month, how many times have you stayed out after 9.00pm at night without your parents knowing where you were?

YPLATE

- Never
- 1-2 times
- 3-9 times
- 10 or more times

**18** Do you have any brothers or sisters living with you at home?

YPSIBLING

- Yes  → **19**
- No  → **21**

**19** How often do any of your brothers or sisters do any of the following to you at home?

	Never	Not much (1-3 times in last 6 months)	Quite a lot (more than 4 times in the last 6 months)	A lot (a few times every week)	
Hit, kick, or push you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSIBHIT
Take your belongings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSIBSTEAL
Call you nasty names	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSIBVERAB
Make fun of you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSIBTEASE



20

How often do you do any of the following to your brothers or sisters at home?

	Never	Not much (1-3 times in last 6 months)	Quite a lot (more than 4 times in the last 6 months)	A lot (a few times every week)	
Hit, kick, or push them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPHITSIB
Take their belongings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSTEALSIB
Call them nasty names	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPVERABSIB
Make fun of them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPTEASESIB

The next few questions are about your relationship with your parents even if either of them live in a different household to you.

21

Most children have occasional quarrels with their parents. How often do you quarrel with your mother?

YPARGM

Most days

More than once a week

Less than once a week

Hardly ever

Don't have a mother

**22** How often do you quarrel with your father?

YPARGF

Most days

More than once a week

Less than once a week

Hardly ever

Don't have a father

**23** How often do you talk to your mother, about things that matter to you?

YPTLKM

Most days

More than once a week

Less than once a week

Hardly ever

Don't have a mother

**24** How often do you talk to your father, about things that matter to you?

YPTLKF

Most days

More than once a week

Less than once a week

Hardly ever

Don't have a father



25

Now for some questions about how you see yourself as a person. For each item, please tick the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you aren't absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

	Not true	Somewhat true	Certainly true	
I try to be nice to other people. I care about their feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQA
I am restless, I cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQB
I get a lot of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQC
I usually share with others (food, games, pens, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQD
I get very angry and often lose my temper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQE
I am usually on my own. I generally play alone or keep to myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQF
I usually do as I am told	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQG
I worry a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQH
I am helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQI
I am constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQJ
I have one good friend or more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQK

	Not true	Somewhat true	Certainly true	
I fight a lot. I can make other people do what I want	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQL
I am often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQM
Other people my age generally like me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQN
I am easily distracted, I find it difficult to concentrate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQO
I am nervous in new situations. I easily lose confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQP
I am kind to young children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQQ
I am often accused of lying or cheating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQR
Other children or young people pick on me or bully me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQS
I often volunteer to help others (parents, teachers, children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQT
I think before I do things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQU
I take things that are not mine from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQV
I get on better with adults than with people my own age	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQW
I have many fears, I am easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQX
I finish the work I'm doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YPSDQY



26

The next few questions are about how you feel about different aspects of your life. The faces express various types of feelings. Below each face is a number where '1' is completely happy and '7' is not at all happy. Please tick the box which comes closest to expressing how you feel about each of the following things....

A Your school work?

YPHSW

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					

B Your appearance?

YPHAP

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					

C Your family?

YPHFM

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					

D Your friends?

YPHFR

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					

E The school you go to?

YPHSC

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					

F Which best describes how you feel about your life as a whole?

YPHLF

						
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>					



The next questions are about school and what you want to happen in the future.

**27** How important do you think it is for you to do well in your GCSE exams or Standard Grades (if you live in Scotland)?

YPACVWELL

Very important

Important

Not very important

Not at all important

**28** At the moment, young people can leave school at 16. What would you most like to do when you are 16?

YPLVSC2DO

Get a full time job  → **30**

Study full time  → **29**

Get a job and study  → **29**

Do something else  → **29**

Don't know  → **29**

**29** Would you like to go on to do further full-time education at a college or University after you finish school?

YP2UNI

Yes

No

Don't know

**30** My parents are interested in how I do at school.

YPPARSCH

Always or nearly always

Sometimes

Hardly ever

Never

Not sure

**31** My parents come to school parent evenings.

YPPAREVE

Always or nearly always

Sometimes

Hardly ever

Never

Not sure

**32** In the last 12 months, have you ever played truant, that is missed school without permission, even if it was only for a half day or single lesson?

YPTRUANT

Yes

No



**33** How often do other pupils at your school misbehave or cause trouble in your classes?

YPOTRMISB

- In most or all of your classes
- Less often but in more than half of your classes
- In about half your classes
- Now and then
- This is not a problem at all

**34** And how often would you say you yourself misbehave or cause trouble in your class?

YPMISBSCH

- In most or all of your classes
- Less often but in more than half of your classes
- In about half your classes
- Now and then
- Never

Now some questions about bullying at school.

**35** How often do you get physically bullied at school, for example getting pushed around, hit or threatened, or having belongings stolen?

YPFRRPBULLI

- Never
- Not much (1-3 times in last 6 months)
- Quite a lot (more than 4 times in last 6 months)
- A lot (a few times every week)

36

How often do you get bullied in other ways at school such as getting called names, getting left out of games, or having nasty stories spread about you on purpose?

YPFROBULLI

Never

Not much (1-3 times in last 6 months)

Quite a lot (more than 4 times in last 6 months)

A lot (a few times every week)

37

Do you physically bully other children at school by hitting or pushing them around, threatening or stealing their things?

YPFRPBULLY

Never

Not much (1-3 times in last 6 months)

Quite a lot (more than 4 times in last 6 months)

A lot (a few times every week)

38

Do you physically bully other children in other ways at school such as calling them names, leaving them out of games or spreading nasty stories about them on purpose?

YPFROBULLY

Never

Not much (1-3 times in last 6 months)

Quite a lot (more than 4 times in last 6 months)

A lot (a few times every week)



Here are a few questions about health and nutrition.

**39** How many portions of fresh fruit or vegetables do you eat on a typical day? One portion is one piece of fruit or one serving of a vegetable or salad item.

YPFRUTPPD

5 or more portions

3 - 4 portions

1 - 2 portions

None

**40** And how many days in a usual week do you eat fast food such as McDonalds, Burger King, KFC or other take-aways like that?

YPFFDWK

Every day, or nearly every day

About once a week

Every now and then

Never or hardly ever

**41** How many days in a usual week do you eat crisps or sweets or have fizzy drinks such as Coke or lemonade?

YPJFD

Every day, or nearly every day

About once a week

Every now and then

Never or hardly ever

**42** How many days in a usual week do you play sports, do aerobics or do some other keep fit activity?

YPPSPRT

Every day

5-6 days

3-4 days

1-2 days

Less often than once a week

Never or hardly ever

**43** What is the main way you usually travel to school?

YPTRVL2SCH

Walk all the way

Ride a bike

By bus or tube

By car

By train

Some other way/combination

**44** Do you ever smoke cigarettes at all?

YPEVRSMO

Yes

→ **45**

No

→ **46**



**45** Please read the statements below and tick the box beside the statement that describes you best.

YPSMOFRQ

I have smoked only once or twice

I used to smoke but I don't now

I sometimes smoke, but not every week

I usually smoke between one and six cigarettes a week

I usually smoke more than six cigarettes a week

**46** Have you ever had an alcoholic drink?  
That is a whole drink, not just a sip.

YPEVRALC

Yes

No

**47** Do you have any friends who drink alcohol regularly,  
that is at least once a week?

YPFRALCO

Yes

No

**48** And would you say that you drink regularly, that is at  
least once a week?

YPREGALCO

Yes

No

49

How many times in the last four weeks have you had an alcoholic drink?

YPDKLM

- Most days
- Once or twice a week
- 2 or 3 times
- Once only
- Never

Please tick one answer on the list for each of the following questions

50

What is your religion? If you have no religion tick "No religion".

YPRELIGGB

For Northern Ireland:  
YPRELIGNI

- No religion
- Church of England/Anglican
- Roman Catholic
- Church of Scotland
- Other Christian
- Muslim/Islam
- Hindu
- Jewish
- Sikh
- Other
- I don't know

51

And which of the following groups do you think you belong to? Please choose one section and tick the box that applies to you.

YPRACE

**White**

British

English

Scottish

Welsh

Northern Irish

Irish

Gypsy or Irish Traveller

Any other White Background

**Mixed**

White and Black Caribbean

White and Black African

White and Asian

Any other mixed background

**Asian or Asian British**

Indian

Pakistani

Bangladeshi

Chinese

Any other Asian background

**Black / African / Caribbean / Black British**

Caribbean

African

Any other Black background

**Other**

Arab

Any other ethnic group

The final two questions are about what you want to do in the future.

**52** At what age would you like to leave home?

YPLVHM

Please write in age:

**53** What job would you like to do once you leave school or finish full-time education?

YPSOC

YPSOC00

YPSOC10



Thank you  
for your help

**Please place the questionnaire in the envelope  
and hand it back to your interviewer**

Or please return to the address below:

**National Centre for Social Research  
Unit B2, Admiralty Park, Station Road, Holton Heath,  
Poole, BH16 6HX**

## Appendix B PRISMA Checklist

Section	Criteria	Page
<b>Title</b>		
1) Title	Identify the report as a systematic review, meta-analysis, or both.	71
<b>Abstract</b>		
2) Structure summary	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	71-72
<b>Introduction</b>		
3) Rationale	Describe the rationale for the review in the context of what is already known.	72-74
4) Objectives	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	73-74
<b>Methods</b>		
5) Protocol and registration	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	74
6) Eligibility criteria	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	74-75
7) Information sources	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	74
8) Search	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	74
9) Study selection	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	75-76
10) Data collection process	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	76-78

Section	Criteria	Page
11) Data items	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	77-78
12) Risk of bias in individual studies	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	78
13) Summary of measures	State the principal summary measures (e.g., risk ratio, difference in means).	76-77
14) Synthesis of results	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$ ) for each meta-analysis.	77-78
15) Risk of bias across studies	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	78-79
16) Additional analyses	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	79
<b>Results</b>		
17) Study selection	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	Figure 3
18) Study characteristics	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 3
19) Risk of bias within studies	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	86-94
20) Results of individual studies	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Figures 4-9
21) Synthesis of results	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	86-94
22) Risk of bias across studies	Present results of any assessment of risk of bias across studies (see Item 15).	86-94 Table 4
23) Additional analysis	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	86-94 Appendix C,D,E
<b>Discussion</b>		
24) Summary of evidence	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	97
25) Limitations	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	100-101

<b>Section</b>	<b>Criteria</b>	<b>Page</b>
26) Conclusions	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	101-103
<b>Funding</b>		
27) Funding	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	-

## Appendix C Moderator Analysis for Victims

Outcome	Moderator	Qbetween	N. of Studies	Mean Effect Size	Qwithin
Low SES	<b>Design</b>	0.48			103.79**
	Cross-sectional		17	1.45	98.46**
	Longitudinal		4	1.52	5.33**
	<b>Country</b>	15.24*			89.03**
	Europe		10	1.31	16.73
	Other		2	1.51	7.43
	US		6	1.53	7.82
	Cross-National		3	1.57	57.05**
	<b>Age Group</b>	4.49			99.78**
	Child		6	1.43	6.26
	Adolescent		8	1.60	48.80**
	Both		7	1.43	44.72**
	<b>Measure</b>	21.79**			82.47**
	Binary		10	1.41	19.69*
	Ordinal		9	1.42	50.90**
	Scale		2	2.04	11.88**
	<b>Socioeconomic</b>	73.12**			31.14**
	Affluence		3	1.84	13.85**
	Education		6	1.23	5.80
	Disadvantage		5	1.56	3.24
Income		1	1.66	0.00	
Occupation		3	1.24	1.17	
SES		3	1.95	7.09*	
High SES	<b>Design</b>	30.40**			1120.81**
	Cross-sectional		11	0.92	1119.37**
	Longitudinal		2	0.98	1.44
	<b>Country</b>	1085.33**			65.88**
	Europe		5	0.97	42.61**

Outcome	Moderator	Q <sub>between</sub>	N. of Studies	Mean Effect Size	Q <sub>within</sub>
	Other		1	3.59	0.00
	US		5	1.01	16.66*
	Cross-National		2	0.32	6.61*
	<b>Age Group</b>	3.21			1147.99**
	Child		2	0.80	0.18
	Adolescent		3	0.97	7.15*
	Both		8	0.95	1140.66**
	<b>Measure</b>	867.79			283.41**
	Binary		2	0.82	0.12
	Ordinal		6	0.45	272.16**
	Scale		5	1.00	11.13*
	<b>Socioeconomic</b>	903.86**			247.34**
	Affluence		2	0.36	9.72**
	Education		4	0.50	216.40**
	Disadvantage		-	-	-
	Income		1	0.95	0.00
	Occupation		1	0.83	0.00
	SES		5	1.00	21.22**

Q<sub>between</sub> = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; Q<sub>within</sub> = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; \*p<.05; \*\*p<.01

## Appendix D Moderator Analysis for Bullies

Outcome	Moderator	Qbetween	N. of Studies	Mean Effect Size	Qwithin
<b>Low SES</b>	<b>Design</b>	11.66*			33.20**
	Cross-sectional		11	1.02	33.20**
	Longitudinal		1	1.47	0.00
	<b>Country</b>	17.61**			27.25**
	Europe		8	1.10	19.28*
	Other		1	3.45	0.00
	US		2	1.26	7.97
	Cross-National		1	0.98	0.00
	<b>Age Group</b>	24.62**			20.24*
	Child		4	1.37	3.05
	Adolescent		6	1.00	9.22
	Both		2	1.26	7.97*
	<b>Measure</b>	14.45**			30.41**
	Binary		6	1.01	23.47**
	Ordinal		5	1.17	6.94
	Scale		1	1.47	0.00
	<b>Socioeconomic</b>	23.60**			21.26**
	Affluence		2	0.93	0.81
	Education		3	0.98	3.55
	Disadvantage		4	1.16	16.31**
Income		-	-	-	
Occupation		1	1.15	0.00	
SES		2	1.90	0.59	
<b>High SES</b>	<b>Design</b>	6.62*			107.76**
	Cross-sectional		9	1.01	24.55*
	Longitudinal		6	0.97	83.20**
	<b>Country</b>	12.40*			101.98**
	Europe		4	0.98	5.07
Other		1	2.60	0.00	

Outcome	Moderator	Q <sub>between</sub>	N. of Studies	Mean Effect Size	Q <sub>within</sub>
	US		8	0.98	93.67**
	Cross-National		2	1.26	3.24*
	<b>Age Group</b>	24.97**			89.41**
	Child		4	0.67	2.01
	Adolescent		7	0.96	84.80**
	Both		4	0.99	2.61
	<b>Measure</b>	8.76*			105.62**
	Binary		1	0.72	0.00
	Ordinal		4	1.08	11.34*
	Scale		10	0.98	94.28**
	<b>Socioeconomic</b>	40.40**			73.98**
	Affluence		2	1.01	0.70
	Education		3	0.59	2.30
	Disadvantage		-	-	-
	Income		5	0.83	59.59**
	Occupation		-	-	-
	SES		5	0.99	11.39*

Q<sub>between</sub> = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; Q<sub>within</sub> = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; \*p<.05; \*\*p<.01

## Appendix E Moderator Analysis for Bully-Victims

Outcome	Moderator	Qbetween	N. of Studies	Mean Effect Size	Qwithin
<b>Low SES</b>	<b>Design</b>	32.88**			7.29
	Cross-sectional		7	1.33	7.29
	Longitudinal		1	3.95	0.00
	<b>Country</b>	3.08			37.09**
	Europe		6	1.53	37.09**
	Other		1	6.45	0.00
	US		1	1.48	0.00
	Cross-National		-	-	-
	<b>Age Group</b>	11.16*			29.02**
	Child		3	2.02	24.86**
	Adolescent		4	1.29	4.16
	Both		1	1.48	0.00
	<b>Measure</b>	36.70**			3.47
	Binary		4	1.26	0.51
	Ordinal		3	1.87	2.96
	Scale		1	3.95	0.00
	<b>Socioeconomic</b>	25.31**			14.86**
	Affluence		1	1.21	0.00
	Education		2	1.43	2.17
	Disadvantage		3	2.66	12.68**
	Income		-	-	-
Occupation		1	1.22	0.00	
SES		1	6.45	0.00	
<b>High SES</b>	<b>Design</b>	2.82			11.74*
	Cross-sectional		3	1.54	11.69**
	Longitudinal		2	0.98	0.05
	<b>Country</b>	14.50*			0.05
	Europe		3	0.98	0.05
	Other		1	6.63	0.00
	US		1	0.77	0.00
	Cross-National		-	-	-

Outcome	Moderator	Q <sub>between</sub>	N. of Studies	Mean Effect Size	Q <sub>within</sub>
	<b>Age Group</b>	0.03			14.53*
	Child		-	-	-
	Adolescent		3	0.98	14.24*
	Both		2	0.98	0.29
		6.41			8.14*
	<b>Measure</b>				
	Binary		-	-	-
	Ordinal		2	2.33	7.80*
	Scale		3	0.98	0.34
	<b>Socioeconomic</b>	0.29			14.27**
	Affluence		1	0.77	0.00
	Education		1	0.97	0.00
	Disadvantage		-	-	-
	Income		-	-	-
	Occupation		-	-	-
	SES		3	0.98	14.27**

**Q<sub>between</sub>** = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; **Q<sub>within</sub>** = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; \*p<.05; \*\*p<.01