

University of Strathclyde
School of Psychological Sciences and Health

The Role of Cognitive Appraisals in the
Relationship between Peer-Victimisation and Poor
Mental Health

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degree of Doctor of Philosophy 2020

DECLARATION

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Nathalie Noret conceptualized the studies, completed the literature searching and review, defined and completed the data analysis, and drafted the manuscripts. Simon Hunter provided guidance on the study design and data analysis and provided feedback on the draft manuscripts and responses to reviewers. Susan Rasmussen guidance on the study design and feedback on the draft manuscripts and responses to reviewers. All authors read and approved the final versions of the manuscripts.



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ABSTRACT

Over 40-years of research has highlighted the prevalence of peer-victimisation, and the impact experiencing this behaviour can have on adolescents' mental health. Underpinned by the transactional model of stress (Lazarus & Folkman, 1984) and the socio-ecological model (Bronfenbrenner, 1979; Espelage & Swearer, 2003), the aim of this thesis was to examine the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health. Three studies were undertaken: a systematic review of extant literature; the secondary data analysis of a cross-sectional study of 3,737 pupils examining the role of domain-specific perceived social support in the relationship between bullying, cyberbullying and poor mental health; and a longitudinal study of 530 adolescents aged 11 to 14 examining the role of cognitive appraisals in the relationship between peer-victimisation and symptomatology. The results of the systematic review highlighted an inconsistent pattern of findings regarding the role of perceived social support. Both the cross-sectional and longitudinal study found that perceived social support from parents/guardians, teachers, and friends did not significantly moderate the relationship between peer-victimisation and poor mental health. The results of the systematic review also highlighted a role for threat and control cognitive appraisals in this relationship. Cognitive appraisals of threat, challenge, control and blame were examined in the longitudinal study. Results of this study found a small but significant total indirect effect for threat and challenge appraisals in the development of depressive symptomatology. This study is the first to report a role for challenge appraisals in adolescents' adaptations to peer-victimisation. The findings of this thesis highlight the utility of the transactional model of stress and socio-ecological

model for researching the relationship between peer-victimisation and poor mental health.

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TABLE OF CONTENTS

ABSTRACT	iv
ACKNOWLEDGEMENTS	vi
LIST OF TABLES	3
LIST OF FIGURES.....	3
Chapter 1 INTRODUCTION.....	4
Chapter 2 PEER-VICTIMISATION AND BULLYING.....	7
The nature and prevalence of bullying and peer-victimisation.....	8
The challenge of defining bullying	11
The socio-ecological approach to peer-victimisation	20
The relationship between peer-victimisation and poor mental health	30
Anti-Bullying Interventions	38
Chapter 3 PEER-VICTIMISATION AS A STRESSFUL EXPERIENCE	45
Defining stress	46
Stress as a Response.....	46
Stress as a Transaction.....	46
The Transactional Model of Stress & The Socio-Ecological Approach.....	52
The Transactional Model of Stress: Cognitive appraisals	56
Primary Appraisals.....	56
Secondary Appraisals.....	58
Aim of the thesis and study 1.....	64
Chapter 4 SYSTEMATIC REVIEW	66
Abstract.....	67
Introduction.....	68
Method	74
Results.....	79
Discussion.....	91
Conclusion	100
References.....	101
Chapter 5 AIM OF STUDIES TWO AND THREE	123
Chapter 6 METHOD	126
Open Science	126
Measuring bullying and peer-victimisation	131
Measuring bullying in adolescents.....	137
The Personal Experiences Checklist (Hunt, Peters, & Rapee, 2012).	138
Research Ethics.....	146
Chapter 7 CROSS-SECTIONAL STUDY	148
Abstract.....	149
Introduction.....	150
Method	159
Results.....	165
Discussion.....	168
Conclusion	175
References.....	176
Chapter 8 LONGITUDINAL STUDY	192
Abstract.....	193
Introduction.....	194

Method	203
Results.....	209
Discussion.....	213
Conclusion	220
References.....	221
Chapter 9 DISCUSSION	236
The relationship between peer-victimisation and poor mental health.	236
The role of cognitive appraisals in the relationship between peer-victimisation and mental health	238
The Transactional Model of Stress & The Socio-Ecological Approach.....	245
Evaluation of the thesis	252
Implications for Practice	259
Chapter 10 CONCLUSION	261
REFERENCES.....	264
APPENDICES	307
Appendix i: Ethical approval for the cross-sectional study.....	308
Appendix ii: Study two survey.....	309
Appendix iii: Ethical approval for the longitudinal study	312
Appendix iv: Pre-Registration.....	313
Appendix v: Participant Information Sheet (School).....	321
Appendix vi: Participant Information Sheet (Parents)	325
Appendix vii: Participant Information Sheet (Pupils).....	331
Appendix viii: Study three survey.....	335
Appendix ix: Debrief sheet for pupils	355

LIST OF TABLES

Table 2.1 Meta-analyses synthesising the relationship between bullying, peer-victimisation and negative outcomes.	31
Table 2.2 Summary of meta-analyses of anti-bullying interventions/ programs.	40
Table 4.1 Quality Appraisal of the Included Studies	114
Table 4.2 Study Characteristics	115
Table 6.1 Distribution of responses to the PECK-SF at time 1	143
Table 6.2 Tests of invariance over time for the short PECK	145
Table 7.2 Descriptive statistics and correlations for bullying, cyberbullying and mental health difficulties	188
Table 7.3 Descriptive statistics and correlations shown by gender.....	188
Table 7.4 The number (and percentage) of participants reporting who they would talk to if they were worried or concerned about something.	189
Table 7.5 Moderation Analyses: the relationships between bullying, cyberbullying, perceived social support, and mental health difficulties	190
Table 8.1 Participant demographics across the three time points	233
Table 8.2 Descriptive statistics and correlations between all variables across the three time points.....	234
Table 8.3 Unstandardized and standardized paths for mediation model.....	235
Table 8.4 Unstandardized and standardized paths for moderation model	235

LIST OF FIGURES

Figure 2.1 The socio-ecological framework	21
Figure 3.1 The transactional model of stress (Lazarus & Folkman, 1984).	47
Figure 4.1 PRISMA diagram reporting search results	113
Figure 7.1 Example Model.....	187

CHAPTER 1 INTRODUCTION

In recent years in the UK, there has been increased concern regarding adolescent mental health (Collishaw, Furzer, Thapar, & Sellers, 2019; Pitchforth et al., 2018). Understanding the factors that relate to poor mental health in this period of the lifespan is fundamental to developing appropriate, evidence-based, interventions. Over forty years of research has highlighted the prevalence and impact of peer-victimisation. Approximately 30% of adolescents in the UK experience peer-victimisation ((Przybylski & Bowes 2017). Research to date has highlighted the impact these experiences can have on a range of adverse outcomes, including academic difficulties, antisocial behaviour, and poor mental health (e.g., Nakamoto & Schwartz, 2010; Reijntjes, Kamphuis, Prinzie, & Telch, 2010; Valdebenito, Ttogi, Eisner, & Gaffney, 2017). The prevalence of peer-victimisation and the impact such experiences can have on poor mental health, has led some to argue that peer-victimisation is a public health crisis (Brendgen & Poulin, 2018).

Not all adolescents who experience peer-victimisation develop poor mental health (Newman, Holden, & Delville, 2005). Understanding individual differences in this relationship is central to advancing our knowledge of the impact of peer-victimisation. Therefore, and underpinned by an integration of the transactional model of stress (Lazarus, 1999; Lazarus & Folkman, 1984) and socio-ecological approach (Bronfenbrenner, 1979; Swearer & Espelage, 2004), the aim of this thesis is to examine the context within and process through which, peer-victimisation relates to poor mental health. Specifically, this thesis will examine the role of cognitive appraisals in this relationship.

This thesis is presented over a series of chapters and published journal articles. The literature review is presented in three chapters. It includes a discussion of: the definitional debates surrounding peer-victimisation and bullying, the prevalence of peer-victimisation and its relationship with poor mental health, and the value of employing a socio-ecological approach when researching peer-victimisation (Bronfenbrenner, 1979; Swearer & Espelage, 2004). The second chapter in the literature review will focus on conceptualising peer-victimisation as a stressful experience, and how the transactional model of stress (Lazarus & Folkman, 1984) can be employed to aid our understanding of the relationship between peer-victimisation and poor mental health. The final chapter of the literature review, and the first study of the thesis, reports on a systematic review of existing literature examining the relationship between peer-victimisation, cognitive appraisals, and poor mental health. This section of the thesis will end with the justification for and aims of studies two and three.

In the method chapter (chapter 6), the challenges of measuring peer-victimisation and bullying will be discussed, alongside a discussion of the benefits of open science and pre-registration. Studies two and three are then presented. Study two reports on the secondary data analysis collected through a local authority wide cross-sectional study. This study examined the role of perceived social support in the relationship between experiences of being bullied, cyberbullied, and poor mental health. Both the systematic review (study 1) and the cross-sectional study (study 2) are published in peer-reviewed journals. The final study, a longitudinal study on the role of cognitive appraisals in the longitudinal relationship between peer-victimisation and depressive symptomatology, is presented in chapter 8. The

discussion chapter presents a broad discussion of the three studies, alongside a discussion on the implications for future research and practice. The conclusion to the thesis is presented in the final chapter (chapter 10).

CHAPTER 2 PEER-VICTIMISATION AND BULLYING

Peer-victimisation and bullying are specific forms of aggressive behaviour. Agreeing a definition of peer-victimisation and bullying remains a significant challenge for those researching these behaviours. Aggression is typically defined as a behaviour perpetrated intentionally to cause harm to another person (Allen & Anderson, 2017). There are two broad categories of aggressive behaviour, namely reactive and proactive (instrumental) aggression. Reactive aggression includes behaviours typically perpetrated in response to being threatened or provoked (Crick & Dodge 1996). Whereas, proactive aggression is an unprovoked and premeditated act, where the perpetrator aims to acquire or achieve something (Dodge & Coie 1987). Aggressive behaviour can be a common experience within adolescent peer groups and can take several different forms.

Peer-victimisation is defined as frequently experienced aggressive behaviour which occurs within the peer group (Hunter, Boyle, & Warden, 2007; Söderberg & Björkqvist, 2020). Finkelhor, Turney and Hamby (2012) suggest there are different types of peer-victimisation that can be categorised based on both the relationship context and the type of aggressive behaviour experienced. The relationship context describes the nature of the relationship between those involved, for example aggression occurring within a romantic relationship, a gang, or friendship group (Finkelhor et al., 2012). Within these relationships different forms of aggression can be experienced, including direct acts of physical violence, verbal aggression, and more indirect behaviours such as rumour spreading (Finkelhor et al., 2012). Different forms of peer-victimisation differ based on both the relationship context and the type of aggression involved. Research in peer-victimisation has either tended to examine

the broader construct of peer-victimisation or focused more on a specific form of the behaviour, such as bullying (Finkelhor et al., 2012).

Bullying is a specific form of peer-victimisation which occurs within peer relationships, and where there is an intention on the part of the perpetrator to harm the target (Olweus, 1993). Authors have conceptualised bullying as a form of instrumental rather than reactive aggression (Olweus, 1993; Salmivalli, 2010; Sutton, Smith, & Swettenham, 1999). Olweus (1997) argued that bullying “is aggressive behaviour or intentional ‘harm doing’, which is carried out repeatedly and over time and in an interpersonal relationship characterised by an imbalance of power” (p. 496). As such, Olweus’ (1993, 1997) definition highlights that bullying is a distinct form of aggressive behaviour where the aggressive behaviour is: 1) repeatedly experienced, 2) perpetrated with an intention to harm, and 3) occurs in a relationship where there is a power imbalance. Olweus (1997) stressed that these additional characteristics are fundamental to the definition and differentiate bullying from more general aggressive behaviour. The distinction between peer-victimisation and bullying is complicated in the literature due to the inconsistent use of these terms (Hunter et al., 2007). The following sections of this chapter will include a discussion of the current debates surrounding the definition of bullying. This discussion will conclude with an overview of the approach that will be taken in this thesis regarding the use of the terms *bullying* and *peer-victimisation*.

The nature and prevalence of bullying and peer-victimisation

Peer-victimisation is a common experience for many adolescents. Data suggest that between 20 to 25% of young people report being bullied or experiencing peer-victimisation (Juvonen & Graham, 2014). As forms of aggression, peer-

victimisation and bullying can involve various types of aggressive behaviour. Such behaviours include: direct aggression, including physical acts (e.g., being hit or kicked) and verbal acts (e.g., being called names), indirect aggression (e.g., attempts to damage friendship groups, social status, and being left out of a group), and cyberbullying (e.g., being sent nasty text messages) (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Hinduja & Patchin, 2008; Marini, Dane, Bosacki, & YLC-CURA, 2006).

When comparing the prevalence of peer-victimisation and reports of being bullied (those on the receiving end of the behaviour), evidence suggests that peer-victimisation is the more prevalent. In their study of 1,429 pupils aged 8 to 13 years, Hunter et al. (2007) included measures of experiencing aggressive behaviours, indicators of adolescents' perceptions of the intent to harm, and three possible forms of power imbalance reflecting physical strength, peer group size, and popularity. Results of this study suggested that peer-victimisation was more frequent compared to reports of being bullied (30.7% compared to 11.7% respectively). In a similar approach, Söderberg and Björkqvist (2020) surveyed 3,447 students (mean age 14.3 years) on their experiences of peer-victimisation and reports of being bullied alongside self-report measures of peer-support, aggressive behaviour and depressive symptomatology. Like Hunter et al. (2007), they also identified that peer-victimisation was more prevalent than reports of being bullied (13.2% compared to 4.1% respectively), and 6.4% of their sample reported both experiencing peer-victimisation and being bullied. While this limited evidence suggests peer-victimisation may be more prevalent than reports of being bullied, this may be reflective of the measurement tools used. Peer-victimisation is typically measured

using behavioural measures, whereas experiences of being bullied are typically measured using a definitional approach. The debates surrounding these different approaches to measurement are discussed further in the method chapter (Chapter 6).

Alongside differences in the prevalence of peer-victimisation and experiences of being bullied, evidence also suggests there may be differences in the prevalence of different types of aggression experienced. In their meta-analysis of 80 studies (total N=335,519 youth), Modecki, Minchin, Harbaugh, Guerra, and Runions (2014) identified that traditional victimisation (physical, verbal, and indirect bullying) was more prevalent (36%) than cyber-victimisation (15%). This difference in prevalence has also been reported in large scale prevalence studies. For example, in their study of a representative sample of 120,115 15-year-old adolescents, Przybylski and Bowes (2017) found that 30% had experienced some form of bullying in the past couple of months. They also examined the prevalence of different types of bullying and found that 27% of the total sample reported experiencing physical, verbal, or indirect bullying; 3% reported experiencing physical, verbal, or indirect bullying, and cyberbullying; and less than 1% reported experiencing cyberbullying alone. Collectively, such findings suggest that physical, verbal, or indirect forms of bullying are more frequently experienced than cyberbullying, and cyberbullying rarely occurs in isolation (Przybylski & Bowes, 2017; Waasdorp & Bradshaw, 2015). While such evidence suggests that some forms of bullying may be more commonly experienced than others, identifying the prevalence rates of peer-victimisation and experiences of being bullied can be difficult due to the variation in definitions and measurement techniques (Volk, Veenstra, & Espelage, 2017).

The challenge of defining bullying

As discussed, bullying is defined as a specific form of peer-victimisation (Finkelhor et al., 2012). While Olweus' (1993) definition remains one of the most frequently cited definitions of this behaviour, this definition continues to be widely debated. Specifically, discussions surrounding the definition of bullying consider whether the behaviour must be repeatedly experienced, and how to define and measure an intent to harm and an imbalance of power. There are also inconsistencies in the types of aggressive behaviours included in studies of bullying and in researchers' and adolescents' definitions bullying. These definitional issues will be discussed in turn in this section of the thesis. The related methodological issues are discussed in the method section (chapter 6).

Repetition. The element of repetition was included in the definition to differentiate bullying from broader aggressive behaviour (Olweus, 2013). The need for bullying to be repeated reinforces the notion that the behaviour is intentional by excluding single isolated acts of aggression (Olweus, 1993). Bullying is unique from single acts of aggression as it can produce both an immediate negative reaction alongside the fear and threat of future bullying (Goldsmid & Howie, 2014). Yet, some argue that aggressive behaviour does not need to be repeated to produce this negative reaction (e.g., Arora, 1996; Tattum, 1997). For example, Dooley, Pyżalski, and Cross (2009) suggest that incidences of cyberbullying can often involve a single aggressive act, for example posting an embarrassing photograph on a social media site, and such isolated behaviours can be associated with a range of negative outcomes. However, evidence to support this claim is lacking.

The debate regarding the inclusion of repetition, alongside inconsistencies in how repetition is defined and measured, has led some to omit reference to repetition from their definitions. For example, Volk, Dane, and Marini (2014) define bullying as an “aggressive goal-directed behavior that harms another individual within the context of a power imbalance” (p.328). This definition focuses on the impact on those being victimised (the harm) rather than the frequency of the experience. Volk et al. (2014) argued that capturing the impact of the experience, defined as the result of both the frequency of the experience and the intensity (the nature of the aggression), is more important than focusing on the frequency alone. Under this definition, single acts of bullying (e.g., cyberbullying) can be as harmful as more frequent experiences of lower intensity aggression (e.g., a nasty look or stare). Although Volk et al. (2014) have reframed the notion of repetition with “behaviour that harms another” (p.328) the debate remains as to how harm in this context is measured and what is defined as low or high frequency.

Intent to cause harm. Olweus (1993) argued that bullying must involve an intention to harm. This categorises bullying as a form of instrumental, rather than reactive, aggression (Olweus, 1993, 2013; Salmivalli, 2010; Sutton et al. 1999). The intention to harm reflects the perpetrator’s intent to cause harm as a means of gaining power over the person they are bullying (Olweus, 1993). How intention is measured, however, has been the focus of much debate. It is unclear whether this should be taken from the perspective of the person being bullied or the person perpetrating the bullying (Volk et al. 2017). In response to such criticisms, some contemporary definitions of bullying omit reference to intentionality. For example, Volk et al. (2014) define bullying as a goal-directed behaviour where those bullying others aim

to achieve something through their aggressive behaviour (e.g., social status or popularity). Defining bullying as goal-directed continues to highlight the fact that bullying is a form of instrumental aggression (Volk et al. 2014), but also focuses on the outcome achieved by the person perpetrating the bullying. Alternatively, some definitions have attempted to clarify whose perspective should be the focus of definitions of bullying. For example, the Centre for Disease Control (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014) focused on the perspective of those being bullied and replaced the intention to harm with bullying being “any unwanted aggression”. Such amendments to the definition attempt to clarify what is meant by intentionality, alongside whose perspective should be considered. However, the debate regarding the measurement of these characteristics remains.

Power Imbalance. Definitions of bullying highlight that the aggressive behaviour occurs within peer relationships where there is an imbalance of power (Olweus, 1993; Volk et al. 2014). This defining feature of bullying distinguishes it from other forms of aggression (Olweus, 1993; Rodkin, Espelage, & Hanish, 2015). Aggression can occur between individuals with similar levels of power (e.g., social status). But in bullying, power is abused to harm and disempower the person being bullied (Rodkin et al. 2015). This central characteristic of bullying is cyclical in nature: those perpetrating bullying abuse their position of power to cause harm and leave the target vulnerable while simultaneously their use of bullying behaviours results in increased power, through increased popularity, and social status (Pouwels, van Noorden, Lansu, & Cillessen, 2018; Thornberg, 2011; Volk, Provenzano, Ferrell, Dane, & Shulman, 2019). Pellegrini and Long (2002) examined this cyclical relationship in their longitudinal study of children and adolescents during the

transition from primary to secondary school. They found that increased bullying behaviour was related to an increase in dominance (their indicator of power) during the transition period. However, once roles in the social group had been established, bullying behaviour reduced. Pellegrini and Long (2002) suggest that bullying others is a tool adolescents use to gain status in the social group.

A power imbalance highlights the nature of the relationship between the person bullying and the person being bullied (Rodkin et al. 2015). The imbalance can be due to many different characteristics, such as being physically or psychologically weaker, or because of ability or social exclusion (Olweus 1993). Some forms of power imbalance may be observable (e.g., physical strength) whereas others may be more subtle (e.g., based on demographics such as sexual orientation) (Cornell & Limber, 2015). This imbalance can also be fluid, changing in different social settings, and in different relationships (Cornell & Limber, 2015). These various forms of power imbalance make it challenging to design and develop inclusive measures (Nelson, Kendall, Burns, Schonert-Reichl, & Kane, 2019). While discussions of the definition of bullying suggest that an imbalance of power is a key distinguishing feature of bullying behaviour, measuring this imbalance can be challenging. As such, evidence supporting the role of a power imbalance in bullying is limited.

Type of aggressive behaviour. Early research into bullying tended to focus on more direct acts of aggression, such as hitting, kicking, and name-calling (e.g., Lagerspetz, Björkqvist, Berts, & King, 1982). Research emerged in the 1980s and 1990s which focused on more indirect aggression (e.g., Lagerspetz, Björkqvist, & Peltonen, 1988), and research into cyberbullying emerged in the early 2000s (e.g.,

Campbell, 2005). The emergence of research into indirect bullying and cyberbullying posed challenges for how these behaviours are integrated into the definition of bullying. In contrast to direct bullying, indirect bullying captures aggressive, manipulative behaviours which may not be directly observable (Björkqvist et al., 1992). There has been considerable debate, however, as to whether this form of aggression is labelled indirect bullying, relational, or social aggression (Archer and Coyne 2005). Indirect bullying focuses on behaviours that occur covertly, and as such, are not directly observable, such as spreading rumours or leaving someone out of a friendship group (Björkqvist et al. 1992). Whereas definitions of both social and relational aggression focus more on the underpinning motivation of the behaviour being to damage peer relationships and social reputation (Crick, 1995; Underwood, 2003).

Although some have argued that the three categories of indirect, social, and relational bullying are distinct (Crick, 1995; Underwood, 2003), there is substantial overlap in the behaviours described. Indirect bullying and relational aggression focus only on covert forms of aggressive behaviour (e.g., spreading rumours). Whereas social and relational aggression overlap regarding the reference to the underlying motivation to damage social relationships and an individual's reputation in the peer group (Archer & Coyne, 2005; Voulgaridou & Kokkinos, 2015). This overlap in definitions led Archer and Coyne (2005) to suggest unifying the three forms of behaviour under the term *indirect bullying*.

Definitions of both social and relational aggression highlight the impact of this aggressive behaviour on social relationships and social status (Crick, 1995; Underwood, 2003). Research on both relational and social aggression has developed

from work on aggressive behaviour more broadly (Crick, 1995; Werner & Crick, 2004; Underwood, 2003). Relational and social aggression can occur and not be considered bullying (Ostrov, Kamper-DeMarco, Blakely-McClure, Perry, & Mutignani, 2019). The focus on the impact of the behaviour on social relationships highlights the instrumental nature of this aggression, where the goal is to damage such relationships (Galen and Underwood, 1997). However, in a bullying context, the focus on damaging social relationships evident in the definitions of both behaviours is somewhat redundant as this is captured in the broader definition of bullying. The aim of bullying others, irrespective of the type of aggression, is to damage the reputation and social relationships of those being bullied (Thornberg, 2011). Therefore, and in line with Archer and Coyne's (2005) suggestion, in this thesis *indirect bullying* will be the term used to describe and unify these behaviours.

Cyberbullying is defined as bullying, which occurs through electronic or communicative devices (Hinduja & Patchin, 2008). Nocentini et al. (2010) suggest there are four types of cyberbullying behaviour; verbal and written behaviours (e.g., posting nasty or embarrassing posts), visual behaviours (e.g., posting or sharing embarrassing photographs), exclusion (e.g., leaving someone out of a chat group), and impersonation (e.g., where accounts are used to impersonate someone else without permission). Research into cyberbullying can vary with regards to whether cyberbullying is studied in isolation (e.g., Patchin & Hinduja, 2010) or whether it is examined alongside other forms of bullying, what some term traditional bullying (e.g., Kowalski & Limber, 2013). Studies which focus only on experiences of being cyberbullied (e.g., Brochado, Soares, & Fraga, 2017) may overestimate the effect of this behaviour, as experiences of other forms of bullying are not captured (Olweus,

2012). As discussed, evidence to date suggests that cyberbullying rarely occurs in isolation (Przybylski & Bowes, 2017). Therefore, Olweus and Limber (2018) have argued that cyberbullying should be studied as part of a broader “bullying context” (p. 142), where cyberbullying is measured alongside other forms of bullying to capture the unique and overlapping nature of these behaviours.

Children and adolescents’ definitions of bullying. Although limited, research to date has attempted to examine how children and adolescents define bullying. In their survey of 877 Swedish 13-year olds, Frisé, Holmqvist, and Oscarsson (2008) examined adolescent definitions of bullying and analysed frequently described themes in these definitions. A high proportion of the definitions provided by adolescents focused primarily on specific forms of aggressive behaviour, for example hitting or name-calling. Only 20% of participants included any reference to a negative act, and 19% referred to an imbalance of power. Similarly, Vaillancourt et al. (2008) examined understandings and experiences of bullying in a sample of 1,767 students aged 8-18 years. Their participants were split into two groups, one group was provided with a definition of bullying, and the second were asked to provide their own definition. Analyses of the definitions (N=854) provided by the second group found that the majority of participants made reference to bullying being a negative behaviour. Only 26% of students referred to a power imbalance, and older participants were more likely to discuss this. Only 6% referred to repetition, and 1.7% mentioned an intent to harm.

Understanding bullying is likely to develop with age, in line with increased cognitive abilities (Monks & Smith, 2006; Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). Jeffrey and Stuart (2019) conducted an in-depth qualitative analysis

of 20 14-17-year old's understandings of bullying. Participants were presented with four scenarios reflecting different types of bullying (physical, verbal, indirect, and cyber). They were then asked a series of questions about the scenario, including: the acceptability of the behaviour, whether the behaviour described could be considered bullying, and a broad question asking them to describe bullying in their own words. Few participants referred explicitly to a power imbalance. Yet elements of this concept were discussed by older participants, including aggression occurring within the peer group, and the role of popularity. While no participant referred to the intent on the part of the perpetrator to hurt the target, participants instead highlighted that the interpretation of harm or upset should be taken from the perspective of the person being bullied. Therefore, evidence from children and adolescents highlight how they tend to focus more on the nature of the aggressive behaviour, rather than characteristics such as repetition and an imbalance of power. Such findings highlight important differences between the way in which academics define bullying, and what this behaviour means to children and adolescents.

Defining peer-victimisation and bullying. How we define bullying has clear implications for the measurement of these behaviours (Volk et al., 2017). Despite over 40 years of research, the definition of bullying continues to be heavily debated. Olweus' (1993) definition suggests that factors such as an intent to harm, repetition, and an imbalance of power are important features that distinguish bullying from aggressive behaviour more generally. But questions remain as to how to define and measure these characteristics. Children and adolescents' definitions tend to focus more on the aggressive behaviour and the harm caused, rather than the intention to harm or power imbalance (Frisén et al., 2008; Vaillancourt et al., 2008). These

discrepancies in how researchers and children and adolescents define bullying could call into question the validity of research into bullying (Vaillancourt et al., 2008). Based on such challenges, it may be more appropriate to focus more on the broader construct of peer-victimisation. Peer-victimisation focuses on the experience of aggression within the peer group, but omits reference to intent, repetition, and an imbalance of power (Finkelhor et al., 2012).

There are, however, inconsistencies in the literature surrounding the use of the terms *peer-victimisation* and *bullying*. Some researchers claim to be studying experiences of being bullied but measure peer-victimisation as their measure lacks any reference to power imbalance or intentionality (e.g., Van Ryzin & Roeth, 2019). Furthermore, some use the terms bullying and victimisation to reflect different roles in the behaviour. For example, Casper, Meter and Card (2015) advocate using the term *bullying* to refer to the act of perpetrating an act of bullying, and the term *victimisation* to reflect being a target of such behaviour. Such complexities and inconsistencies in the literature have led Volk et al. (2017) to stress the importance of researchers making it explicit how they define peer-victimisation and bullying.

For the purposes of this thesis, peer-victimisation is defined as aggression which repeatedly occurs within the peer group (Hunter et al., 2007; Söderberg & Björkqvist, 2020), and bullying is used to reflect a specific form of peer-victimisation, where aggressive behaviour is experienced repeatedly over time, and where there is an intention to harm and an imbalance of power (Olweus 1993). This thesis will draw upon literature that has examined both peer-victimisation and bullying. From this point forward the term *peer-victimisation* will be used as an umbrella term to reflect both behaviours. In places the term *bullying* will be used to

reflect specific aspects of research, for example when discussing research on bullying roles and anti-bullying interventions, or when making specific points regarding bullying (related to power imbalance or intention to harm). **To avoid any confusion over whether the behaviour being referred to is bullying or peer-victimisation, in the current thesis the terms ‘being bullied’ or ‘been bullied’ are used to refer to those who report being a target of bullying, and ‘experiencing peer-victimisation’ is used to refer to those who report being a target of peer-victimisation.’**

As highlighted in the discussion on definitions of peer-victimisation and bullying, peer-victimisation is a complex social behaviour which occurs within adolescent peer groups (Olweus, 2001). Given the complexity of the behaviour, there have been calls for researchers to employ a socio-ecological approach to better understand the individual and environmental factors relating to peer-victimisation (Swearer & Espelage, 2004).

The socio-ecological approach to peer-victimisation

From a socio-ecological perspective, peer-victimisation is viewed as an ecological phenomenon (Espelage & Swearer, 2003; Swearer & Espelage, 2004), where behaviours are understood by the nature of the interaction between the individual and their environment. This approach stresses the important role of other people and the environment in the behaviour (Swearer & Espelage, 2004). The socio-ecological model (Bronfenbrenner, 1979), later the process-person-context-time model (PPCT, Bronfenbrenner, 1995) suggests that individual development occurs through a complex interaction between the individual and their environment. Bronfenbrenner (1979) conceptualised this ecological environment as a series of

interconnected systems termed the micro-, meso-, exo-, macro-, and chrono-systems. Bronfenbrenner (1979; 1995). Figure 1.1 presents the socio-ecological model, with examples of how this applies to peer-victimisation.

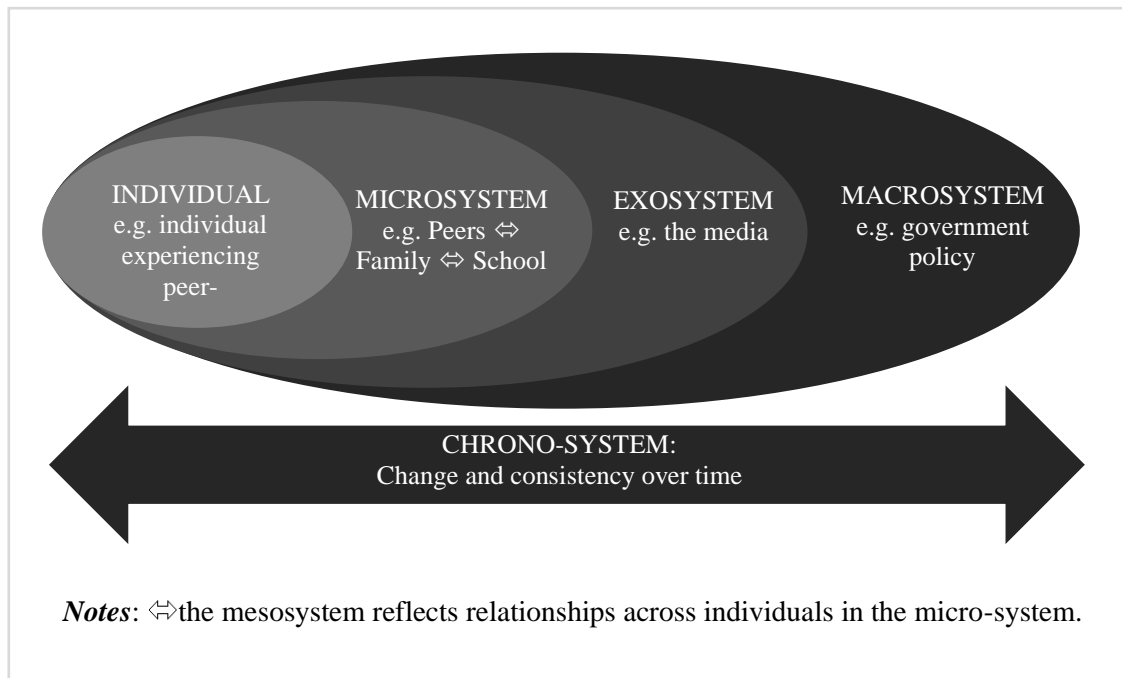


Figure 2.1 The socio-ecological framework

From this perspective, development and behaviour are a result of the interaction between the individual and various interconnected social systems (Bronfenbrenner & Ceci, 1994). These different factors and systems have been found to play an important role in peer-victimisation.

Individual factors. Understanding individual factors associated with involvement in peer-victimisation has attracted a wealth of research attention (Espelage, 2014). Such factors can include demographic variables such as age and gender differences, and differences based on intelligence, ability, and health status (Espelage, 2014). Large scale surveys of peer-victimisation have highlighted gender differences in experiences of these behaviours in school. For example, in their study

of 78,068 adolescents, Carlyle and Steinman (2007) identified that significantly more males compared to females (22.3% boys and 17.9% girls) reported experiencing peer-victimisation. They also found that experiences of peer-victimisation were higher in grades 6 to 8 (ages 11 to 14 years) and gradually reduced from grades 9 to 12 (ages 14 to 18 years). Meta-analyses on individual factors suggest that lesbian, gay, bisexual, transgender, and questioning (LGBTQ) youth compared to heterosexual youth are more likely to experience peer-victimisation in school (Toomey, & Russell, 2016). Meta-analyses have also reported weak associations with socio-economic status (Tippett & Wolke, 2014), and no association has been found between ethnicity and reports of peer-victimisation (Vitoroulis & Vaillancourt, 2015). Research identifying risk factors for experiencing peer-victimisation has tended to focus on the individuals involved in the behaviour rather than the social context in which it occurs (Swearer & Doll, 2001). The characteristics and vulnerabilities of individuals experiencing, and perpetrating, peer-victimisation, can be influenced by their environment (Menesini, 2019). From a socio-ecological approach, the various systems within an adolescents' environment capture different factors that play a role in experiences and correlates of peer-victimisation.

The microsystem. The microsystem captures experiences of activities, roles, and relationships in settings in an adolescent's immediate environment (Bronfenbrenner, 1979). For adolescents, these settings can include the home, school, out of school activities, and clubs. Bronfenbrenner (1979) stresses the importance of *experience* in his definition of the microsystem. He argued this is crucial for capturing the objective description of aspects of this system alongside the individual's interpretation of these settings. From this perspective, problematic

behaviours such as peer-victimisation are not solely reflective of individual characteristics but are a result of a complex interaction between the individual and their environment (Swearer & Doll, 2001). The most direct influences on peer-victimisation are from within the microsystem (Hong & Espelage, 2012) and include adolescents' interactions with others such as friends, peers, family, and teachers (Bronfenbrenner, 1979). Such interactions may place adolescents at risk of, or protect them from, peer-victimisation (Swearer & Espelage, 2004).

Peer-victimisation is a social process which results from the social dynamics within a peer-group (Lamb, Pepler, & Craig, 2009; Sercombe & Donnelly, 2013). These experiences can involve many pupils beyond only the *perpetrator* and the *victim*. Other members of the peer-group can reinforce the behaviour or intervene and be a source of support for those experiencing peer-victimisation (Sutton & Smith, 1999). Work specifically on participant roles in bullying (e.g., Olweus, 2001; Salmivalli, Lagerspetz, Björkqvist, Osterman, & Kaukiainen, 1996) highlights how all members of the peer group play a role in the behaviour. Such work has identified four additional broad categories of peers, including those who reinforce and those who assist the bully, those who defend the victim, and outsiders (those who may know that bullying is occurring but are not involved) (Salmivalli et al., 1996). Such roles are related to several peer-group factors, including popularity, peer-status, and group norms (Gini, 2006; Huitsing & Veenstra, 2012).

Within the peer-group, pupils can be accepted (liked by peers), rejected (disliked by peers), or neglected (neither liked nor disliked) (Coie, Dodge, & Coppotelli, 1982). The importance of popularity and peer group status become increasingly important in early adolescence (Pouwels, Lansu, & Cillessen, 2018) and

the need to be popular and accepted by the peer group can motivate peer-victimisation (Cillessen & Borch, 2006). Bullying roles are related to peer-group status (Huitsing & Veenstra, 2012). While evidence is inconsistent, it suggests that victims are frequently disliked and unpopular in the peer-group whereas bullies and their followers are typically popular (Pouwels et al., 2018; Sentse, Kretschmer, & Salmivalli, 2015).

Alongside peers, friends can also play an important role in peer-victimisation, by encouraging and reinforcing the behaviour or by protecting their friends (Besag, 2006; Hodges, Boivin, Vitaro, & Bukowski, 1999). Evidence suggests that high-quality friendships can protect adolescents from peer-victimisation, where those with high-quality friendships are less likely to experience these behaviours (Bollmer, Milich, Harris, & Maras, 2005; Fox & Boulton, 2006). However, there is also evidence that suggests that as victimisation continues, there is a reduction in the extent to which victims are liked by peers which can damage relationships with friends (Cantin, Brendgen, Dussault, & Vitaro, 2019). Such findings, however, may be dependent on the initial quality of the friendships (Cantin et al., 2019).

Within the microsystem, the relationship between popularity, peer-group status, and peer-victimisation highlights the role of the whole peer-group, and relationships across peers, in the behaviour (Witvliet et al., 2010). Use of the terms *bully* and *victim* can limit the way we think about bullying, suggesting the behaviour is a characteristic of the individual involved, rather than a problem emerging from dynamics within peer-group relationships (Lamb et al., 2009; Sercombe & Donnelly, 2013). Employing a socio-ecological approach and avoiding terms such as *bully* and *victim*, acknowledges the complex roles of others in the behaviour. Alongside peers,

other relationships within the microsystem can also play an important role in peer-victimisation.

Research on the role of the family and relationships with teachers has highlighted how each may be associated with peer-victimisation. In their systematic review of 154 studies, Nocentini, Fiorentini, Di Paola, and Menesini (2019) examined how perpetrating and being a target of peer-victimisation are predicted by three aspects of family characteristics. These characteristics included contextual family processes (e.g., parental difficulties and domestic violence), relational processes (e.g., parenting style and parent-child communication), and parental individual processes (e.g., parental attitudes). They found that factors reflective of a hostile family environment or hostile relationships, such as neglect and abuse, were predictive of children being more likely to perpetrate peer-victimisation. But family variables were inconsistent in predicting being a target of peer-victimisation. Their review highlights the importance of family factors in perpetrating peer-victimisation and the need to involve families in interventions.

Alongside the family, research to date has highlighted how a range of teacher characteristics are associated with peer-victimisation in schools. For example, teacher confidence in tackling peer-victimisation is related to the likelihood of intervention (Byers, Caltabiano, & Caltabiano, 2011), and hostile relationships involving high levels of conflict between pupils and teachers are associated with perpetrating peer-victimisation (Longobardi, Iotti, Jungert, & Settanni, 2018). Work on teacher intervention has also highlighted how teacher attitudes towards peer-victimisation, their perception of the school climate, and the type of behaviour witnessed may all predict the likelihood of teacher intervention (Yoon, Sulkowski, &

Bauman, 2016). Teachers can, therefore, play a crucial role in preventing peer-victimisation in school. Research examining individuals within an adolescent's microsystem has highlighted the important role they play in predicting and addressing peer-victimisation. Research has also highlighted how relationships across these individuals can also be important.

The mesosystem. The mesosystem captures the inter-relations across settings within an adolescent's microsystem, for example the relationship between school and home (Bronfenbrenner, 1979). As such, the mesosystem captures the relationships across systems in an individual's microsystem and can include both formal and informal communications and relationships (Bronfenbrenner, 1979). In a peer-victimisation context, examining ways in which school professionals can work together and communicate with adults in a child's home is important for managing challenging social behaviour (Sheridan, Warnes, & Dowd, 2004). Lester et al. (2017) conducted an evaluation of the friendly schools friendly families intervention (FSFF) which aimed to build relationships between schools and families, and to deliver training and resources on preventing peer-victimisation. Their evaluation was based on the delivery of the intervention in 20 primary schools, and surveys with 1,429 parents. The results highlighted how the intervention increased communication about bullying in the home. Relationships between the home and school are an important factor in protecting children from peer-victimisation (Lester et al., 2017). Interventions such as FSFF highlight the importance of the mesosystem, specifically good communication across institutions and individuals within an adolescent's microsystem.

The exosystem. Beyond the micro- and meso- systems is the exosystem, which Bronfenbrenner (1979) referred to as interactions across settings where the individual does not play an active role, but where activities within one of these settings may impact on adolescents' immediate environment. Such settings can include the local community and the media (Hong & Espelage, 2012). For example, Kuntsche et al. (2006) examined the relationship between watching television and different forms of peer-victimisation. They analysed data from 21,177 adolescents who had completed the health behaviour in school-aged children survey. Results of their analysis identified a relationship between television viewing and perpetrating verbal and indirect aggression across all countries involved. Specifically, more frequent television viewing was associated with more frequent perpetration of these forms of aggression. Hong and Espelage (2012) suggest that more frequent television viewing may relate to adolescents' greater identification with aggressive characters, which may relate to the perpetration of more aggressive behaviour.

The macrosystem. The macrosystem reflects the cultural or belief systems that underpin what Bronfenbrenner (1979) termed the lower order systems (the micro-, and exo-systems). Such cultural and belief systems can reflect legal guidance and government policy (Espelage, 2014) and social climate (Back, Polk, Keys, & McMahon, 2016). Such factors may reinforce the continuation of peer-victimisation, or be instrumental in intervention work (Espelage, 2014). Government legislation and guidance on school behavioural and anti-bullying policies are fundamental to setting out requirements for schools to prevent and intervene in peer-victimisation (Sacks & Salem, 2009). In England, it has been a legal requirement for schools to have an anti-bullying policy since 1998 (Woods & Wolke, 2003). Reviews of such

policies highlight the importance of the policies for tackling peer-victimisation in school but also highlight the inconsistent quality of policies currently used in schools (Smith et al., 2012). Furthermore, school climate has been found to play a role in influencing the prevalence of this peer-victimisation, adolescents coping styles, and the relationship between peer-victimisation and negative outcomes (Acosta et al., 2018; Eliot, Cornell, Gregory, & Fan, 2010; Turner, Reynolds, Lee, Subasic, Bromhead, 2014; Yang, Sharkey, Reed, Chen, & Dowdy, 2018). While adolescents may not have a direct role in aspects of these settings, evidence suggests such factors can play a role in their experiences of peer-victimisation.

The chronosystem. The socio-ecological model also suggests that changes in relationships, settings (e.g., school), and roles *over time* can affect behaviour and development (Bronfenbrenner, 1979). The chronosystem reflects the level of change or consistency experienced by the individual over their lifetime (Espelage, 2014), and such changes can interact with systems within the socio-ecology to affect behaviour and relationships (Bronfenbrenner, 1979). For example, for children and adolescents, the transition from primary to secondary school marks a significant transition for their social networks (Pellegrini & Bartini, 2000). Research has examined the relationship between peer-victimisation in primary school and peer-victimisation in secondary school and found no relationship between the two (Schäfer, Korn, Brodbeck, Wolke, & Schulz, 2005).

Employing a socio-ecological approach: Evidence reviewed above has demonstrated how the different systems within an adolescent's social environment play a role in peer-victimisation. Much of this research has tended to focus on only one factor from within one system (e.g., the role of peers) and as a result may

overestimate their importance. More recent research has attempted to employ a socio-ecological approach to examine the role of multiple factors and systems in peer-victimisation. For example, Hong, Kim, and Hunter (2019) examined family and peer-group predictors of bully status (pure bullies, pure-victims, bully-victims and uninvolved peers) in a sample of 2,284 Korean children and adolescents. They found that family factors were not associated with bully-role status. Regarding peer relationships, the victim only group were more likely than uninvolved peers to have positive peer relationships, and bullies and bully victims were more likely to have delinquent friends. Finally, regarding school factors, victims only and bullies only were less likely to be involved in school activities, and bullies and bully victims reported being less likely to follow school rules.

As shown through the approach taken by Hong et al. (2019), the socio-ecological model provides a clear and useful framework for conceptualising and examining the different social processes and relationships that can impact on experiences of peer-victimisation (Hong & Espelage, 2012). Past research has tended to focus on a specific individual aspect of the social ecology, for example peer-group status (Huitsing & Veenstra, 2012). From a statistical perspective, analysing the impact of different factors from different ecologies within the same study enables us to capture both the unique and shared variance associated with these different variables (Little, 2013). When studied in isolation, single variables may be related to a particular outcome (e.g., mental health), but when analysed alongside other variables this effect may reduce. As a result, analysing multiple variables at the same time enables us to identify which factor(s) may be most strongly associated with our outcome variable of interest, for example, poor mental health.

The relationship between peer-victimisation and poor mental health

The prevalence and impact of peer-victimisation in adolescence has led to suggestions that this behaviour is a significant public health concern (Brendgen & Poulin, 2018; Schoeler, Duncan, Cecil, Ploubidis, & Pingault, 2018). Hawker and Boulton's (2000) meta-analysis of cross-sectional studies highlighted relationships between peer-victimisation and depression, loneliness, anxiety and self-esteem. Since then numerous meta-analyses have been conducted demonstrating an association between peer-victimisation and diverse negative outcomes, in both the short and long term. As shown in Table 2.1, experiencing peer-victimisation is related to a greater risk of: headaches (Gini, Pozzoli, Lenzi, & Vieno, 2014), poorer academic achievement (Nakamoto & Schwartz, 2010), sleeping problems (van Geel, Goermans, & Vedder, 2016), suicidal ideation and suicidal behaviours (Holt et al., 2015), and weapon carrying (Valdebenito et al., 2017). As such, evidence from these meta-analyses highlight the profound and varied effect peer-victimisation can have on a range of outcomes.

Table 2.1 Meta-analyses synthesising the relationship between bullying, peer-victimisation and negative outcomes.

Study	N studies	Total N	Variables of interest	Key findings
Fisher, Gardella, & Teurbe-Tolon (2016)	55	257,678	<i>Predictor(s)</i> : Cyber-victimisation. <i>Outcome(s)</i> : Internalising problems (depression, anxiety, & anger) and externalising symptoms (aggression, substance use, self-harm, risky sexual behaviour).	<ul style="list-style-type: none"> • Cyber-victimisation significantly associated with general internalising symptoms ($r=.28$), suicidal ideation ($r=.32$), depression ($r=.32$), anxiety ($r=.31$), and self-esteem ($r=.21$). • Cyber-victimisation was also associated with general externalising symptoms ($r=.23$), self-harm ($r=.34$), substance use ($r=.18$), and social problems ($r=.14$).
Gardella, Fisher, & Teurbe-Tolon (2017)	12	26,906	<i>Predictor(s)</i> : Cyber-victimisation. <i>Outcome(s)</i> : School attendance and school achievement problems.	<ul style="list-style-type: none"> • Cyber-victimisation was significantly associated with both school achievement ($r=.09$) and school attendance problems ($r=.19$).
Gini & Pozzoli, (2013).	30	219,560	<i>Predictor(s)</i> : Being bullied. <i>Outcome(s)</i> : Psychosomatic symptoms.	<ul style="list-style-type: none"> • Longitudinal studies ($N=6$) found being bullied was significantly associated with psychosomatic problems ($OR=2.39$). • Cross-sectional studies ($N=6$) found being bullied was significantly associated with psychosomatic problems ($OR=2.17$).
Gini, Pozzoli, Lenzi, Vieno (2014)	20	173,775	<i>Predictor(s)</i> : Being bullied. <i>Outcome(s)</i> : Headaches.	<ul style="list-style-type: none"> • Young people who had been bullied were twice as likely to suffer from headaches compared to those who had not been bullied (longitudinal studies $OR=2.10$, cross-sectional studies $OR=2.00$).

Study	N studies	Total N	Variables of interest	Key findings
Hawker & Boulton (2000)	24	6,772	<i>Predictor(s):</i> Peer-victimisation/being bullied. <i>Outcome(s):</i> Depression, self-esteem, loneliness, anxiety.	<ul style="list-style-type: none"> Being bullied was significantly associated with depression ($r_{s1}=.29$, $r_{s2}=.45$), loneliness ($r_{s1}=.25$, $r_{s2}=.32$), global self-esteem ($r_{s1}=.21$, $r_{s2}=.39$), social self-concept ($r_{s1}=.23$, $r_{s2}=.35$), social anxiety ($r_{s1}=.14$, $r_{s2}=.25$), generalized anxiety ($r_{s1}=.21$, $r_{s2}=.25$), anxiety overall ($r_{s1}=.19$, $r_{s2}=.25$).
Holt, et al. (2015)	47	<i>Mean sample size=11,216</i>	<i>Predictor(s):</i> Bullying status. <i>Outcome(s):</i> Suicidal ideation and suicidal behaviour.	<ul style="list-style-type: none"> Suicidal ideation was significantly associated with experiencing bullying (OR=2.34), perpetrating bullying (OR=2.12), and being a bully-victim (OR=3.81). Suicidal behaviour was significantly associated with experiencing bullying (OR=2.94), perpetrating bullying (OR=2.62), and being a bully-victim (OR=2.39).
Nakamoto & Schwartz (2010)	33	29,552	<i>Predictor(s):</i> Peer-victimisation. <i>Outcome(s):</i> Academic achievement.	<ul style="list-style-type: none"> Peer-victimisation was significantly associated with academic achievement (random effects model, $r=-.12$, fixed effects model, $r=-.10$).
Lie, Rø, & Bang (2018)	22	15,356	<i>Predictor(s):</i> Being bullied and teasing <i>Outcome (s):</i> Eating disorders	<ul style="list-style-type: none"> Experiences of being bullied and teasing was significantly associated with eating disorders (OR=2.22). Appearance related teasing was associated with eating disorders (OR=2.93).

Study	N studies	Total N	Variables of interest	Key findings
Tsaousis (2016)	81 & 40	77,667 & 30,767	<i>Predictor(s)</i> : Peer-victimisation, perpetrating peer-aggression. <i>Outcome (s)</i> : Self-esteem.	<ul style="list-style-type: none"> • Peer-victimisation was significantly and negatively associated with self-esteem ($r=-.027$). • Perpetrating peer-aggression was significantly and negatively associated with self-esteem ($r=-.07$).
Reijntjes et al. (2010)	18	18,978	<i>Predictor(s)</i> : Peer-victimisation <i>Outcome(s)</i> : Internalising symptoms.	<ul style="list-style-type: none"> • Peer-victimisation was significantly associated with increases in internalizing symptoms over time ($r=.18$). • Internalising symptoms was significantly associated with increases in peer-victimisation over time ($r=.08$).
Reijntjes et al. (2011)	14	7,821	<i>Predictor(s)</i> : Peer-victimisation. <i>Outcome (s)</i> : Externalizing problems.	<ul style="list-style-type: none"> • Peer-victimisation was significantly associated with increases in externalizing symptoms over time ($r=.14$). • Externalising symptoms was significantly associated with increases in peer-victimisation over time ($r=.13$).
Valdebenito et al. (2017)	35	588,974	<i>Predictor(s)</i> : Bullying status. <i>Outcome (s)</i> : Weapon carrying.	<ul style="list-style-type: none"> • Weapon carrying was significantly associated with being a victim (OR=1.58), perpetrator (OR=3.24), and being a bully-victim (OR=5.66).

Study	N studies	Total N	Variables of interest	Key findings
van Geel et al. (2016)	21	363,539	<i>Predictor(s):</i> Peer-victimisation. <i>Outcome (s):</i> Sleep problems.	<ul style="list-style-type: none"> • Sleep problems were significantly associated with peer-victimisation (OR=2.21).

Notes: Effect size rule of thumb for interpretation (Cohen, 1988, Chen, Cohen, & Chen, 2010) – For Hedges g and Cohen’s d small effect = 0.2, medium effect =0.5, large effect =0.8. For Odds Ratios (OR); small effect =1.68, medium effect =3.47, large effect=6.71. For Pearson’s r, small effect = 0.1 to 0.3, medium effect =0.3 to 0.5, large effect =0.5 to 1.0.

As highlighted in Table 2.1, peer-victimisation is related to a range of negative outcomes. Focusing specifically on poor mental health, a wealth of evidence supports the cross-sectional association between peer-victimisation and such outcomes (e.g., Gini & Pozzoli, 2013; Hawker & Boulton, 2000). These associations are also reported in retrospective studies with adults reporting on their past experiences of peer-victimisation at school (Schäfer et al., 2004). Such evidence suggests that the relationship between peer-victimisation in school and poor mental health can carry on into adulthood. While this evidence suggests an association between experiencing peer-victimisation and poor mental health, caution should be taken when interpreting the findings of such studies. Such findings may also reflect a vicious circle involving peer-victimisation and poor mental health (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Reijntjes et al., 2010). Experiencing peer-victimisation may impact negatively on mental health, but equally, those with poor mental health may also struggle with social relationships which in turn may make them vulnerable targets for peer-victimisation (Kaltiala-Heino, Fröjd, & Marttunen, 2010). This highlights the importance of longitudinal investigations into this relationship. Meta-analyses of the longitudinal literature have found support for this vicious circle between peer-victimisation and poor mental health (e.g., Reijntjes et al., 2011; Reijntjes et al., 2010) and highlight that poor mental health can be both an antecedent and outcome of peer-victimisation.

The relationship between different forms of peer-victimisation and poor mental health. As the relationship between peer-victimisation and poor mental health is well established, research has also examined whether there are any differences in the relationship based on the type of aggression experienced. To date,

this evidence has yielded inconsistent findings. In the literature the different forms of aggression are typically referred to as direct or indirect bullying, or traditional bullying and cyberbullying. Therefore, in the following section the term *bullying* is used to describe the nature of the aggression experienced, e.g. cyberbullying, and not the role in the behaviour. The following discussion will discuss research examining the relationship between experiencing these different forms of aggression (as a target) and mental health.

In their survey of 661 Italian adolescents, Baldry (2004) found that experiencing indirect and direct bullying were both independently associated with somatic complaints, and with symptoms of anxiety and depression. However, only experiences of being indirect bullying (but *not* direct bullying) were associated with withdrawn behaviours. More recently, Brunstein Klomek et al. (2019) examined the relationship between being verbally, physically, and indirectly bullied and depression and suicidal ideation and behaviours. Through their longitudinal study of 2,933 adolescents from 10 different European countries, they found a bidirectional relationship between depressive symptomatology and experiencing verbal, indirect, and physical bullying (cyberbullying was not measured). All forms of aggression were associated with depressive symptomatology 12 months later. Furthermore, depressive symptomatology was associated with experiencing verbal and indirect (but not physical) bullying after 12 months. Regarding suicidal ideation, only experiencing physical bullying, but not verbal or indirect, was associated with both suicidal ideation and suicidal behaviour after 12 months.

Research has also examined differences in the relationship between experiences of cyberbullying and traditional bullying and poor mental health. For

example, Bannink, Broeren, van de Looij–Jansen, de Waart, and Raat’s (2014) two-year longitudinal study of 3,181 secondary school pupils found that experiencing both traditional and cyberbullying were associated with changes in mental health over time, but only for girls. Furthermore, only traditional bullying, not cyberbullying, was associated with suicide ideation. Similarly, Hase, Goldberg, Smith, Stuck, and Campain (2015) in their study of 1,225 adolescents compared the relationship between experiencing cyberbullying and traditional bullying and psychological symptoms. They found an overlap in experiences of both forms of bullying, where 93% of those who reported being cyberbullied also reported experiencing traditional bullying. When modelled together, only traditional bullying, and not cyberbullying, was associated with psychological symptoms. Both Bannink et al.’s (2014) and Hase et al.’s (2015) studies suggest that bullying, but not cyberbullying, is associated with poor mental health. However, in their survey of 399 Canadian adolescents, Bonanno and Hymel (2013) examined the relationship between traditional bullying, cyberbullying, and depressive symptomatology, and suicide ideation. They found that both experiencing cyberbullying and verbal bullying, but not physical or indirect bullying, were significantly associated with depressive symptomatology, and suicide ideation, suggesting a more complex pattern of associations.

Research is starting to examine how different types of peer-victimisation may relate differently to poor mental health. It is difficult to synthesise the findings of this research due to the different forms of peer victimisation and outcome variables measured. While this evidence suggests there may be different patterns of

associations between various forms of aggression and different outcome measures, more research is needed to investigate these relationships further.

Anti-Bullying Interventions

Evidence to date highlights both the prevalence and impact of peer-victimisation (e.g., Przybylski & Bowes, 2017; Reijntjes et al., 2010). As a result of this evidence, a range of initiatives have been developed to try and reduce bullying. From a socio-ecological perspective, these programmes can focus on specific individuals (e.g., teachers) or on groups of individuals (e.g., pupils and their parents/guardians) within the micro-system. Several meta-analyses have been conducted on the effectiveness of intervention programs to reduce bullying, the findings of which are summarised in Table 2.2.

Individual focused interventions. Anti-bullying interventions can focus on working with individuals within the school, or from the broader community, such as pupils, teachers, and parents/ guardians. For example, such interventions can include work with pupils around social and emotional skill development (Durlak et al., 2011), and empowering bystanders to tackle bullying they hear and see (Polanin et al., 2012). Interventions can also target teachers or parents/guardians through awareness-raising work (e.g., fliers and guidebooks), and training opportunities on how to tackle bullying and support those being bullied (van Verseveld et al., 2019; Huang et al., 2019). Meta-analyses of the effectiveness of such programmes are summarised in Table 2.2. Evidence suggests such programmes may lead to changes in skills, such as increased bystander behaviours (Polanin et al., 2012), and increases in social and emotional skills (Durlak et al., 2011). However, overall, programmes focusing on individuals lead to small-to-moderate reductions in bullying behaviours.

Whole-school interventions. Alongside interventions that target individuals, interventions have also been designed that employ a broader, whole school, approach. Such interventions may involve individual pupils, alongside teachers, policy and procedural changes, and parents/ guardians. The inclusion of these different components varies across programmes, but typically such interventions involve more than one group of individuals and include multiple components. For example, the Olweus Bullying Prevention, and KiVA include classroom activities, work with individual pupils, alongside work with the whole school community (e.g., policy guidance) (Gaffney et al., 2019). Meta-analyses have also examined the effectiveness of such programmes (see Table 2.2), and typically such programmes have been found to lead to small-to-medium reductions in rates of perpetrating bullying, and in rates of being bullied. However, the meta-analyses have identified particular aspects of programmes that may be more effective, for example, Yeager et al. (2015) found that anti-bullying interventions may be more effective in younger pupils than older, and Ttofi and Farrington (2011) suggested that more intensive programmes may be more effective.

Table 2.2 Summary of meta-analyses of anti-bullying interventions/ programs.

Study	N Studies	Total N	Intervention	Key findings
Durlak, Weissberg, Dymnicki, Taylor, & Schellinger (2011)	213	270,034 pupils	<i>Programme:</i> Social & Emotional Learning (SEL). <i>Targeting:</i> Pupils.	<ul style="list-style-type: none"> The interventions were significantly associated with; SEL skills ($g=0.26$), attitudes ($g=0.11$), positive social behaviour ($g=0.17$), conduct problems ($g=0.14$), emotional distress ($g=0.15$), and academic performance ($g=0.32$).
Ferguson, Miguel, Kilburn, & Sanchez (2007)	42	34,713 pupils	<i>Programme:</i> School based intervention programmes. <i>Targeting:</i> Pupils.	<ul style="list-style-type: none"> The included interventions led to a negligible reduction in bullying others ($r=.12$). Authors suggest such programmes are not effective in reducing bullying behaviours.
Gaffney, Farrington, Espelage & Ttofi (2019)	24	36,708 pupils	<i>Programme:</i> Interventions focused on tackling cyberbullying. <i>Targeting:</i> Whole school.	<ul style="list-style-type: none"> The included interventions reduced cyberbullying perpetration by 9-15% and cyberbullying victimisation by 14-15%.
Gaffney, Farrington, & Ttofi, (2019)	100	Not provided	<i>Programme:</i> Focus on four anti-bullying programmes: KiVa, NoTrap!, OBPP, ViSC. <i>Targeting:</i> Whole school (pupils, teachers, parents).	<ul style="list-style-type: none"> Findings suggest that these anti-bullying programs significantly reduced bullying perpetration by 19-20% (OR=1.32) and victimisation by 15-16% (OR=1.25). OBPP reduced perpetration by 26%. NoTrap! Significantly reduced victimisation by 37%. KiVA significantly reduced perpetration by 9% and victimisation by 11%. No significant effects for ViSC but increased bullying and victimisation by 4%.

Study	N Studies	Total N	Intervention	Key findings
Huang, Espelage, Polanin, & Hong, (2019)	22	212,211 pupils	Newsletters, booklets, guidebooks (13 studies), parent meetings (9 studies), events such as workshops and training (7 studies). <i>Targeting:</i> Parents.	<ul style="list-style-type: none"> • They found a small significant effect for reducing bullying perpetration ($d=0.18$) and a small significant effect for reducing bullying victimisation ($d=0.16$). • The type of parental intervention (e.g., printed material or workshop) did not affect the effectiveness of the intervention.
Jiménez-Barbero, Ruiz-Hernández, Llor-Zaragoza, Pérez-García, Llor-Esteban (2016)	14	30,934 pupils	<i>Programme:</i> Varied school based anti-bullying programmes. <i>Targeting:</i> Pupils	<ul style="list-style-type: none"> • Interventions lasting less than one year had greater effect for reducing bullying others ($d_{+}=-.24$), compared to those that last more than one year ($d_{+}=-.10$). Interventions lasting less than one year resulted in greater reduction in being bullied ($d_{+}=-.33$) compared to those lasting more than one year ($d_{+}=-.08$). • The interventions were more effective in reducing bullying others in younger pupils (<10, $d_{+}=-.17$), compared to older pupils (>10, $d_{+}=-.08$) and in reducing being bullied in older pupils (>10, $d_{+}=-.10$), compared to younger pupils (<10, $d_{+}=-.07$).
Lee, Kim, & Kim (2015)	13	19,619 pupils.	<i>Programme:</i> Social skill training, training in emotional control, peer-counselling, and curriculum-based programmes. <i>Targeting:</i> Whole school approach.	<ul style="list-style-type: none"> • School based programmes had a small, but significant effect on reports of victimisation ($d=0.15$). • Programmes involving training around emotional control resulted in larger effects for reducing victimisation.

Study	N Studies	Total N	Intervention	Key findings
Merrell, Gueldner, Ross, & Isava (2008)	16	15,386 pupils	<i>Programme:</i> Various school-based interventions. <i>Targeting:</i> Pupils.	<ul style="list-style-type: none"> Found a small reduction in reports of being bullied (ES=.27) and a very small effect for bullying others (ES=.04)
Polanin, Espelage, & Pigott (2012)	12	12,874 pupils	<i>Programme:</i> Bystander intervention programmes: focused on increasing bystander behaviours. <i>Targeting:</i> Pupils	<ul style="list-style-type: none"> Increased bystander intervention behaviours by 20% of one standard deviation more, compared to those who did not complete the training. No impact on empathy.
Ttofi & Farrington (2011)	89	Not provided	<i>Programme:</i> Variety of school-based interventions. <i>Targeting:</i> Whole school approach: pupils, teachers, parents.	<ul style="list-style-type: none"> On average bullying behaviour decreased by 20-23%. On average victimisation decreased by 17-20%. More intensive programmes were more effective.
Van Verseveld, Fukkink, Fekkes, Oostdam, (2019)	13	948 teachers & 138,311 pupils	<i>Programme:</i> Interventions coded as individual level interventions, classroom interventions (student lessons), school level (teacher training), and other. <i>Targeting:</i> Teachers	<ul style="list-style-type: none"> A moderate effect for increasing determinants of teacher intervention (e.g., self-efficacy) was found ($g=0.53$). A small association was found between teacher interventions and teacher willingness to intervene ($g=0.12$).
Yeager, Fong, Lee, & Espelage (2015)	19	Not provided	<i>Programme:</i> Variety of school-based interventions (e.g., KiVA, lessons). <i>Targeting:</i> Pupils and teachers.	<ul style="list-style-type: none"> Anti-bullying interventions are more effective for younger adolescents. The effectiveness of programmes reduces at around grade 8 (year 9, age 13-14 years).

Notes: Effect size rule of thumb for interpretation (Cohen, 1988, Chen et al, 2010) – For Hedges g and Cohen’s d small effect = 0.2, medium effect =0.5. large effect =0.8. For Odds Ratios (OR); small effect =1.68, medium effect =3.47, large effect=6.71. For Pearson’s r, small effect = 0.1 to 0.3, medium effect =0.3 to 0.5, large effect =0.5 to 1.0.

Meta-analyses of current anti-bullying programmes highlight the number and range of programmes currently being used to try and tackle bullying in schools. Such interventions vary in terms of who is involved in the programme, the time and resources required, and how they are evaluated. Although more recent meta-analyses have attempted to compare intervention programmes (e.g., Gaffney et al., 2019), many of these meta-analyses lack detail on the nature of the interventions included in the analysis. It is therefore impossible to identify what aspect of interventions may be particularly beneficial in tackling bullying. Although work in anti-bullying programmes has been undertaken for many years, current evidence suggests that such programmes only lead to small-to-moderate reductions in bullying in school.

The relationship between peer-victimisation and poor mental health is well-established in the research literature. Meta-analyses highlight the association between peer-victimisation and poor mental health in both the short and long term, see Table 2.1. Despite the development of a wealth of interventions, meta-analyses of evaluations of such programmes suggest only modest changes in bullying behaviours, see Table 2.2. The combination of the prevalence of peer-victimisation and the lack of effective interventions leaves adolescents vulnerable to the effects of this behaviour. As not all adolescents who experience peer-victimisation develop poor mental health (Newman et al., 2005), there have been calls for research to now focus more on the mechanisms through which experiencing peer-victimisation leads to the development of poor mental health (Gini & Pozzoli, 2009). The transactional model of stress (Lazarus & Folkman, 1984), which focuses on the interaction between individuals' biological and cognitive vulnerabilities to stress alongside environmental factors that influence responses to stress, offers a possible framework

for better understanding the relationship between peer-victimisation and poor mental health.

CHAPTER 3 PEER-VICTIMISATION AS A STRESSFUL EXPERIENCE

Peer-victimisation can be defined as a social stressor (Björkqvist, 2001) and an experience which is a source of worry and concern for many adolescents (Vanaelst, De Vriendt, Huybrechts, Rinaldi, & De Henauw, 2012). Psycho-biological studies have highlighted the biological impact of peer-victimisation. For example, in their study of 545 elementary (primary) school pupils, Östberg, Låftman, Modin, and Lindfors (2018) found that experiencing peer-victimisation was significantly associated with functioning of the hypothalamic-pituitary-adrenocortical (HPA) axis (responsible for the secretion of cortisol). As such peer-victimisation can be defined as a chronic stressor which can affect the functions of the stress system. Conceptualising peer-victimisation as a social stressor (Björkqvist, 2001) enables us to apply models of stress to understand better why peer-victimisation may relate to poor mental health outcomes.

In the following chapter the applicability of the transactional model of stress (TMS) (Lazarus & Folkman, 1984) will be discussed. In the first part of the chapter, a brief overview of the TMS will be provided, alongside a discussion of the value of this model over other theories of adaptations to stress. The parallels between the TMS and the socio-ecological model (Bronfenbrenner, 1979) are also highlighted. The second half of this chapter will focus on the role of cognitive appraisals in the relationship between stressful experiences and poor mental health. This chapter will end by outlining the aim of this thesis, and specifically study one.

Defining stress

Stress as a Response.

The notion of stress has been conceptualised in several different ways. Early theories of stress focus on a more system-response approach, whereby stress is conceptualised as the way in which the human body reacts to the pressures placed upon it (Selye, 1974). From this perspective, stress is viewed wholly as the physiological reaction of the human body to external demands placed upon it. This response system, the general adaptation syndrome (GAS) (Selye, 1974), outlines a series of phases in individuals' reactions to stress. The first phase following an event is the initial shock phase, where individuals experience a biological response (Rice, 2012). Following this, individuals go through the resistance phase, where they may adapt to the event. If they are unable to do so, they go into the third and final phase, exhaustion, where the stressor harms the human body (Krohne, 2002; Rice, 2012). While influential in developing stress research, such system response models define stress purely as an external event and focus predominantly on the individual's biological reactions (Krohne, 2002). Given the focus purely on biological responses, individual differences in responses to similar experiences cannot be explained (Krohne, 2002).

Stress as a Transaction.

The TMS (Lazarus, 1999; Lazarus & Folkman, 1984) highlights the importance of the interaction between the individual and their environment in determining outcomes to an event, for example, emotional reactions or poor mental health (Lazarus, 1999; Lazarus & Folkman, 1984). Within a transactional framework, stress is viewed as an event which is appraised (evaluated) by an

individual as significant to their wellbeing. To have a negative impact on the individual, the experience is beyond the coping resources available to the individual (Lazarus & Folkman, 1984). The TMS highlights individual characteristics, characteristics of the environment, and the interaction between the two as important in adapting to stress (Lazarus & Folkman, 1984). Following an event (such as peer-victimisation), individuals go through a process of cognitive appraisal which in turn influence coping responses, which finally determines outcomes to the event (Lazarus & Folkman, 1984), see Figure 3.1 .

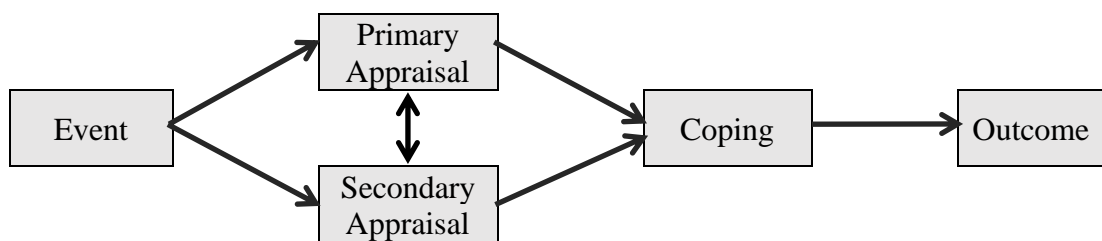


Figure 3.1 *The transactional model of stress (Lazarus & Folkman, 1984).*

Cognitive Appraisals. An individual’s interpretation of an event is dependent upon their appraisals of that situation. Lazarus and Folkman (1984) outline how early definitions of cognitive appraisals focus primarily on appraisals being an automatic cognitive activity. The aim of this activity is to understand the event, which in turn informs the subsequent emotional reaction. In the TMS, however, appraisals are defined as more than the immediate response to an event, to focus more on a complex evaluative process (Lazarus, 1999; Lazarus & Folkman, 1984). Specifically, cognitive appraisals involve an evaluation of an event for determining the personal significance of the situation (primary appraisal), and an evaluation of whether individuals have the resources available to manage the situation (secondary

appraisal) (Lazarus, 1999; Sillars & Davis, 2018). Although termed *primary* and *secondary* appraisals, the appraisal process occurs in parallel and appraisals can be mutually influential (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986).

The distinction between cognitive appraisals and cognitive attributions. The terms *cognitive attributions* and *cognitive appraisals* are often used interchangeably in the research literature, yet they are distinct constructs (Smith, Haynes, Lazarus, & Pope, 1993). Attribution theory offers one explanation for how individuals process social information, through cognitive attributions, to explain events they experience (Graham & Juvonen, 2001). Attributions reflect an individual's knowledge about the event (Weiner, 1986). For example, causal attributions focus on understanding the reasons for an event or experience (Graham & Juvonen, 2001). Such attributions aim to address why an event has occurred and consist of several causal dimensions, namely; locus, stability, and controllability (Graham & Juvonen 2001). Locus reflects whether the cause of an event is perceived as being internal or external to the individual (Weiner, 1986). Weiner (1979) provides examples of such internal and external causes. With reference to exam failure, internal attributions may reflect an individual's perceptions of their ability or mood, in contrast, external attributions can reflect the difficulty of the topic, or a perception of being unlucky. Stability, however, reflects whether the event is stable or unstable (Weiner, 1979). Finally, controllability captures whether they perceive their experiences as being controllable or uncontrollable (Weiner, 1979). Each of these causal attributions is argued to relate to different outcomes (Graham & Juvonen, 2001). Cognitive appraisals also reflect the knowledge for the event but alongside an evaluation of the personal significance

of this meaning regarding the specific event (Lazarus, 1990; Lazarus & Folkman, 1984). This distinction led Smith et al. (1993) to label attributions cold cognitions, which focus primarily on a general understanding, and appraisals the hot cognitions which reflect knowledge and understanding alongside an evaluation of the personal significance of the specific event.

The distinction between cognitive attributions and appraisals, and the differing relationships with mental health and emotional outcomes, has been tested in several studies. For example, Smith et al. (1993) conducted two studies with undergraduate students to test the differing relationships between cognitive attributions, cognitive appraisals, and emotions. In their first study, 136 undergraduate students were asked to complete a survey where they recounted an incident. Participants were split into eight conditions based on whether they were asked to report on one of four negative events, or one of four positive events. Participants were then asked to complete measures of attributions, appraisals, and emotions. In study 2, Smith et al. (1993) conducted a vignette study with 120 undergraduate students. Participants were asked to read four vignettes which varied on the attribution captured, and then also complete measures of attribution, appraisal, and emotion. Across both studies, they found that appraisals were the stronger predictor of emotional outcome. In study 1, attributions were independently associated with emotions, but these associations were reduced when appraisals were included in the analysis. In further analyses, appraisals significantly mediated the relationship between cognitive attributions and emotion, suggesting that attributions are associated with emotion because of cognitive appraisals.

The dominant role of cognitive appraisals over cognitive attributions has also been found in a study of 72 adolescents with cancer, where primary, but not secondary appraisals or cognitive attributions, were significantly associated with depressive symptomatology (Burgess & Haaga, 1998). Similar relationships have also been found when predicting coping style. In their study of 316 schoolteachers, Chwalisz, Altmaier, and Russell (1992) found that causal attributions were not significantly directly associated with coping style, but were mediated by self-efficacy. Cognitive attributions are important as they provide the knowledge and understanding for why an event occurred, but alone they are insufficient to lead to an emotional outcome (Lazarus & Folkman, 1984). It is the added dimension of the evaluation of the significance of the specific event to an individual's wellbeing (cognitive appraisal) which predicts both coping strategies and outcomes following an event (Smith et al., 1993).

Coping. Both primary and secondary appraisals have been found to play an important role in adolescents' adaptation to a range of stressors, both directly and indirectly through coping. Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p.141). From this perspective, coping is viewed as a context-dependent process rather than an individual trait (Lazarus & Folkman, 1984). When coping with an event the aim is to manage the source of stress (the event) and any emotional response to that event (Compas, Connor-Smith, Saltzman, Harding Thomsen, & Wadsworth, 2001). Coping strategies are often categorised into three broad dimensions; problem-focused, emotion-focused, and, disengagement-avoidant

coping. Emotion focused coping strategies focus on managing the emotional response to a stressful event (Folkman & Lazarus, 1988), and more problem-focused strategies focus more on acting on the stressful event (Compas, 1987). In comparison, disengaged-avoidant coping focuses more on avoiding the stressful event, moving attention away using cognitive or behavioural avoidance strategies (Glanz & Schwartz, 2008). Evidence suggests that adolescents use a variety of problem and emotion-focused strategies (Compas, Malcarne, & Fondacaro, 1988).

Focusing specifically on coping with peer-victimisation, evidence suggests that children and adolescents use a range of coping strategies to manage such experiences. In their survey of 459 children and adolescents aged 9 to 14, years, Hunter and Boyle (2004) identified four coping styles that were salient for those experiencing peer-victimisation; problem-focused, social support seeking, wishful thinking, and avoidance. Such coping styles have been supported in additional studies. Davis, Randall, Ambrose, and Orand (2014) analysed 1,094 comments from a blog post on cyberbullying and identified two broad categories of coping; behavioural and cognitive coping which they likened to emotion and problem focused strategies. They found that behavioural strategies were more frequently reported than cognitive strategies and included strategies such as support seeking, ignoring the behaviour, or finding creative outlets for their experiences. More cognitive focused strategies included taking the perspective of the person doing the bullying, and self-talk (Davis et al., 2014). Furthermore, in their systematic review of 19 studies focusing specifically on coping with experiences of being cyberbullied, Raskauskas and Huynh (2015) found the more commonly used strategies included seeking social support, and avoidance coping. Evidence to date suggests that

adolescents use a range of coping styles when managing their experiences of peer-victimisation (Hunter & Boyle, 2004; Raskauskas & Huynh, 2015). Such coping strategies are associated with cognitive appraisals (Hunter & Boyle, 2004), and with the outcome to the event (Raskauskas & Huynh, 2015).

The TMS provides a useful framework for understanding individual differences to similar events that cannot be explained by more system-response models (Krohne, 2002). Evidence also suggests the TMS may be a more effective model for understanding individual differences in emotional outcomes to an event in comparison to other social-information processing theories, such as attribution theory (Smith et al., 1993). As not all adolescents develop negative outcomes as a result of experiencing peer-victimisation (Newman et al., 2005), the TMS outlines the process through which peer-victimisation may predict negative outcomes. Viewing the TMS from a socio-ecological perspective (Bronfenbrenner, 1979) enables us to examine both the process through which, and the social context within which, peer-victimisation is associated with negative outcomes.

The Transactional Model of Stress & The Socio-Ecological Approach.

The TMS highlights the importance of the interaction between the individual and their environment, as such the TMS draws upon the principles of interactional psychology (Pervin & Lewis, 1978). The TMS goes beyond simply explaining how individuals react to events in their environment, to instead focus on the transaction or bidirectional relationship between individuals and aspects of their environment (Lazarus & Folkman, 1984). In later writings, Lazarus (1999) developed the TMS to focus more on the notion of relational meaning rather than transaction, to reflect the mutually influential nature of the individual and aspects of their environment.

Parallels can be drawn here with the socio-ecological view of human development (Bronfenbrenner, 1979). Rather than focusing on transaction, Bronfenbrenner (1979) stressed the importance of mutual accommodation between the individual and their environment. This highlights the way individual development can be influenced by characteristics of their environment. Lazarus and Folkman (1984) suggest various individual and situational factors can influence the TMS, particularly the appraisal process.

Individual factors. Individual factors that can affect the TMS can be drawn from different levels of an individual's social environment. Such factors can include the resources an individual has available to them, for example, their intelligence, wealth, and their social network, alongside their personal goals and motivations (Lazarus 1999). For example, and focusing specifically on personal goals, through the appraisal process individuals evaluate the significance and personal meaning of an event based on their personal goals and beliefs (Lazarus & Folkman, 1984). If an event challenges or prohibits a goal from being achieved, this may result in more stress emotions. Conversely, if an event can help an individual to achieve their goals, this may result in more positive outcomes (Lazarus, 1999; Lazarus & Folkman, 1984).

To understand how adolescents' appraise their experiences of an event, such as peer-victimisation, it is important to understand what goals are being challenged through this experience. As adolescents' transition from primary to secondary school, they may be particularly vulnerable to the effects of peer-victimisation. This transition coincides with a developmental shift towards a greater importance of peer-relationships and is accompanied by a reorganisation of peer-relationships (Shell,

Gazelle, & Faldowski, 2014). Same-sex friendships and the need to feel popular in the peer-group become increasingly important (LaFontana & Cillessen, 2010; Pouwels et al., 2008). Experiencing peer-victimisation is a direct challenge to such developmental goals as the aim of the behaviour is often to damage friendship groups and social status (Thornberg, 2011).

Situational factors. Situational factors describe factors that capture differences in the nature of the event. Such factors can include the extent to which an event is novel, and has not been previously experienced by the individual, or the extent to which it is predictable and expected (Lazarus & Folkman, 1984). Alongside characteristics of the event, Lazarus and Folkman (1984) suggested several temporal factors (imminence, duration and uncertainty) which can impact on individuals' adaptation to stress. The imminence of an event reflects the length of time before an event occurs and reflects the anticipation of that event. With a specific focus on threat appraisals, the length of time between appraising a situation as threatening and the event occurring (the incubation period) is associated with more intense cognitive appraisals (Lazarus & Folkman, 1984). Additional situational factors include the length of time the situation continues (duration), the extent to which there is some uncertainty as to whether the event will occur or not (temporal uncertainty), and the ambiguity regarding the situation (ambiguity). Such factors are argued to predict the nature of the individual's appraisal of an event (Lazarus & Folkman, 1984).

Peer-victimisation is not a homogenous experience for all those involved, and experiences of peer-victimisation can vary based on the type of situational factors described by Lazarus and Folkman (1984). Although limited, there is some research on the association between the duration, frequency, and chronicity of peer-

victimisation and negative outcomes. In their survey of 898 adolescents, Unnever and Cornell (2004) examined how the chronicity of peer-victimisation experienced is associated with help-seeking behaviour. They defined chronicity as an index of the frequency and duration of peer-victimisation, the number of perpetrators involved, and the number of locations where the behaviour took place. They found a significant relationship between the chronicity of peer-victimisation and the likelihood of reporting their experiences. Those who experienced more chronic peer-victimisation were more likely to seek help (Unnever & Cornell, 2004). Furthermore, evidence also suggests a relationship between the commencement and continuation of peer-victimisation and poor mental health (Kochenderfer-Ladd & Wardrop, 2001; Rueger, Malecki, Demaray, 2011). Such evidence suggests the situational factors identified by Lazarus and Folkman (1984) may play a role in the relationship between peer-victimisation and poor mental health.

Summary. Both the TMS and the socio-ecological approach stress the importance of the relationship between the individual and their environment for better understanding how individuals develop and how they adapt to events (Bronfenbrenner, 1979; Lazarus & Folkman, 1984). As such, integrating the TMS and socio-ecological approach can aid our understanding of how peer-victimisation can impact on mental health. The TMS provides the process through which peer-victimisation impacts on mental health and the socio-ecological model describes the individual and social context, which may influence this process. An integration of these two theoretical approaches has the potential to aid our understanding of the relationship between peer-victimisation and poor mental health and identify opportunities for intervention (Swearer & Hymel, 2015). To date, a wealth of

research has examined the role of coping in this process. Such evidence has identified the relationship between peer-victimisation and coping, and the role of coping in buffering the relationship between peer victimisation and negative outcomes (Hunter & Boyle, 2004; Raskauskas & Huynh, 2015). Although cognitive appraisals are an important part of the TMS, the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health has not received as much research attention.

The Transactional Model of Stress: Cognitive appraisals

Primary Appraisals.

Primary appraisals reflect an individual's evaluation of an event, in the context of their own beliefs, goals and values (Lazarus & Folkman, 1984). These evaluations can fall within one of three categories termed; irrelevant, benign-positive, and stressful (Lazarus & Folkman, 1984). Irrelevant events are those which are evaluated as having no implications for an individual's wellbeing, where there is no risk of anything being lost and no perceived benefit from the experience (Lazarus & Folkman, 1984). Benign-Positive appraisals reflect an evaluation of possible gain following an event and as such are more likely to be appraised as positive events (Lazarus & Folkman, 1984). Conversely, stress appraisals reflect evaluations of possible harm/loss, threat, or challenge.

Harm/loss and threat appraisals reflect a harm or loss that has occurred (harm/loss) or is anticipated (threat) in relation to an event (Laux, 1986; Lazarus & Folkman, 1984). Harm/loss appraisals reflect a form of damage or loss that has already occurred, for example, damage to the self (such as physical harm or damage to self-esteem), or the loss of a valued relationship (Lazarus & Folkman, 1984). Such

appraisals can be accompanied by a sense of threat related to fear that the event may occur again in the future (Lazarus & Folkman, 1984). Threat appraisals relate to harm or loss, but where the potential for harm or loss is anticipated rather than having already occurred (Lazarus & Folkman, 1984).

Threat appraisals capture individuals' evaluations that an event may result in suffering (Stokes & Jackson, 2016). This anticipation of possible harm is fundamental to threat appraisals and as such, is an important variable in mediating reactions to events (Lazarus, 1999). Evidence to date suggests that threat appraisals can mediate the relationship between a range of negative life events and poor mental health in adolescents. Threat appraisals have been found to play a role in adolescents' adaptations to interparental conflict (Fosco & Feinberg, 2015), community violence (Kliewer & Sullivan, 2008), and serious illness, such as cancer (Fearnow-Kenney & Kliewer, 2000). In all cases, such events impact on poor mental health because adolescents felt threatened by their experiences.

Opposite to threat is the notion of challenge appraisals. Challenge appraisals reflect the potential for possible gain or personal growth following an event (Kirby, Morrow, & Yih, 2014; Lazarus & Folkman, 1984). Lazarus (1999) argued that threat and challenge are related. Threat is more of a negative appraisal, emphasising the risk of harm, whereas challenge is more positive, focusing more on the potential for growth or gain. In one of the earliest studies examining children and adolescents' cognitive appraisals of peer-victimisation, Hunter and Boyle (2004) surveyed 459 pupils aged 9 to 14 on whether anything good or bad can occur as a result of their experiences of peer-victimisation. Pupil responses reflected both challenge and threat appraisals. More positive repercussions following peer-victimisation related to

challenge appraisals and included the possibility for personal growth, learning how to deal with the experience, the opportunity to make new friends, and thinking the peer-victimisation will stop. More negative outcomes related to threat appraisals and included the risk of psychological and physical consequences such as loss of confidence or being physically hurt, alongside the risk of increased peer-victimisation, social isolation, and the risk of perpetrating the behaviours. Such evidence suggests that both threat and challenge are salient appraisals following experiences of peer-victimisation.

Secondary Appraisals.

Where primary appraisals reflect an evaluation of the significance of an event, secondary appraisals reflect a complex evaluation of resources and coping options available to successfully manage an event (Lazarus & Folkman, 1984). Such appraisals can reflect a sense of self-efficacy, or confidence, to manage a situation (Bandura, 1977), a perception of control over the event (Folkman, 1984), an evaluation of blame for the event (Lazarus & Folkman, 1984), and the perception of available support from others in the social network (Lakey & Cohen, 2000).

Coping Self-Efficacy. Self-efficacy refers to an individual's belief that they can behave in a way to achieve a particular outcome (Bandura, 1997; Litt, 1988). Self-efficacy can reflect both an individual's outcome expectancy (their belief that their actions will lead to a particular outcome) and their efficacy expectation (an individual's confidence and belief that their behaviour will result in a given outcome) (Bandura, 1997; Lazarus & Folkman, 1984). Bandura (1997) suggested self-efficacy is domain-specific. In a stress context, self-efficacy can reflect an individual's belief in their ability to cope with, and manage, an event (Schunk & Meece, 2006).

Although research with adolescent samples is limited, evidence suggests that higher levels of self-efficacy can be protective in adolescents' adaptations to stressful experiences (Moksnes, Eilertsen, Ringdal, Bjørnsen, & Rannestad, 2019).

A general sense of self-efficacy can protect adolescents from the impact of peer-victimisation (Haraldstad, Kvarme, Christophersen, & Helseth, 2019). Yet work focusing specifically on coping self-efficacy and adolescents' confidence in their capacity to cope with peer-victimisation is limited. In their exploration of coping self-efficacy in a peer-victimisation context, Singh and Bussey (2009) conceptualise coping self-efficacy as reflecting six different domains. These six domains capture adolescents' confidence in their ability to manage possible negative outcomes from peer-victimisation and avoid more negative responses (e.g., engaging in aggressive behaviour or self-blame). Coping self-efficacy, therefore, reflects the individual's evaluations of their abilities to cope with, and manage, experiences of peer-victimisation.

Perceived social support. Perceived social support reflects individuals' perceptions of feeling valued, loved, and cared for by others (Pierce, Sarason, & Sarason, 1991). As an evaluation of a resource that can be drawn upon to manage challenging situations, perceived social support can be categorised as a form of secondary appraisal (Lakey & Cohen, 2000). Research into the role of perceived social support is challenging due to the way it has been defined and measured. There are three main categories of social support: perceived social support, use of social support (enacted support), and the nature of an individual's social network, (e.g., the number of friends and whether someone has a best friend) (Barrera, 1986; Lakey & Cohen 2000). Although evidence suggests these three categories of social support are

related (Lakey & Cohen, 2000), research has also demonstrated they are three distinct concepts (Barrera, 1986). As secondary appraisals reflect an individual's evaluation of the resources they have available to manage an event, the focus of this thesis will be on perceived social support.

Perceived social support can function in two main ways, as outlined in the stress-buffering hypothesis (Cohen & Wills, 1985). Perceived social support can have a main effect on an individual's wellbeing, in that a greater sense of available social support can result in the individual feeling valued, which in turn promotes better mental health. Alongside, perceived social support can also buffer (moderate) the impact of an event on an individual's mental health by providing individuals with options for coping with the situation, and reducing the perception of threat in the experience (Cohen & Wills, 1985; Lakey & Cohen 2000).

There is also a distinction between a general perception of social support and domain-specific perceived social support. A general perception has been likened to a personality construct which reflects an individual's sense of being accepted by others and believing that others will be helpful in times of need (Davis, Morris, & Kraus, 1998; Pierce et al., 1991). Domain-specific support, however, reflects the evaluation of available support from different people within the individual's social network such as family or friends (Pierce et al., 1991). Evidence to date appears to support the notion of these two separate, but related, constructs of perceived social support. In their study of 210 undergraduate students, Pierce et al. (1991) found moderate relationships between measures of global and domain-specific social support, and both forms of perceived social support were related to self-reported loneliness. Similar findings were reported by Davis et al. (1998) who found that while global

and domain-specific social support were related, global perceived social support was related to well-being while domain-specific social support was related to emotional loneliness.

In adolescence, perceived social support can be drawn from several different domains. From a social-ecological perspective, this can be at an individual level captured by a general sense of perceived social support. From the microsystem, perceived social support can be drawn from adolescents' immediate settings, such as parents, teachers and peers (Bokhorst, Sumter, & Westenberg, 2009; Pössel et al., 2018). The transition from childhood to adolescence brings with it a reorganisation of the social network and inter-personal relationships (Shell et al., 2014). In childhood, while peers and friends are important, it is relationships with parents that play a dominant role in development (Helsen, Vollebergh, & Meeus 2000). As children transition into adolescence, peers become more important (Helsen et al., 2000). This increased importance of peers is accompanied with changes to the nature of peer relationships, including increased intimacy as adolescents begin to talk to and depend on their peers more than in childhood (Bokhorst et al., 2009). Other adults, such as teachers may also increase in importance in adolescence (Ryan, Stiller, & Lynch, 1994), however, evidence on the benefits of this form of support is limited. Some suggest that perceived social support from teachers may be more important in childhood than adolescence (Furman & Buhrmester, 1992). In contrast others suggest that teachers may play an important role in managing school-related stressors (Yeung & Leadbeater, 2010).

To date, however, evidence as to the role of perceived social support in the relationship between stress and mental health has yielded inconsistent findings. In

their meta-analysis of 341 studies on the relationship between domain-specific perceived social support and depression in adolescents, Rueger, Malecki, Pyun, Aycock and Coyle (2016) found support for both a stress-buffering and main effect (which they termed a general benefits) role for perceived social support. Their analysis found small-to-medium associations between the different sources of support and depression in adolescents. The stronger associations were found between perceived social support from parents and peer group and depression, whereas weaker associations were found between perceived social support from teachers and close friends and depression. Understanding the role and value of these different sources of support is important to understand better the unique contribution of different domains of support to aid the development of intervention programmes (Bokhorst et al., 2009). The relative importance of different sources of support in a peer victimisation context will be examined in studies two and three.

Control and Blame Appraisals. Cognitive appraisals can reflect the evaluation of personal control and personal blame following an event. Control appraisals focus on an individual's perception of the situation being manageable based on their abilities and provide a perception of being able to do something about the situation (Grob, Flammer, Wearing, 1995; Terranova, Harris, Kavetski, & Oates, 2011). Whereas, blame appraisals reflect the extent to which individuals feel responsible for the situation (Gerard, Buehler, Franck, & Anderson, 2005). Peer-victimisation have been found to predict changes in control appraisals over time. A lower appraisal of control is associated with continued and frequent peer-victimisation over time (Terranova, 2009). This relationship between frequent peer-victimisation and control has also been reported in cross-sectional work for girls but

not boys (Hunter & Boyle, 2002). Research on the role of blame and control appraisals in a peer-victimisation context is rather limited, instead, research has tended to focus on the role of attributions, such as self-blame attributions, as an explanation for the relationship between peer-victimisation and negative outcomes.

Drawing upon attribution theory, attributions such as self-blame, focus on providing an explanation for why an event has occurred (Graham & Juvonen, 2001). This causal explanation can provide individuals with some control over their experience as it provides an understanding for why the event occurred (Graham & Juvonen, 2001). A wealth of research has examined the role of self-blame attributions in adolescents' adaptation to their experiences of peer-victimisation. Janoff-Bulman (1979) proposed that there are two forms of self-blame. *Characterological self-blame* attributions suggest that an event occurred due to aspects of the individual's character, and as such these events are uncontrollable. *Behavioural self-blame*, however, suggests that an event occurred due to behaviour of the individual, which is argued to be changeable and is, therefore, more controllable (Janoff-Bulman, 1979). Experiencing peer-victimisation has been found to be related to both forms of self-blame attribution (Graham & Juvonen, 1998). However, evidence suggests that characterological self-blame plays a greater role in mediating the relationship between peer-victimisation and poor mental health (Boulton, 2013a; Graham & Juvonen, 1998). Such evidence suggests that the knowledge and explanation of an event captured through cognitive attributions plays an important role in adapting to peer-victimisation. Yet, as previously discussed, cognitive attributions are theoretically distinct from cognitive appraisals, and it is the

latter that is argued to play a more important role in predicting adaptations to stressful events (Smith et al., 1993).

Cognitive Appraisals: Summary. As outlined in the TMS, cognitive appraisals play an important role in how individuals adapt to events they experience. Such appraisals directly affect outcomes to an event and can be affected by several situational and individual factors (Lazarus & Folkman, 1984). There are various forms of cognitive appraisal, including threat, challenge, control, blame, perceived social support, and self-efficacy, all of which may be salient appraisals in adolescents' adaptations to stress. Such appraisals may represent factors that can explain individual differences in outcomes of experiencing peer-victimisation.

Aim of the thesis and study 1

Peer-victimisation is a frequent experience for many adolescents (Juvonen & Graham, 2014). As summarised in Table 2.1, research to date has highlighted the negative impact experiencing peer-victimisation can have on a broad range of mental health outcomes. These relationships have been found in both the short- and long-term (Hawker & Boulton, 2000; Reijntjes et al., 2010). Yet not all those who experience peer-victimisation develop poor mental health (Newman et al., 2005). Integrating the transactional model of stress and the socio-ecological approach offers one possible theoretical framework for studying individual differences in the relationship between peer-victimisation and poor mental health. The TMS outlines the process through which events can lead to negative outcomes, while the socio-ecological approach provides the framework for studying the social context in which this process occurs.

Research to date has examined how the TMS can explain the relationship between peer-victimisation and poor mental health, with a particular focus on the coping strategy used in this process (e.g., Hunter & Boyle, 2004; Raskauskas & Huynh, 2015). Evidence from work on the appraisal of other stressful events has suggested that cognitive appraisals can be directly related to both emotional outcomes (Smith et al., 1993) and poor mental health (Fearnow-Kenney & Kliever, 2000; Fosco & Feinberg, 2015). As such, cognitive appraisals may play an important and direct role in the development of poor mental health following experiences of peer-victimisation. Therefore, the aim of this thesis was to examine the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health. Furthermore, the aim of the first study was to conduct a systematic review and synthesise extant research examining the role of cognitive appraisals in the relationship between peer-victimisation, and adjustment.

CHAPTER 4 SYSTEMATIC REVIEW

The relationship between peer-victimization, cognitive appraisals, and adjustment:

A systematic review

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Abstract

Underpinned by the Transactional Model of Stress (TMS), this systematic review synthesizes research testing the role of primary and secondary appraisals in the relationship between peer-victimization and adjustment. A comprehensive literature search was undertaken and 23 papers were included in the review. Primary appraisals of threat and control, but not blame, mediated the relationship between peer-victimization and adjustment. Secondary appraisals of self-efficacy and perceived social support were found to mediate and moderate the relationship. The findings of the review highlight the utility of the TMS in developing our understanding of individual differences in the relationship between peer-victimization and adjustment. The development of the TMS in a peer-victimization context, and future areas of research are discussed.

Keywords: Peer-victimization, Bullying, Transactional Model of Stress, Cognitive Appraisals, Adjustment

Introduction

Many children and adolescents experience peer-victimization and for some such experiences can lead to a number of negative psychological outcomes, such as anxiety and depression (McDougall & Vaillancourt, 2015). Since not all victims experience poor outcomes (Raskauskas & Huynh, 2015), research is now beginning to examine individual variation. This systematic review will examine how the transactional model of stress (TMS: Lazarus & Folkman, 1984) can help to explain this relationship. Specifically, the review will synthesize extant literature exploring how the relationship between peer-victimization and poor adjustment is due to individuals' cognitive appraisals.

The terms peer-victimization and bullying are frequently used interchangeably in the research literature (Casper, Meter, & Card, 2015). Peer-victimization is defined as a repeatedly experienced form of aggressive behavior, perpetrated within the peer group (Hunter, Boyle, & Warden, 2007). Bullying is a form of peer-victimization, where the aggressive behavior is experienced repeatedly and over-time, but where an intent to harm the victim, and a power imbalance (e.g., based on physical strength or popularity in the peer group) are key components of the definition (Whitney & Smith, 1993). For the purposes of this review, the term peer-victimization is used to encompass both peer-victimization and bullying.

Peer-victimization can include direct and indirect aggressive behaviors. Direct aggression includes the use of observable behaviors, where the intention to cause harm is clear. Such acts can include physical aggression, such as hitting and kicking, and verbal aggression, such as name-calling and insults (Marini, Dane, Bosacki, & YLC-CURA, 2006). Indirect aggression includes forms of social and

emotional aggression, such as excluding and ignoring victims. Often the aim is to damage the trust and intimacy between friends with the ultimate goal of permanently damaging social structures such as friendship groups, acts where the intention to harm is less obvious (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995).

The prevalence of these different types of aggressive behaviors is found to change over the course of childhood and adolescence. Gender differences have also been reported. Evidence suggests that girls are more likely to be victims of more indirect, social and emotional bullying and boys are more likely to experience direct acts such as name calling and physical aggression (Björkqvist, 2001a; Prinstein, Boergers, & Vernberg, 2001; Rivers & Smith, 1994). Direct forms of aggression, such as physical and verbal bullying are more frequently reported by younger children whereas indirect forms of aggression are more likely to be reported by secondary school pupils (Björkqvist, Österman, & Kaukiainen, 1992; Smith, Madsden, & Moody 1999). Overall, peer-victimization is most commonly experienced in middle school, during early adolescence (Hong & Espelage, 2012).

A number of meta-analyses have highlighted the relationship between peer-victimization and higher levels of internalizing distress such as symptoms of depression and anxiety, and higher rates of externalizing problems, such as aggressive behavior (Hawker & Boulton, 2000; Reijntjes et al., 2011; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Retrospective and longitudinal studies suggest that this relationship can occur both in the short- and long-term, even continuing into adulthood (e.g., Ttofi, Farrington, Lösel, & Loeber, 2011).

Although the relationship between peer-victimization and psychological adjustment is well established, not all children and adolescents experience negative outcomes (Newman, Holden, & Deville, 2005). Peer-victimization has been defined as a form of social stress (Björkqvist, 2001b), as such applying the transactional model of stress (TMS) (Lazarus & Folkman, 1984) to testing the relationship between peer-victimization and adjustment may aid our understanding of this individual variation in outcomes.

The TMS proposes that individual reactions to a stressful experience are a result of an individual's cognitive appraisal processes and subsequent coping options (Lazarus and Folkman, 1984). Cognitive appraisal involves the evaluation of the significance of an event for an individual's wellbeing (Lazarus & Folkman, 1984). This appraisal process includes both primary and secondary appraisals. The process is not sequential; primary and secondary appraisals can occur at the same time and be mutually influential. The aim of this systematic review is to examine how such appraisals function in the relationship between peer-victimization and adjustment. The role of coping in the relationship between peer-victimization and adjustment has been examined in other reviews (e.g., Raskauskas & Huynh, 2015), and so will not be included in this review.

Through primary appraisal, the importance and relevance of an experience to personal goals and beliefs is evaluated. Lazarus and Folkman (1984) proposed three types of primary appraisal: (i) the appraisal of a situation as potentially harmful or involving a risk of loss to the individual, (ii) appraisals where an individual feels emotionally or physically threatened by an exchange, and (iii) challenge appraisals where there is the opportunity for some form of growth or mastery. The three forms

of primary appraisal are not mutually exclusive and may be interrelated, for example, a harm/loss experience may also encompass an element of threat (Lazarus, 1999). In a peer-victimization context, research has demonstrated the importance of the primary appraisal process. For example, victims who report greater control over their experiences of peer-victimization are more likely to report seeking support (Terranova, 2009).

Secondary appraisals focus on the individual's evaluation of what resources they have available, and to what extent those resources may be successful in dealing with the situation. The socio-ecological framework of bullying (Espelage, 2014; Swearer & Hymel, 2015) discusses peer-victimization from an individual level, but also from the perspective of the wider community and social setting. Such a framework can be used to identify potential resources available to victims. On an individual level, secondary appraisals can include aspects of self-efficacy, such as coping self-efficacy, which relates to how people think about their motivation for, and their ability to perform, future acts, (Bandura, 1997). Resources can also include the perception of available social support drawn from the broader microsystem including peers, family, teachers, and the wider school community. Such perceived support has been found to buffer the impact of peer-victimization (Flashpoler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009).

Primary and secondary appraisals inform the interpretation of an event as stressful, and, any subsequent reaction to it (Lazarus & Folkman, 1984). This systematic will examine how appraisals function in the relationship between peer-victimization and adjustment. As appraisals can theoretically affect an individual's reaction to a stressful encounter, and explain why people react differently to the same

situation (Park & Folkman, 1997), they have been operationalized as either mediating or moderating variables.

Mediating variables explain the sequential order of variables, and can explain why there is a relationship between them (Baron & Kenny, 1986; Mackinnon, 2008). In the context of the TMS, an event is followed by an individual's appraisal of its personal significance, which in turn influences psychosocial adjustment (Lazarus & Folkman, 1984). For example, higher levels of victimization may directly impact on appraisals of threat and control which in turn impact on adjustment. The analysis of primary appraisals in the relationship between peer-victimization and adjustment may therefore be operationalized as mediation.

Secondary appraisal involves the evaluation of available resources to manage the stressful experience. These resources, such as perceived social support and self-efficacy, may be in place before the stressful experience. During the secondary appraisal process individuals draw upon and evaluate whether these pre-existing resources would be successful in managing the situation (Lazarus & Folkman, 1984). Therefore, secondary appraisals may be best tested as moderating variables. A moderator can explain for whom, or under what conditions, two variables are related, where the nature of the relationship is dependent on the level of the moderator (Baron & Kenny, 1986; Holmbeck, 1997; Mackinnon, 2008). Related to peer-victimization, such analysis would enable us to test whether the relationship between peer-victimization and adjustment is stronger for those with fewer available resources (e.g., perceived social support).

The Current Study

The TMS offers a potential framework for understanding individual variation in reactions to peer victimization. Specifically, research has demonstrated that cognitive appraisals may play an important role in the relationship between peer-victimization and adjustment (e.g., Flashpohler et al., 2009; Lazarus & Folkman, 1984; Terranova, 2009). The aim of this systematic review is to synthesize relevant literature, to identify whether appraisals can explain the relationship between peer-victimization and adjustment. Specifically, the review will examine the extent to which primary appraisals mediate, and secondary appraisals moderate, the relationship between peer-victimization and adjustment.

Method

This systematic review follows the PRISMA standards for the undertaking and reporting of systematic reviews (Liberati et al., 2009). Four sets of search terms were developed for the four variables of interest: peer-victimization (e.g., ‘peer-victimization’ and ‘bullying’), primary appraisal (e.g., ‘threat appraisal’), secondary appraisal (e.g., ‘perceived social support’, and adjustment (e.g., ‘maladjustment’, ‘depression’). Combinations of these search terms and Boolean and/or operators were used to search the PsychInfo, PsychArticles, Web of Science, Science Direct and Google Scholar databases. After removing duplicates, the titles and abstracts of 553 articles were screened, and the full texts of 1,108 articles were assessed for eligibility in the review (see Figure 4.1).

FIGURE 4.1 ABOUT HERE

Inclusion and Exclusion Criteria

Articles had to be empirical papers published in English in a peer-reviewed journal. The study had to include a sample of young people, defined as those younger than 18 years old, retrospective studies were excluded from the review. No limits were placed on publication year. Papers had to include measures of the key variables under investigation: peer-victimization or bullying, primary or secondary appraisal, and a measure of psychological adjustment. Measures of peer-victimization had to include a report of individual experiences and could include self-report, peer-nomination, or teacher nomination measures.

Search terms for the measurement of appraisal described different aspects of the primary and secondary appraisal process (e.g., ‘primary appraisal’, ‘threat’, ‘perceived social support’). For primary appraisals, search terms reflected the

importance and relevance of an experience to personal goals and beliefs (e.g., threat appraisals, blame appraisals). Appraisals and attributions have often been used interchangeably in the research literature, however they are theoretically distinct (Smith & Lazarus, 1993). In a series of studies, Smith, Haynes, Lazarus and Pope (1993) found appraisals mediated the relationship between attributions and wellbeing, suggesting that attributions predict wellbeing because of individuals' appraisals of the event. Such findings highlight the distinction between the knowledge of an event (attributions) and the evaluation of the personal significance event (appraisals). As the TMS focuses on the role of appraisals in the relationship between stressor and adjustment, only studies that explored victims' immediate appraisal of their peer-victimization experiences were included, studies exploring attributions (e.g., Graham & Juvonen, 1998) were excluded.

Measures of secondary appraisal had to include a participant's judgement regarding the victim's ability to cope with the situation, for example perceived social support, or confidence in their ability to cope with a stressful situation or rely on their friends to help (i.e., assessing social or coping self-efficacy). Regarding perceived social support, Cohen and Wills (1985) drew a distinction between structural social support (e.g., the number of friends someone has) and functional social support (e.g., the quality or nature of available support). As secondary appraisal involves the immediate evaluation of available resources only studies including a measure of functional social support were included. Studies that measured structural support with no measure of the quality of this relationship, and studies where only the actual use of social support was measured, were excluded from the review. Intervention studies were also excluded from the review. Such

studies often aim to increase victim's perception of available support and therefore the measure of such support is likely to change over the duration of the study. Any post measures may reflect the intervention and not victims' immediate appraisals, which are the focus of this review.

The aim of this review is to examine how, if at all, cognitive appraisals function in the relationship between peer-victimization and adjustment. Only studies that analyzed the key variables following the chronology set out by the TMS were included. Peer-victimization had to precede appraisal, and appraisal had to precede adjustment. In order to identify the role of appraisals in this process only studies that measured appraisals as either a mediator or moderator of the relationship between peer-victimization and adjustment were included in the review. Any paper that analyzed appraisals in a manner that did not follow the sequence set out in the TMS (e.g., as a predictor of peer-victimization; Gini, Carli, & Pozzoli, 2009) was excluded from the review.

Reliability of study selection and inclusion

The first author undertook the screening of all papers. Article titles and abstracts were reviewed against the inclusion and exclusion criteria. Ambiguous titles and abstracts were retained and the full text was reviewed. Once the first author had completed this, a research assistant conducted a subsequent check. The research assistant was provided with a summary of the inclusion and exclusion criteria and reviewed 20% of the search results. The initial Cohen's Kappa was 0.41, suggesting a moderate level of agreement. Disagreements in the reviewed articles and the inclusion and selection criteria were amended and clarified. In particular, the amended criteria stressed the need for all variables to be measured in the study, and

for the study to be written in English. The research assistant conducted a subsequent check on an additional 20% of the search results, which yielded a higher and good level of agreement (Cohen's Kappa =0.73). For those studies where there remained disagreement, the first author and research assistant discussed the papers and agreed a decision.

Assessment of Study Quality

Research into peer-victimization tends to be conducted using cross-sectional designs and questionnaire methods. Many of the current quality appraisal (QA) tools recommended for systematic reviews place greater value on the use of experimental methods. Such tools are not appropriate to judge the quality of research in this area, as such 'higher quality' methods cannot be used to ethically study experiences of peer-victimization and any subsequent relationship with adjustment. Therefore, an adapted version of a QA tool for issues of prevalence was used (Munn, Moola, Riitano, & Lisy, 2014).

The QA tool was adapted to include only the first eight items of Munn, et al.'s (2014) tool. The aim of the review did not include the analysis of any subgroup populations, questions 9 and 10 of the tool examining confounding variables, subgroup differences and subpopulation identification, were not used. Details of the specific questions included in the QA tool are included in the notes section under table 4.1. The questions focus on the nature of the sample and sample size (questions 1 to 4), the measurement of the key variables of interest (questions 6 and 7) and the appropriateness of data analysis (questions 5 and 8).

Each paper was assessed on each of the eight criteria and judged to meet the criteria (yielding a score of 1), partially meet (0.5), or not meet/ not be described in

the paper (0). A total quality score was then calculated which could range from zero to eight. A quality score of four or above would indicate a low risk of methodological bias and would be included in the review. Papers scoring below four would be excluded. The first author undertook the quality appraisal of all included papers.

Data analysis and Synthesis

The synthesis of results employed a qualitative analysis approach and focused on synthesizing the mediating and moderating relationships found between variables across studies. Meta-analysis was not considered an appropriate technique to employ because of the heterogeneity in the definition and measurement of the variables of interest across the studies.

Results

The final review included 23 papers, five exploring primary appraisals and 18 exploring secondary appraisals. No studies included measures of both primary and secondary appraisal. The total quality appraisal scores of the included studies were all above 4 and ranged from 5.5 to 8 (see Table 4.1).

TABLE 4.1 ABOUT HERE

Study Characteristics: Sampling and Design

The characteristics of all included papers are shown in Table 4.2. All papers were published between 1999 and 2016. Sample sizes ranged from 90 to 2,790 participants, from between 1 and 28 schools. All the included papers met the criteria related to the representativeness of the sample (QA tool, Q1) and adequacy of the description of participants (Q4).

The majority of papers reported an adequate sample size. Two studies reported low sample sizes, and did not meet the criterion set out in question 3 of the QA tool. Lim et al. (2011) reported a sample size of 96 and Seeds et al. (2010) reported a sample of 101, samples which would yield low statistical power for the regression analyses used in the papers (Field, 2013). The remaining papers reported an adequate sample size. Regarding the recruitment of participants questions on the QA tool (Q2), the majority of papers (N=21) recruited participants through school settings, few studies reported why or how particular schools were chosen. All studies recruited approximately equal numbers of males and females with the exception of Seeds, Harkness and Quality (2010), which included twice as many females as males. The ages of participants ranged from 8 to 19 years, mean ages ranged from 9.22 to 15.57 years (the mean age not reported in 12 studies). The ethnicity of

participants was reported in 13 of the 23 papers. All these 13 papers included a different categorization of ethnicity, see table 2.

Cross-sectional designs were employed in the majority of studies (N=20). Three papers utilized a longitudinal design, varying between 8 months and 1 year. Eighteen papers relied exclusively on self-report measures and five papers included a mixture of methods including peer nomination and interviews. The majority of studies (N=19) reported detail on where the questionnaires were administered and by whom (QA tool, Q7). Four studies reported little detail on survey administration, making it difficult to judge the reliability of the data collection (Pouwelse, Bolman, Lodewijkc, & Spaa, 2011; Rigby, 2000; Rigby & Slee, 1999; Tanigawa, Furlong, Felix, & Sharkey, 2011).

Study Characteristics: Measurement of Variables

Peer-victimization was measured differently across the studies. Fifteen papers included one total composite measure of peer-victimization. Specific forms of peer-victimization, such as physical, verbal and indirect victimization, were measured in six papers. One paper included a total victimization score alongside a score on discriminatory and non-discriminatory peer-victimization and one paper included a total composite measure of peer-victimization alongside measures of other aggressive behaviors such as peer aggression and bullying.

The most frequently measured primary appraisal was threat appraisal, measured in all five primary appraisal studies. Control appraisals were measured in three papers, and two papers included a measure of blame appraisals. Two forms of secondary appraisal were measured in the included studies, perceived social support (N=16) and self-efficacy (N=2). Of the two papers measuring self-efficacy with the

first measuring self-efficacy to enlist support from an adult, self-efficacy to enlist support from a friend, and school collective efficacy. The second paper included measures of self-efficacy for avoiding aggressive behavior, proactive behavior, victim-role disengagement, and avoiding self-blame. Regarding social support, four studies included a measure of global social support, the remaining 12 papers measured person domain specific forms of support. Six studies measured perceived parental support and two studies measured perceived support from a teacher. Perceived support from friends or peers was measured in 11 papers, seven of which measured this as a subscale of perceived social support, and five measured this as a component of friendship quality.

Regarding adjustment, 14 papers included one measure of adjustment and nine papers included more than one measure. Measures of depression were included in 15 papers, measures of anxiety or social anxiety were included in five studies, and measures of loneliness were included in three studies. Three papers included a general measure of psychological wellbeing, and social dissatisfaction or dysfunction was included in three papers. One paper measured suicide ideation and one paper measured the emotional outcomes of anger, sadness, and fear. Regarding externalizing symptoms, two studies included measures of aggression and five studies included general measures of externalizing symptoms or problem behavior.

A variety of measures were used across the studies, some used all standardized measures, and others used a combination of standardized tools and measures designed for the purposes of the study. All the papers included self-report measures of adjustment, one paper also included parent reports. Regarding the standardized measurement question on the QA appraisal (Q6), all studies either met

or partially met this criterion. Where measures were designed specifically for the purposes of a single study (i.e., not previously validated), they were graded as partially meeting this criterion. Studies were also graded in this way if the reliability of one or more of the measures was low (defined as $\alpha < 0.7$; Field, 2013).

Nature of the Relationship Between Variables

All five primary appraisal papers tested primary appraisal as a mediating variable. Regarding the 18 secondary appraisal papers, one paper tested secondary appraisal (perceived social support) as both a mediator and moderator, and four tested it as mediating variable. Of these four papers, two measured self-efficacy one measured perceived global social support and one measured perceived social support from a friend. The remaining 13 papers tested secondary appraisal as a moderator and all measured perceived social support. All papers included in the review met the criterion set out in questions 7 and 8 of the QA tool, relating to appropriate statistical analysis and data analysis.

TABLE 4.2 ABOUT HERE

Synthesis of Key Findings

The relationship between peer-victimization, primary appraisals and adjustment.

All five primary appraisal papers measured threat appraisals. Two papers measured only threat appraisals, one paper measured threat appraisals alongside blame appraisals, and three papers measured threat, control and blame appraisals. The two papers that measured only threat appraisal included a number of measures of adjustment, the remaining three papers included only one.

Regarding threat appraisals, three studies found evidence of mediation, with one reporting that threat appraisals fully mediated the relationship between peer-victimization and depression (Giannotta, Settanni, Kliewer, & Ciairano, 2012), and one that threat appraisals partially mediated this relationship (Hunter, Durkin, Heim, Howe, & Bergin, 2010). Taylor, Sullivan, and Kliewer (2013) tested different types of peer-victimization and different aspects of primary appraisal. They found that relational victimization predicted threat appraisal (in the form of threats of negative self-evaluation) after 6 months, which in turn predicted depression two years later. No significant effect was found from physical victimization to depression. Two studies, measuring different aspects of internalizing symptoms, did not find a mediating role for threat appraisals. Catterson and Hunter (2010) found no mediating role for threat appraisals in the relationship between peer-victimization and loneliness, and Anderson and Hunter (2010) found no mediating role of threat appraisals in the relationship between peer-victimization and the emotional outcomes of sadness and anger.

The role of threat appraisals in the relationship between peer-victimization and externalizing symptoms was examined in two studies. One study found no mediating role of threat appraisals (Gianotta et al., 2012). Conversely, Taylor et al. (2013) found that relational peer-victimization, but not physical victimization, predicted threat appraisal (threats of negative self-evaluation) after approximately 6 months, which in turn predicted aggression two years later.

Of the three studies measuring control appraisal, two studies found a partial mediating role for these appraisals in the relationship between peer-victimization and depression (Hunter et al., 2010) and between peer-victimization and loneliness

(Catterson & Hunter, 2010). However, control appraisals did not mediate the relationship between peer-victimization and feelings of anger or sadness (Anderson and Hunter, 2010). Blame appraisals neither mediated the relationship between peer-victimization and loneliness (Catterson & Hunter, 2010), nor between peer-victimization and emotional outcome (Anderson & Hunter, 2010).

To summarize the primary appraisal literature; control and threat were found to play a role in the relationship between peer-victimization and adjustment. Although only measured in two studies, no significant mediating effect for blame was reported.

The relationship between peer-victimization, secondary appraisals, and adjustment.

Self-efficacy.

Two studies explored whether self-efficacy mediates the relationship between peer-victimization and adjustment. In their longitudinal study, Barchia and Bussey (2010) found that collective self-efficacy (confidence in students and teachers' ability to stop bullying), and self-efficacy to enlist support from a friend, partially mediated the relationship between peer-victimization and depressive symptomology after 8 months.

When looking at particular characteristics of coping self-efficacy, Singh and Bussey (2011) found a number of mediating effects. Self-efficacy for avoiding self-blame and self-efficacy for victim role disengagement partially mediated the relationship between peer-victimization victimization and both social anxiety and depression. Self-efficacy for proactive behavior also partially mediated the relationship between victimization and social anxiety, but not between peer-

victimization and depression. Self-efficacy for avoiding aggressive behavior partially mediated the relationship between peer-victimization and both externalizing symptoms social anxiety, but not between peer-victimization and depression.

Both studies that tested the role of self-efficacy in the relationship between peer-victimization and adjustment tested this as a mediating variable. These two studies explored different aspects of self-efficacy and reported significant mediating effects, demonstrating the role of this form of secondary appraisal in the relationship between peer-victimization and adjustment.

Global perceived social support.

Global social support was tested as a moderating variable in two studies, as a mediating variable in one study, and as both a mediator and a moderator in one paper. Global social support mediated the relationship between peer-victimization and adjustment in two papers (Pouwelse, Bolman, Lodewijkc, & Spaa, 2011; Seeds, Harkness, & Quilty, 2010). Specifically, Pouwelse et al. (2011) found that in boys, social support mediated the relationship between peer-victimization for those who were a victim and those who were defined as a bully-victim (i.e., who are both victim and bully). For girls, social support mediated the relationship only for those defined as a bully-victim. Global perceived social support did not moderate the relationships between peer-victimization and wellbeing (Rigby, 2000), peer-victimization and suicide ideation (Rigby & Slee, 1999), or peer-victimization and depression (Pouwelse et al., 2011).

The included studies on global perceived social support yielded mixed findings. When global perceived social support was tested as a moderator found no significant effect was reported. The studies that tested this form of secondary

appraisal as a mediator reported significant effects. Gender differences in this relationship were also reported. These studies demonstrate a role for global perceived social support in the relationship between peer-victimization and adjustment.

Contradictory gender differences were reported in the two studies. Tanigawa et al. (2011) found that perceived support from a parent moderated the relationship between peer-victimization and depression in boys but not girls, whereas Davidson and Demaray (2007) found that perceived support from a parent moderated the relationship between peer-victimization and internalized distress in girls and but not boys. Perceived social support from a parent did not moderate the relationship between peer-victimization and depression, (Holt & Espelage, 2007; Cheng et al., 2008; Lim et al., 2011, Rothon et al., 2011), or between peer-victimization and externalizing symptoms (Davidson & Demaray, 2007).

Perceived social support from a teacher, from the school or classmates.

Perceived social support from a teacher or classmate moderated the relationship between peer-victimization and internalizing symptoms, in boys but not girls (Davidson & Demaray, 2007). The relationship between peer-victimization and internalizing symptoms was stronger in those with less perceived support. Perceived support from a teacher, classmate, or school did not moderate the relationship between peer-victimization and depression (Tanigawa et al., 2011) or externalizing symptoms (Davidson & Demaray, 2007).

Perceived social support from friends or peers.

Of the seven papers that measured perceived social support from a friend or peer, one study found that perceived social support from friends or peers fully mediated the relationship between peer-victimization and psychological health (Chen

& Wei, 2013). The remaining six papers six papers found perceived social support from friends or peers moderates the relationship between peer-victimization and adjustment.

Perceived close friend support moderated the relationship between peer-victimization and adjustment in boys but not girls (Tanigawa et al., 2011; Cheng, Cheung, & Cheung, 2008; Rethon, Head, Klineberg, & Stansfield, 2011). All three studies found a buffering effect for this source of support where the relationship between peer-victimization and depression was stronger in those with lower perceived social support from a close friend. Lim et al. (2011) reported the opposite result, where perceived social support from peers moderated the relationship between peer-victimization and depression in girls but not boys. Those who reported high peer-victimization and high perceived peer social support reported lower depression scores compared to those with low perceived social support. One study found no moderating role in the relationship between peer-victimization and internalizing symptoms (Davidson & Demaray, 2007).

This protective role of peer social support reported was not consistently found. Perceived social support from friends or peers moderated the relationship between peer-victimization and depression for both victims and bully-victims, with those with higher levels of social support reporting higher levels of anxiety/depression (Holt & Espelage, 2007). A similar result was found for externalizing symptoms. Davidson and Demaray (2008) found that perceived close friend support significantly moderated the relationship between peer-victimization and externalizing symptoms in boys, but those who reported high peer-victimization

and high-perceived support from a close friend reported *higher* externalizing symptoms.

All but one of the 12 studies that tested domain specific perceived social support tested this as a moderator. Studies that tested the role of perceived social support from parents/ guardians and from teachers/ classmates/ school yielded rather inconsistent results regarding the moderating effect. Regarding perceived support from a friend/ peer, findings of these studies found an effect for this form of social support, however it was not consistently found to be protective.

Social support characteristics of friendship quality.

Supportive aspects of friendship moderated the relationship between specific types of peer-victimization and adjustment. Perceived support from a friend moderated the relationship between relational victimization and externalizing behavior (Prinstein et al., 2001), where relational victimization was associated with externalizing problems for those with low, but not high, perceived support from a friend. In their longitudinal study, Cuadros and Berger (2016) reported that perceived support from a friend moderated the relationship between peer victimization and socio-emotional wellbeing six months later for both boys and girls. Hodges, Boivin, Vitaro, and Bukowski (1999) also reported a buffering effect in their one-year longitudinal study. They found perceived protection moderated the relationship between victimization and internalizing problems reported one year later. Victimization was related to higher internalizing problems for those with medium or low perceived protection. No relationship between victimization and internalizing problems was found for those who reported high levels of protection.

The protective nature of aspects of friendship was not consistently found, and differed on the basis of the type of peer-victimization experienced. Regarding particular types of victimization, Woods, Done, and Kalshi (2009) found no moderating effect for help in the relationship between relational victimization and loneliness. But the help characteristic of friendship quality moderated the relationship between direct victimization and loneliness. Victims of direct aggression, with higher levels of perceived help in friendship quality, reported lower levels of loneliness.

The perceived help characteristic of friendship support also moderated the relationship between relational victimization and social concerns, but gender differences were found in the nature of this relationship (Schmidt & Bagwell, 2007). In girls, the relationships between relational victimization and social concerns, and between overt victimization and social concerns were strongest for those with low/average help in friendships compared to those with a high degree of help. The opposite was found in boys, where the relationships between relational victimization and social concerns, and between overt victimization and social concerns, were stronger for those who reported a higher amount of help. Regarding the relationship between peer-victimization and depression, Schmidt and Bagwell (2007) reported that the friendship qualities of security and closeness, moderated this relationship. In girls, the relationship between overt victimization and depression was strongest in those with low security, however in boys the relationship was strongest in those with high security. Regarding closeness, in girls, the relationship between overt victimization and depression was stronger when closeness increased. For boys, there

was no difference in the relationship between overt victimization and depression for the different levels of closeness.

Consistent with the findings of studies on perceived social support from friends/ peers, studies that measured perceived protective qualities of friendship demonstrated a moderating role for this form of secondary appraisal. Also in line with the perceived social support literature, such aspects of friendship quality were not always found to be protective in the relationship between peer-victimization and adjustment.

Discussion

This review examined whether primary appraisals mediate, and secondary appraisals moderate, the relationship between peer-victimization and adjustment. The extent to which a victim evaluates their experience as threatening or within their control (both primary appraisals) partially mediates the relationship between peer-victimization and adjustment. Self-efficacy and perceived social support (both secondary appraisals) also appear to play a role in explaining the relationship. Aspects of coping self-efficacy and perceived global social support acted as mediators, whereas perceived social support from particular individuals moderated the relationship between peer-victimization and adjustment. This moderating role for perceived social support was not consistently found to be protective. Findings also suggest that the relationship between peer-victimization, appraisals, and adjustment may be dependent on the victim's gender and the type of peer-victimization experienced.

The Relationship between Peer-Victimization, Primary Appraisal, and Adjustment

The consistent support for primary appraisals as mediating variables bolsters the theoretical relationship between the stressor, primary appraisal, and outcome posited by the TMS (Lazarus & Folkman, 1984). Specifically, it is the evaluation of the personal significance of the event that predicts subsequent wellbeing (Smith, Haynes, Lazarus, & Pope, 1993).

When children and adolescents feel threatened by a stressor, in this case peer-victimization, they may worry more about their experiences, which subsequently relates to internalizing symptoms, such as depression (Grych, Fincham, Jouriles, &

McDonald, 2000). Regarding externalizing symptoms, threat appraisal mediated the relationship between peer-victimization and aggression in a two-year longitudinal study (Taylor et al., 2013), but not in a cross-sectional study (Gianotta et al., 2012). It may be that aggressive behavior is a long-term outcome of feeling threatened. If peer-victimization continues, victims may develop a greater evaluation of threat and respond with anger through aggressive behavior (Grych, Harold, & Miles, 2003).

Control appraisals mediated the relationship between peer-victimization and both loneliness and depression. Children's perception of control can influence how they manage their situation, predicting coping strategies and subsequently adjustment (Compas, Banez, Malcarne, & Worsham, 1991). In a peer-victimization context, threat and control appraisals are negatively correlated suggesting they may be mutually influential (Catterson & Hunter, 2010). Those with a greater sense of control may appraise their situation as less threatening, subsequently reducing the impact on adjustment. Control appraisals however, did not mediate the relationship between peer-victimization and feelings of anger, sadness and fear. It may be that other appraisals such as blame or challenge may play a role in the development of such outcomes (Anderson & Hunter, 2010).

The primary appraisal of peer-victimization may be dependent on the type of victimization experienced, as demonstrated by Taylor et al. (2013). They found that indirect, but not direct, victimization predicted threat appraisal which subsequently predicted adjustment. Indirect bullying involves the threat to social structures, friendships, or reputation and often occurs with the ultimate goal of demeaning, insulting, and degrading the victim in front of the peer group (Björkqvist et al., 1992). Developing positive social relationships is a major goal in adolescence (Eder,

1985; La Greca & Lopez, 1998). Indirect victimization directly targets friendships and social relationships, therefore it may be evaluated as being of greater significance, and subsequently appraised as more threatening.

The Relationship between Peer-Victimization, Secondary Appraisal, and Adjustment

The importance of secondary appraisals outlined in the TMS is supported by the findings of this review. Secondary appraisals play a role in the relationship between peer-victimization and adjustment, supporting the notion that an individual's perception of available resources to manage the stressor can buffer the impact on adjustment (Cohen & Wills, 1985; Lazarus & Folkman, 1984). Despite the TMS-informed prediction that secondary appraisals are moderating variables, the included studies assessed them as both moderators and mediators depending on the type of resource being appraised. The findings of the review highlight a range of resources evaluated as part of the secondary appraisal process. These resources can be mapped onto the individual and microsystem levels of the socio-ecological framework (Espelage, 2014; Swearer & Hymel, 2015). At an individual level, factors included self-efficacy and perceived global social support, which were operationalized consistently as mediators. In contrast, perceived social support from individuals within the microsystem, such as teachers and peers, was operationalized as a moderator.

Self-Efficacy

Self-efficacy to enlist support from a friend or parent, and self-efficacy in relation to coping with peer aggression, mediated the relationship between peer-victimization and adjustment. Peer-victimization can result in a reduction in coping

self-efficacy, the extent to which people feel they can depend on others or on themselves to manage to the situation, this in turn can result in poorer adjustment (Barchia & Bussey, 2010; Singh & Bussey, 2011). These findings support the notion that self-efficacy, in this context an individual's confidence in their own ability to manage peer-victimization, can promote resilience to adversity (Bandura, 2006; Jerusalem & Schwarzer, 1992).

Social Support

Findings of the review of the perceived social support literature support the notion that perceived support from specific people (domain specific) and general perceptions of global social support represent two different constructs (Pierce, Sarason, & Sarason, 1991; Davis, Morris, & Kraus, 1998). Perceived global social support represents a more general world-view of support (Davis et al., 1998), providing an overall feeling of being supported and socially accepted. Findings of this review found this form of perceived social support mediated, but did not moderate, the relationship between peer-victimization and adjustment. Victimization can damage social networks, resulting in victims feeling isolated which subsequently affects adjustment (Zimmer-Gembeck, Trevaskis, Nesdale, & Downey, 2014). This suggests that global perceived social support may play more of a sequential role in the relationship between peer-victimization and adjustment.

All but one of the studies in this review tested domain specific aspects of perceived social support of support as moderators. The findings may reflect children's previous experiences of accessing support from these domains, and the evaluation of how successful this support has been, and will be in the future (Pierce et al., 1991). The protective nature of perceived social support from teachers,

parents, and peers/friends reported in some of the studies supports the buffering hypothesis of social support (Cohen & Wills, 1985). This suggests that perceived social support predicts the extent to which a stressful situation is appraised as threatening, harmful, or within the victim's control. Those with a perception of social support are more likely to appraise their experience as within their control and as such the appraisal of threat and harm is reduced. In addition, such perceived social support could provide victims with options on how to manage their situation, for example seeking support from a teacher or parent or talking to a friend (Cohen & Wills, 1985).

Some studies, however, found no moderating role of perceived support from a teacher or from a parent. Such studies included participants from an older age range, compared to the two studies that reported an effect. This may reflect the developmental shift seen in adolescence, where young people move away from dependence on parents and other adults for help and support, to a greater dependence on peers (Fuligni & Eccles, 1993).

The protective buffering role of perceived social support from friends was not consistently found. There are a number of possible explanations for why such support may not be protective. The findings may reflect children's evaluations of how successful such support has been in the past (Pierce et al., 1991), if victims have sought support previously but it failed to stop the victimization it may not be evaluated as a possible resource to draw upon for support. Alternatively, if children seek support from friends, discussing stressful experiences can be related to excessive rumination, which subsequently impacts on adjustment (Visconti & Troop-Gordon 2010). Finally, friends of the victim, may not offer any protection from

victimization as they may be the perpetrators of the aggression, or the friendship may be characterized as high conflict, and as such would provide no support (Daniels, Quigley, Menard, & Spence, 2010).

Consistent with the literature on primary appraisals, findings suggest the relationship between peer-victimization, secondary appraisals and adjustment is dependent on the type of victimization experienced. Gender differences in outcomes to different types of victimization were also reported. The findings may reflect participants' previous experiences of accessing support in the past, and the success of this may be dependent on the type of victimization experienced. Friends and peers may perceive direct victimization as potentially more harmful or serious and therefore may be more likely to intervene and support the victim (Mishna, 2004). Boys and girls have different goals regarding friendship and peer relationships, where boys strive for dominance within the social group and girls strive for more intimate friendships (Scheithauer, Hayer, Petermann, & Jugert, 2006). Different forms of aggression challenge these goals differently, therefore any variation in outcome may also be due to gender differences in how the victimization is appraised. The reviewed literature however is limited, and yielded inconsistent results. Continued peer-victimization could affect the support networks available or the evaluation of the extent to which particularly sources of support are likely to be helpful. Therefore, future research should employ longitudinal designs, and include measures of different types of victimization, different sources of perceived social support, and analysis by gender, to explore these issues further.

Future Research: Integrating the Transactional Model of Stress and the Socio-Ecological Framework

The findings of this review, alongside a parallel body of work on the role of coping, (e.g., Raskauskas & Huynh, 2015) demonstrate the utility of the TMS in aiding our understanding of how and why peer-victimization predicts adjustment. Appraisals are part of a complex transactional process between the person and their environment, where situational and individual factors play a role in the relationship between a stressor and adjustment (Lazarus & Folkman, 1984). The socio-ecological framework (Espelage, 2014) provides a useful framework for understanding such individual and situational factors pertinent to the peer-victimization experience. Future research, underpinned by an integration of both perspectives, would facilitate a more multidimensional understanding of the relationship between peer-victimization, appraisals, and adjustment.

Although not tested directly, the conclusions drawn from the reviewed literature suggest that continued experiences of peer-victimization are likely to change both primary and secondary appraisals. As with other reviews (e.g., Kretschmer, 2016), a dependence on cross-sectional methods was a feature of the work identified. This impedes our ability to identify causal relationships between peer-victimization, appraisals, and adjustment. From both a theoretical and analytical perspective, testing the role of appraisals in the relationship between peer-victimization and adjustment, and the social context of this relationship, should be undertaken using longitudinal data (Lazarus, 2000; Mackinnon, 2008).

Peer-victimization is typified by the frequent and repeated experience of aggressive behavior (Hunter et al., 2007), where the aim is to degrade and humiliate

victims in front of their peers (Björkvist, 2001b). The TMS outlines that situational factors such as the novelty and ambiguity, or the duration and perceived imminence, of the event, are likely to be appraised differently (Lazarus & Folkman, 1984). As peer-victimization continues, it is likely to affect the appraisal process as any coping strategies previously employed have failed to stop the victimization. Primary appraisals of threat may increase, and there may be a decrease in perceptions of control, and secondary appraisals of self-efficacy and global social support. Furthermore, friends and peers may not want to support the victim for fear of being targeted, which would subsequently influence the evaluation of the availability of support from friends/ peers (Mishna, 2004). Future longitudinal research should examine how the continuity or change in peer-victimization affects both primary and secondary appraisals, and subsequently adjustment.

The TMS also posits that appraisals can be mutually influential (Lazarus & Folkman, 1984). No studies were identified that had tested the interaction of appraisals in the relationship between peer-victimization and adjustment. Furthermore, Lazarus and Folkman (1984) proposed three forms of primary appraisal, threat, harm/loss, and challenge. Although previous research has identified a relationship between peer-victimization and challenge appraisals (Hunter, Boyle, & Warden, 2004), no studies were found that had studied the role of challenge appraisals in the relationship between peer-victimization and adjustment. Future longitudinal research should measure a broad range of appraisals, examine whether they are mutually influential in a peer-victimization context, and assess whether interactions between appraisals predict adjustment.

Practical Applications

The TMS offers a useful framework for understanding the relationship between peer-victimization and adjustment. As such, it could be used as a basis for developing theoretically sound and evidence-based interventions designed to buffer the impact of peer-victimization on adjustment. Interventions could be developed to focus on specific cognitive appraisals found to play a role in the relationship between peer-victimization and adjustment. Such interventions could employ techniques to teach children and adolescents to employ more positive appraisals in response to victimization. Although limited, evidence suggests that social skills training focusing on appraisals, such as self-efficacy, can buffer the impact of victimization on adjustment (e.g., DeRosier, 2004). To date, the focus of many anti-bullying interventions tends to be on reducing the prevalence of the behaviors (Ttofi, Farrington, Lösel, & Loeber, 2011). Future research should also focus on developing interventions to buffer the negative impact of victimization. The findings of this review highlight that TMS offers a potential framework for the design of such interventions.

Limitations of the Review

The present review only considered studies published in English and in peer-reviewed journals. Valuable studies may have been omitted due to not being written in English, and there may be a publication bias in terms of the studies included in the review. All studies that met the inclusion criteria were included in the review, irrespective of the quality appraisal study. Therefore, the quality for the studies included in the review was diverse. There was heterogeneity in measures used for all variables of interest and as a result quantitative analysis of the findings through

meta-analysis was not possible. This is reflective of the nature of the field, where there is great diversity in the way peer-victimization is measured.

Conclusion

The Transactional Model of Stress (Lazarus & Folkman, 1984) provides an important explanatory framework for understanding the impact of bullying on adjustment. Integrating the TMS within a Socio-Ecological Framework facilitates the exploration of individual and situational factors relevant to peer-victimization, and permits a more multi-dimensional examination of the relationship between victimization and adjustment. Primary and secondary appraisals are identified as factors that can moderate or mediate this relationship, and can help explain individual variation in reactions to peer-victimization. Future research should employ greater use of longitudinal designs to examine a greater number of appraisals, and examine how appraisals change and interact over time in reaction to peer-victimization. Gender differences and differences in the types of victimization experienced should also be examined. Such research would contribute greatly to our understanding of the complex relationship between peer-victimization and adjustment.

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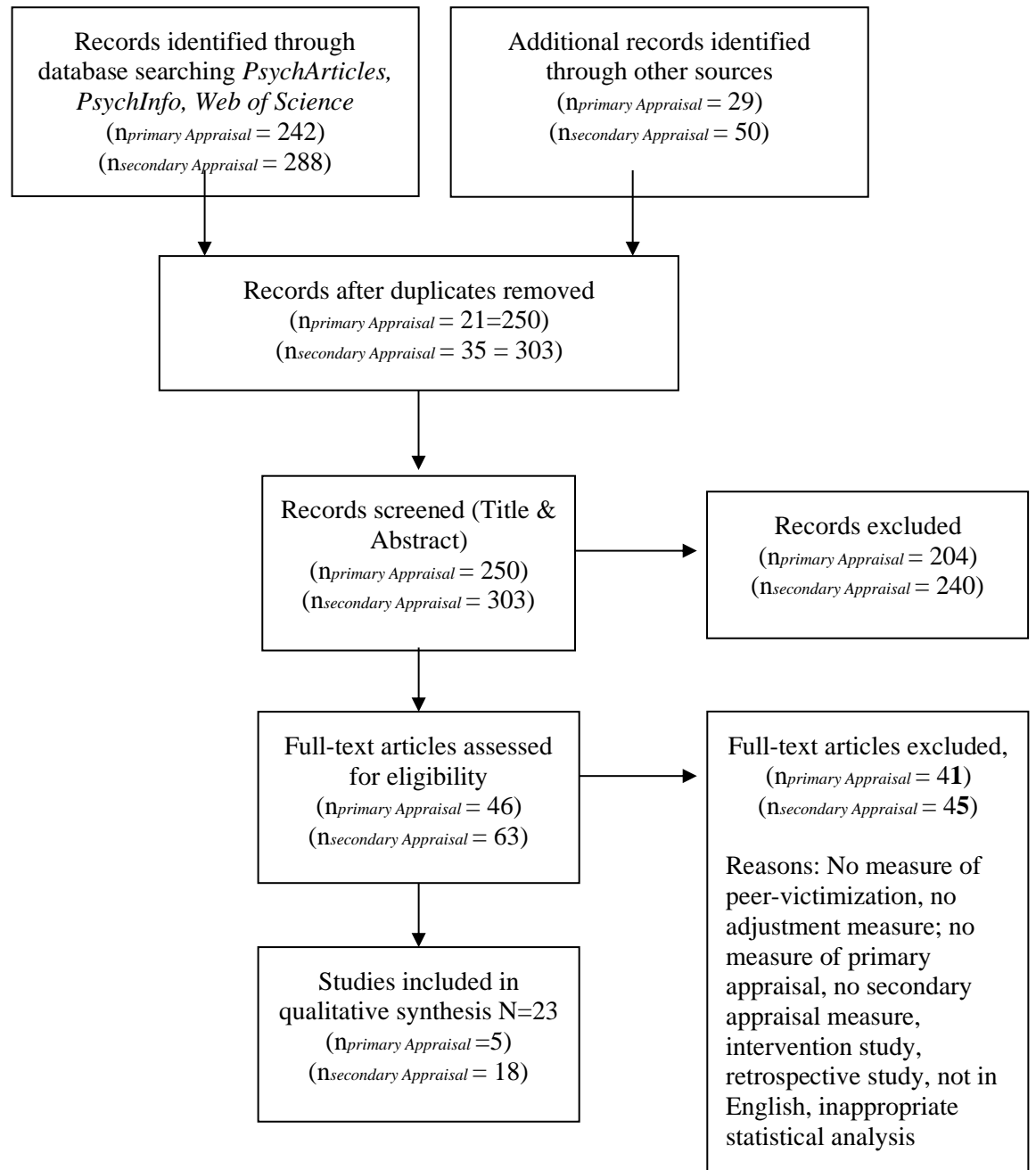


Figure 4.1 PRISMA diagram reporting search results

Table 4.1 Quality Appraisal of the Included Studies

	Study	Quality Appraisal Criterion*								Total
		1	2	3	4	5	6	7	8	
Primary Appraisal	1. Anderson & Hunter (2010)	●	◐	●	●	●	◐	●	●	7
	2. Catterson & Hunter (2010)	●	◐	●	●	●	◐	◐	●	6.5
	3. Gianotta et al. (2012)	◐	◐	●	●	●	◐	◐	●	6
	4. Hunter et al. (2010)	●	◐	●	●	●	◐	●	●	7
	5. Taylor et al. (2013)	●	●	●	●	●	◐	●	●	7.5
Secondary Appraisal	6. Barchia & Bussey (2010)	●		●	●	●	●	◐	●	7
	7. Chen & Wei (2013)	●	●	●	◐	●	●	●	●	7.5
	8. Cheng et al. (2008)	●	◐	●	●	●	●	●	●	7.5
	9. Cuadros & Berger (2016)	●	◐	●	●	●	●	●	●	7.5
	10. Davidson & Demaray (2007)	●	◐	●	●	●	●	●	●	7.5
	11. Hodges et al. (1999)	●	◐	●	◐	●	◐	◐	●	6
	12. Holt & Espelage (2007)	●	◐	●	●	●	●	●	●	6
	13. Lim et al. (2011)	●	●	○	●	●	◐	●	●	7.5
	14. Prinstein et al. (2001)	●	●	●	●	●	●	●	●	8
	15. Pouwelse et al. (2011)	●	◐	●	●	●	◐	○	●	6
	16. Rigby (2000)	●	◐	●	●	●	◐	○	●	6
	17. Rigby & Slee (1999)	●	◐	●	◐	●	◐	○	●	5.5
	18. Rethon et al. (2011)	●	●	●	●	●	◐	●	●	7.5
	19. Seeds et al. (2010)	●	◐	○	●	●	●	◐	●	6
	20. Schmidt & Bagwell (2007)	●	◐	●	●	●	◐	◐	●	6.5
	21. Singh & Bussey (2011)	●	◐	●	●	●	●	●	●	7.5
	22. Tanigawa et al. (2011)	●	◐	●	●	●	●	○	●	6.5
	23. Woods et al. (2009)	●	◐	●	●	●	◐	●	●	7

● Criteria Met ○ Criteria Not Met / Not reported ◐ Criteria Partially Met

*Notes: 1) Was the sample size representative of the target population? 2) Were study participants recruited in an appropriate way? 3) Was the sample size adequate? 4) Were the study subjects and setting described in detail? 5) Is the data analysis conducted with sufficient coverage of the identified sample? 6) Were objective standard criteria used for measurement of the condition? 7) Was the condition measured reliably? 8) Was there appropriate statistical analysis?

Table 4.2 Study Characteristics

	Study	Sample			Design		Measures ²		Analysis					
		Country	N _{Schools}	N _{Sample}	Sex	Ethnicity ¹	Age	Design		Source	Peer-victimization	Appraisal	Adjustment	
Primary Appraisal	1. Anderson & Hunter (2010)	UK	3	146	M=44% F=56%	NR	10-13 years M _{Age} = 11.5 (SD=1.02)	CS	SR	Physical, verbal and indirect victimization,	Threat, blame & control appraisals	Emotional outcome; anger, sadness and fear <i>(single item measures of feeling angry, sad or scared)</i>	Mediation	
	2. Catterson & Hunter (2010)	UK	4	110	M=49.1% F=50.9%	NR	8-12 years M _{Age} =10.08 (SD=1.04)	CS	SR	Total Peer-victimization	Threat, blame & control appraisals	Loneliness	Mediation	
	3. Gianotta et al. (2012)	Italy	1	155	M=47.7% F=52.3%	NR	12-13 years, M _{Age} =12.2 (SD=0.5)	CS	SR	Physical and relational victimization	Threat appraisals: negative self-evaluation negative evaluation by others, loss of relationship	Total threat to self	Internalizing symptoms; depressive symptomatology externalizing symptoms; physical aggression, nonphysical aggression, delinquency	Mediation
	4. Hunter et al. (2010)	UK	NR	925	M=54% F= 46%	26.6%-99.1% of pupils in participating schools were classified as 'minority' pupils.	8-12 years M _{Age} =9.81 (SD=0.91)	CS	SR	Discriminator y & non-discriminator y peer-victimization	Threat & control appraisals	Depression	Mediation	

	Study	Sample			Design			Measures ²		Analysis			
		Country	NSchools	NSample	Sex	Ethnicity ¹	Age	Design	Source		Peer-victimization	Appraisal	Adjustment
Primary Appraisal	5. Taylor et al. (2013)	USA	ComS	326	M=46% F=54%	100% African American	10-16 years M _{Age} =12.1 (SD=1.6)	LS 2 years	I; SR & PR	Physical and relational victimization	Threat appraisals: negative self-evaluation, negative evaluation by others	SR; physical aggression, non-physical aggression and relational aggression, Anxiety & depression PR; behavioral and emotional problems, aggression and anxiety/depression	Mediation
	6. Barchia & Bussey (2010)	Australia	14	T1 1,285 T2 1177	T1 M=46.1% F=53.9% T2 M=46.1% F=53.9%	NR	12-16 years Grades 7 – 10 M _{Age} NR	LS 8 Months	SR	Total peer-victimization	School collective efficacy, self-efficacy to enlist support from friend and parent	Depression	Mediation
	7. Chen & Wei (2013)	Taiwan	12	1,650	M=51.4% F=48.2% Dnr=0.4%	NR	13-16 years Grades 7-9 M _{Age} NR	CS	SR	Total peer-victimization	Perceived social support (peers)	Psychological health (A measure of participants general mental health status).	Mediation
Secondary Appraisal	8. Cheng et al. (2008)	Hong Kong	4	712	M=53.7% F=46.3%	NR	13-18 years M _{Age} =15.7 (SD=2)	CS	SR	Total peer-victimization	Perceived social support (close friend, parents)	Depression	Moderation

Study	Country	NSchools	NSample	Sample		Age	Design		Peer-victimization	Measures ²		Analysis	
				Sex	Ethnicity ¹		Design	Source		Appraisal	Adjustment		
Secondary Appraisal	9. Cuadros & Berger (2016)	Chile	4	614	M=49.9% F=50.1%	NR	Grades 4-6 M _{Age} NR	LS 1 years	SR	Total peer-victimization	Friendship quality (affection: <i>degree of affection in a friendship</i> , disclosure: <i>disclosure of personal information</i> , perceived support: <i>support and care and acceptance in a friendship</i> , closeness: <i>degree of closeness</i>)	Socioemotional wellbeing	Moderation
	10. Davidson & Demaray (2007)	USA	1	355	M=47% F=53%	Caucasian =97%, Hispanic=2%, African American=0.8%, Asian American=0.3%	11-14 years Grades 6-8 M _{Age} NR	CS	SR	Total peer-victimization	Perceived social support (parents, teacher, classmates, school, friend)	Externalizing distress, internalizing distress	Moderation

Study	Sample			Design			Measures ²		Analysis				
	Country	NSchools	NSample	Sex	Ethnicity ¹	Age	Design	Source		Peer-victimization	Appraisal	Adjustment	
Secondary Appraisal	11. Hodges et al. (1999)	Canada (French-Canadian)	7	T1 533 T2 393	T1 M=51.4% F=48.6% T2 M=47.8% F=52.2%	NR	T1 M _{Age} =10 years 7 months	LS 1 year	PN, SR & TR	Total peer-victimization	Friendship quality (Protection: extent to which friends would help and protect them, and companionship; indication of time spent together. Security: feeling safe in friendship, and conflict; degree of conflict in a friendship)	Behavioral problems	Moderation
	12. Holt & Espelage (2007)	USA	2	784	M=47% F=53%	White, Non-Hispanic=52.9%, African American = 26.9%; 34.3% Hispanic =5.7%, Asian = 1.3%, Native American = 1.1% "Other" = 4.6%	12-19 years M _{Age} = 14.51 (SD=1.97)	CS	SR	Total peer-victimization	Perceived social support (parents, friend)	Anxiety, depression	Moderation

	Study	Sample			Design			Measures ²		Analysis			
		Country	NSchools	NSample	Sex	Ethnicity ¹	Age	Design	Source		Peer-victimization	Appraisal	Adjustment
Secondary Appraisal	13. Lim et al. (2011)	USA	ComS	96	M=46.9% F=53.1%	Caucasian=51.0%, African American=29.2%, Hispanic=4.2%, Native American=5.2%, bi- or multiracial=3.1%, other or unknown=7.3%	8-17 years M _{Age} = 12.8 (SD=1.8)	CS	SR	Total peer-victimization	Perceived social support (parents, friend)	Depression	Moderation
	14. Prinstein et al. (2001)	USA	NR	566	M=44.7% F=55.3%	Caucasian=21.8%, Hispanic=60.3%, African American=10.6%, 7.3% other or mixed ethnicity mixed ethnicity)	14-17 years Grades 9-12 M _{Age} NR	CS	SR	OA, RA, OV, RV	Close friend support (Friend)	Depression, loneliness, self-esteem, externalising symptoms,	Moderation
	15. Pouwelse et al. (2011)	Netherlands	10	606	M=52.5% F=47.5%	61.1% Dutch origin=61.1%, Surinam or Antillean origin=9.7%, Turkish origin=11.1%, Moroccan origin=9.6%, other origins=8.5%	9-13 years M _{Age} NR	CS	SR	Total peer-victimization	Perceived social support (Global)	Depression	Moderation & Mediation
	16. Rigby (2000)	Australia	3	845	M=53.3% F=46.7%	NR	12-16 years M _{Age} NR	CS	SR	PTB & TyPV (MDS)	Perceived social support (Global)	Somatic complaints, anxiety, depression, social dysfunction	Moderation

	Study	Country		Sample			Design			Measures ²		Analysis	
		Country	N _{Schools}	N _{Sample}	Sex	Ethnicity ₁	Age	Design	Source	Peer-victimization	Appraisal		Adjustment
Secondary Appraisal	17. Rigby & Slee, (1999)	Australia	Study 1= 2 Study 2 = 3	S1 1,103 S2 845	S1 M=542 F=561 S2 M=450 F=395	NR	12-18 years S2 12-16 years M _{Age} NR	CS	S1 SR S2 PN & SR	Total peer-victimization	Perceived social support (Global)	Suicide Ideation	Moderation
	18. Rethon et al. (2011)	UK	28	2,790	M=48.6% F=51.4%	White =27%, Bangladeshi=25.1%, Black=20.9%, Indian=9.1%, Pakistani=6.7%, Other ethnic origin=11.2%	T1 M _{Age} NR Years 7 and 9 11-14 years	CS	SR	Total peer-victimization	Perceived social support (parents, friend)	Depression	Moderation
	19. Schmidt & Bagwell (2007)	USA	3	670	M=53% F=47%	Hispanic=54%, White=34%, 12% African American=12%	8-10 years M _{Age} =9.22 (SD=0.91)	CS	SR	OV & PV	Friendship quality (closeness: <i>the sense of attachment in the friendship, companionship: extent friends offer affection and intimacy, security: level of trust in the friendship, help: the help offered in a friendship to manage problems</i>)	Depression & anxiety; social concerns (<i>participants' worries about themselves in social settings</i>) & worry (<i>extent to which participants internalise their anxiety</i>)	Moderation

	Study	Sample			Design			Measures ²		Analysis			
		Country	NSchools	NSample	Sex	Ethnicity ¹	Age	Design	Source		Peer-victimization	Appraisal	Adjustment
Secondary Appraisal	20. Seeds et al. (2010)	Canada	NR	101	M=36.6% F=63.4%	European ancestry=96%	13-18 years M _{Age} = 15.51 (SD=1.27)	CS	I, SR	Peer perpetrated bullying	Perceived social support (Global)	Depression	Mediation
	21. Singh & Bussey (2011)	Australia	18	2,161	M=50.4% F=49.6%	White=63%, Middle-Eastern=17%, Asian=10%, Other ethnic groups=10%.	10-15 years M _{Age} = 12.74 (SD=NR)	CS	SR & PN	Total peer-victimization	Self-efficacy for: avoiding aggressive behavior, proactive behavior, victim-role disengagement, and avoiding self-blame.	Social anxiety, depression, externalising problems	Mediation
	22. Tanigawa et al. (2011)	USA	3	544	M=43.8% F=56.2%	Hispanic/Latino =40%, White=29%, Multiethnic=20%; Asian=5%, Black/African American=2%, American Indian or Alaskan Native=<1%), Other =<1%.	11-13 years 7 th & 8 th grades M _{Age} NR	CS	SR	Total peer-victimization	Perceived social support (parents, teachers, classmates and friend)	Depression	Moderation

Study	Sample			Design		Measures ²		Analysis				
	Country	NSchools	N _{Sample}	Sex	Ethnicity ¹	Age	Design		Source	Peer-victimization	Appraisal	Adjustment
23. Woods et al. (2009)	UK	1	401	M=47% F=53%	Black=42%, Asian=25%, White=23%, Mixed=8%, Other=1.7%	11-16 years M _{Age} NR	CS	SR	Direct & relational victimization	Friendship quality (closeness: <i>the sense of attachment in the friendship, conflict: the degree of conflict in a friendship, companionship: extent friends offer affection and intimacy, security level of trust in the friendship, help: the help offered in a friendship to manage problems</i>)	Loneliness and social dissatisfaction	Moderation

Secondary Appraisal

Notes:

NR = Not Reported; NA = Not Applicable; ComS = Community Sample; S = Study; T = Time point; CS = Cross Sectional Study; LS = Longitudinal Study; SR = Self-Report; I = Interview; PR = Parent Report; PN = Peer Nomination; TN = Teacher Nomination

¹Ethnicity: The categories presented here are taken directly from the studies.

²Measures: only the measures relevant to the inclusion criteria are summarised here

CHAPTER 5 AIM OF STUDIES TWO AND THREE

The systematic review reported in Chapter 4 highlights a range of cognitive appraisals that play a role in the relationship between peer-victimisation and poor mental health. These include threat, challenge, and control appraisals, coping self-efficacy, and perceived social support (both global and domain-specific). The review highlights how these different cognitive appraisals may function differently in the relationship between peer-victimisation and poor mental health. Appraisals such as threat, control, and blame appraisals, alongside coping self-efficacy, and global perceived social support have typically been tested as mediators of this relationship. Such mediating effects suggest causal relationships between peer-victimisation, appraisals and poor mental health. Domain-specific perceived support, however, was typically tested as a moderator variable. In line with the stress-buffering hypothesis (Cohen & Wills, 1985) this suggests that such support may describe a characteristic of individuals (those with and without such support) and one which buffers the relationship between peer-victimisation and poor mental health.

The findings of the systematic review lend further support to the TMS (Lazarus & Folkman, 1984) as one possible theoretical framework for understanding individual differences in the relationship between peer-victimisation and poor mental health. From a socio-ecological perspective (Bronfenbrenner, 1979; Espelage & Swearer, 2003), cognitive appraisals of threat, challenge, control, blame, coping self-efficacy, and global perceived social support are from the individual level of an adolescent's socio-ecology. Whereas, from a microsystem level, measures of domain-specific perceived social support reflect an evaluation of support available from individuals within this system. Therefore, the TMS (Lazarus & Folkman, 1984)

proposes the theoretical process through which peer-victimisation is associated with poor mental health, while the socio-ecological approach (Bronfenbrenner, 1979) provides the framework for studying the social context in which this process occurs. Therefore, the aim of studies 2 and 3 was to examine the role of cognitive appraisals from a socio-ecological perspective in the relationship between peer-victimisation and poor mental health.

Inconsistencies in the findings of research examining the role of domain-specific social support are also highlighted in the systematic review. Perceived social support from parents, teachers, and close friends/ peers were the most frequently researched forms of support, yet gender differences in the buffering role of this support were reported. Some studies found some types of support to be protective (e.g., Davidson & Demaray, 2007), whereas others reported that higher levels of support exacerbated the relationship between peer-victimisation and mental health (e.g., Holt & Espelage, 2007). Given the inconsistencies reported in the literature, the aim of study two was to examine the role of domain-specific forms of perceived social support in the relationship between being bullied and poor mental health.

Findings from the systematic review also highlighted a reliance on cross-sectional data for testing the relationship between peer-victimisation, cognitive appraisals, and poor mental health, which poses challenges for testing mediating relationships (Maxwell & Cole, 2007). Furthermore, research has tended to focus on a small number of cognitive appraisals. Studying a greater number of appraisals in the same study, will enable us to identify which appraisals are more strongly associated with poor mental health (Bokhorst et al., 2009). Therefore, the aim of

study three was to examine the role of multiple cognitive appraisals in the longitudinal relationship between peer-victimisation, and mental health.

CHAPTER 6 METHOD

Studies two (Noret, Hunter, & Rasmussen, 2020) and three (Noret, Hunter, & Rasmussen, under review) are presented in the following chapters in journal article format. Here, the broader methodological decisions that underpin both studies are discussed. This includes the importance of, and adherence to, the principles of open science, the measurement of peer-victimisation and experiences of being bullied, and the ethical issues associated with the two projects.

Open Science

Open science offers several strategies that can be employed to increase the transparency, reproducibility, and openness of the research process (Frankenhuis & Nettle, 2018). Open Science is an umbrella term capturing a range of research practices which have developed in response to concerns regarding the trustworthiness of research in the social sciences (Frankenhuis & Nettle, 2018). From a research perspective, trustworthiness is defined as the extent to which research findings reported in the literature are reliable and valid (Cook, Lloyd, Mellor, Nosek, & Therrien 2018). It has long been acknowledged that there is a bias toward statistically significant findings in the research literature (Renkewitz & Heene, 2019). This has led to positively skewed effects in the literature, where statistical effects are possibly over-estimated (Cook et al., 2018). This bias towards significant findings fuels a perception that non-significant findings will not be published (the ‘file drawer problem’: Rosenthal, 1979). There is also an incentive culture inherent in academia, where significant results are more likely to be published and where more publications relate to career progression (Munafò et al., 2017). Taken together, the file drawer problem and the incentive culture fuel a perception that achieving

statistical significance in a research study is more important than the quality of the research process (Frankenhuis & Nettle, 2018). This can result in some researchers employing poor research practices to achieve a statistically significant finding.

Problematic research practices can occur at all stages of the research process (Munafò et al., 2017). Such practices include, but are not limited to: p-hacking (recoding and re-analysing data in different ways in an attempt to find a significant result); hypothesising after the result is known (HARKING); and conducting studies with low statistical power (Chambers, Feredoes, Muthukumaraswamy & Etchells, 2014). Such practices can increase the rate of false positives in the literature and can help explain why some studies do not replicate (Munafò et al., 2017; Yamada, 2018). In response to these challenges, open science aims to improve science by challenging the incentive culture to instead focus on good quality research design and data rather than statistically significant results (Frankenhuis & Nettle, 2018). The open science movement promotes a range of practices to improve the quality, transparency, and trustworthiness of research designs and data. These practices include openly sharing publications and data, encouraging replication studies, and the pre-registration of research designs (Munafò et al., 2017).

Open publication/ open data. Ensuring research publications are openly available by providing access to pre-print versions of papers or paying for publishers to make articles openly available, is now a widely adopted practice (Concannon, Costello & Farrelly, 2019). Ensuring papers are openly available ensures that researchers and practitioners have easy access to the latest research, which can help researchers increase the impact of their work (Concannon et al., 2019). Making data and data analysis scripts openly available is also encouraged (Munafò et al., 2017).

Open data can enable further data analysis (e.g., meta-analysis), and facilitate replication (Munafò et al., 2017; Nosek & Bar-Anan, 2012). It also enables the collation of larger data sets, and additional data analysis which in turn can identify errors. Alongside ensuring publications and data are openly available, the open science movement is actively promoting the use of pre-registration of research studies.

Pre-registration. Pre-registration requires researchers to clearly set out their hypotheses, research design, and data analysis approach, in advance of any data collection (van't veer & Giner-Sorolla, 2016). These plans are then registered on an online repository (e.g., the Open Science Framework, and AsPredicted websites) which is then time-stamped as a record of the planned research project (van't veer & Giner-Sorolla, 2016). There are two forms of pre-registration: reviewed and unreviewed (van't veer & Giner-Sorolla, 2016). As the research design is registered in advance, this can reduce the degrees of freedom in the research process (the decisions and changes researchers may make) (Frankhuis & Nettle, 2018). The aim of the process is to focus on the quality of the research process rather than the outcome (Frankhuis & Nettle, 2018). Some journals are now actively encouraging the use of pre-registration as a means of increasing the accountability and transparency of published research (e.g., the Journal of Child Psychology and Psychiatry, Asarnow et al., 2018).

Pre-registration requires researchers to state the hypotheses, method, and planned data analysis in advance of any data collection (van't veer & Giner-Sorolla, 2016). When outlining the hypotheses being tested, researchers are required to outline the background and theoretical underpinning of the study. This reflects the

importance of theoretically led hypotheses (van't veer & Giner-Sorolla, 2016). Like psychological research more broadly, research into peer-victimisation typically uses inferential statistics to test hypotheses. Inferential statistics are more appropriately used in confirmatory rather than in more exploratory designs (Wagenmakers, Wetzels, Borsboom, van der Maas, & Kievit, 2012). Requiring researchers to state their hypotheses in advance of any data collection adheres to the confirmatory nature of inferential statistics, while also reducing the risk of HARKING (van't veer & Giner-Sorolla, 2016).

Following a description of the hypotheses, researchers are also required to outline the details of the planned method. This includes an explanation of: the design of the study; the sample; the materials and measures; and the procedure. The desired sample size should also be justified, for example, by using a priori power analysis (Shrout & Rodgers, 2018). Ensuring the study has enough participants is an attempt to address concerns regarding current research in psychology being underpowered (Munafò et al., 2017). Statistical power reflects the power in a statistical test to find an effect if there is one to find (Cohen, 1988). Low statistical power is problematic as it increases the chance of making a type II error (falsely rejecting the null hypothesis). Furthermore, if a statistically significant effect is found under the conditions of low statistical power, the size of the effect is likely to be exaggerated due to a lower positive predictive value (the probability of a statistically significant effect being genuine) (Button et al., 2013). Underpowered studies contribute to the elevated effects found in the published literature and may explain why some research findings do not replicate (Munafò et al., 2017).

Concerns have been raised surrounding the sample sizes used in research on peer-victimisation. For example, in their systematic review of psychometric studies of measures of peer-victimisation, Vessey, Strout, DiFazio, and Walker (2014) found many of the included studies did not include a justification for the sample size. In their discussion on research practices in peer-victimisation, Volk et al. (2017) suggest that those conducting such research should adhere to APA guidelines and employ the use of power analysis. They also highlight that experiences of peer-victimisation are typically of a low frequency and positively skewed, this should also be considered when determining the desired sample size. The final stage of the pre-registration process requires researchers to consider and detail all steps of the data analysis process. The data analysis plan should be outlined in terms of what hypotheses are tested using what analyses, and any plans for follow up analysis (e.g., post hoc testing). This ensures the analysis plan is outlined in full to reduce the risk of p-hacking (van't veer & Giner-Sorolla, 2016).

Pre-registration offers one possible approach for improving the validity of research into peer-victimisation. In their review of research into peer-victimisation, Volk et al. (2017) propose a “bullying research checklist” (p. 41) to improve the quality, reliability, and generalisability of such research. They suggest that researchers should 1) make their definition of peer-victimisation or bullying explicit at the start of the research project. Following this, researchers should 2) set out the theoretical underpinnings for their hypotheses, before 3) using this theoretical explanation and definition of bullying or peer-victimisation to inform the decision of what measure(s) to include in their study. Finally, researchers should 4) design and implement an appropriate research design, which Volk et al. (2017) state should

ideally be longitudinal, before 5) reflecting upon their study and discussing important theoretical strengths and weaknesses of the approach. Such a checklist highlights the importance of setting out in advance the definition of bullying or peer-victimisation, alongside the theoretical underpinnings for the hypotheses. This approach could be developed further by also supplementing the use of such a checklist with a greater adherence to the principles of open science, particularly pre-registration. Adhering to the principles of open science has the potential to improve the quality of peer-victimisation research (Hunter, Noret, & Boyle, in press). Therefore, studies two and three in the current thesis followed the steps outlined in Volk et al.'s (2017) checklist. The data and analysis scripts from both studies will be made openly available on a project page on the Open Science Framework and, in addition, study three will be pre-registered in advance of any data collection (see appendix iv for a copy of the pre-registration form).

Measuring bullying and peer-victimisation

Volk et al. (2017) suggest that the choice of measure should be informed by the theoretical underpinnings of the study and the researcher's chosen definition of bullying or peer-victimisation. Bullying is typically defined in line with Olweus' (1993) definition as a form of aggressive behaviour which is experienced repeatedly and over-time, and which occurs in a relationship where there is an imbalance of power. Peer-victimisation, however, is typically defined as frequently experienced peer-related aggressive behaviour (Hunter et al., 2007; Söderberg & Björkqvist, 2020). Alongside the definitional debates surrounding these behaviours, presented in chapter 1, there remains considerable debate surrounding how best to measure experiences of being bullied and experiences of peer-victimisation. These debates

typically focus on: how best to identify whether someone has been ‘bullied’, particularly the threshold of frequency of experience that constitutes being bullied; how best to measure a ‘power imbalance’; and whether a behavioural or definitional approach should be taken when measuring bullying and peer-victimisation.

Alongside the debates surrounding the measurement of the different components of bullying, there are also questions surrounding the psychometric properties of existing measures of both bullying and peer-victimisation (Vessey et al., 2014).

Definitional or behavioural approach to measuring bullying. Measures of peer-victimisation and bullying typically vary based on whether they employ a definitional or a behavioural approach. Definitional measures typically involve presenting participants with a definition of bullying which captures and explains the importance of the different characteristics of bullying, before asking participants how often they have experienced bullying in a given time frame. The Olweus Bully/Victim Questionnaire (OBVQ, Olweus 1993) is an example of a definitional measure. It includes the following definition:

When we talk about bullying, these things happen **repeatedly**, and it is **difficult for the student being bullied to defend himself or herself**. We also call it bullying, when a student is teased repeatedly in a mean and hurtful way. But we **don’t call it bullying** when the teasing is done in a friendly and playful way. Also, it is **not bullying** when two students of about equal strength or power argue or fight.

Participants are then asked to report how often they have been bullied in the “past couple of months”. The OBVQ, therefore, provides participants with some guidance

on what is meant by bullying by including reference to a power imbalance, intentionality, and frequency of the behaviour.

The imbalance of power can be based on many different characteristics within the peer-group, for example, based on popularity, ability, and physical strength (Cornell & Limber, 2015). As such, developing inclusive measures of ‘power imbalance’ can be challenging. Definitional measures attempt to address this challenge by providing participants with an explanation of what is meant by bullying, and by an imbalance of power, to make this explicit to participants. The phrasing of “equal strength or power” provided in the OBVQ for example, is open to subjective interpretation, and whether participants interpret and understand this in a consistent way is questionable (Volk et al., 2017).

Due to the potential for subjective interpretation when defining bullying, behavioural measures of bullying and peer-victimisation typically omit any definition and instead present a list of aggressive behaviours and ask participants to rate how often they had experienced each type of behaviour. For example, the Illinois Bully Scale (Espelage & Holt, 2001) examines participants’ self-reports of either experiencing and/or perpetrating bullying. Participants are asked, “For each of the following questions, choose how many times you did this activity or how many times these things happened to you in the LAST 30 DAYS.” Participants are then presented with 18 different items and rate each one on how often they have experienced/ perpetrated the behaviour. Although considered a bully scale, there is no reference to intentionality or power imbalance. As such, the scale measures peer-victimisation (which makes no reference to power imbalance and intent) rather than experiences of being bullied. However, this distinction is not clear in the research

literature, as some authors claim to be measuring experiences of being bullied when they are actually measuring experiences of peer-victimisation. For example, Van Ryzin and Roseth (2019) aimed to examine the relationship between co-operative learning, peer-relationships, empathy, and experiences of being bullied yet use the Illinois Bullying Scale (Espelage & Holt, 2001) which, as discussed, focuses on the behaviours experienced, and does not capture the core components of intention to harm and power imbalance. To try and address this problem, Volk et al. (2017) suggest that researchers should make explicit their definition of peer-victimisation or bullying and ensure that their measure aligns to the definition employed.

Repetition. Olweus' (1993) definition included the notion of repetition to distinguish bullying from other aggressive behaviour. Irrespective of whether a definitional or behavioural measure is used, there is a lack of consensus regarding how repetition should be measured. Alongside arguments that suggest single acts of aggression can be defined as bullying (Arora, 1996; Tattum, 1997), bullying measures vary in terms of the reference period provided, and the frequency scales and cut off points used to capture repetition (Solberg & Olweus, 2003). Regarding the reference period provided, measures vary in terms of whether they measure experiences of being bullied that have occurred: in the past calendar year (e.g., Mynard & Joseph, 2000); since the start of the school year (e.g., Wolke, Woods, Bloomfield, & Karstadt, 2000); in the past month (e.g., Espelage, & Holt, 2001); or the past couple of months (e.g., Olweus 1993). Decisions surrounding the frequency criteria included in measures appear to be guided by the ease of recall for pupils. In their review of the Olweus Bullying/ Victimisation Questionnaire (OBVQ), Solberg and Olweus (2003) argued that the inclusion of a timeframe of “a couple of months”

provides a clear time frame which is a simple and natural memory reference for pupils. Similarly, Felix, Sharkey, Green, Furlong, and Tanigawa (2011) suggested that the accuracy of recall diminishes with time, and therefore they included a 30-day time frame in their measure. Yet such decisions do not appear to be based on any empirical evidence regarding the stability and accuracy of recall of experiences of being bullied over different time frames among children and young people of different ages. The disparity in the reference period provided makes it difficult to compare research findings (Volk et al., 2017).

Alongside variations in the reference period provided, measures include different frequency response scales, and cut-off points for classifying participants as *victims* (Volk et al., 2014). Solberg and Olweus (2003) examined the cut-off point for defining adolescents as victims or non-victims of bullying, based on their single item measure of experiencing bullying. In their study of 5,171 adolescents aged 11 to 15 years, participants were categorised as either victims or not victims of bullying based on their reported frequency of experiences of being bullied on their single item measure. Those who reported being bullied “2 or three times a month” or more were coded as victims, and those who reported being bullied “only once or twice” or “never” were coded as non-victims. Victims of bullying reported significantly poorer mental health alongside higher scores on social disintegration and negative self-evaluations compared to non-victims. However, those who reported being bullied “only once or twice” reported significantly poorer mental health alongside higher scores on social disintegration and negative self-evaluations compared to those who reported “never” being bullied. Based on these findings, Solberg and Olweus (2003) argue that while those who reported being bullied “only once or twice” reported

significantly more negative outcomes than those who reported “never” being bullied, they should not be categorised as *victims* of bullying. They argued that this frequency of experience does not conform with Olweus (1993) definition of bullying being experienced repeatedly and overtime. Furthermore, they suggest that those who reported being bullied “only once or twice” may be confused over whether their behaviours constitute bullying or not. Based on the findings of their analysis Solberg and Olweus (2003) argue that the cut-off of “2-3 times a month” should be used to identify *victims* of bullying.

Although Solberg and Olweus’ (2003) findings are based on the analysis of a single item ordinal scale, the cut-off point of “2 or three times a month” has also been applied to continuous scales. For example, Felix et al. (2011) also proposed using this cut-off point for identifying *victims* of bullying when using their seven-item scale California bully victimisation scale. However, this categorisation is problematic for several reasons. To date there is no evidence for applying the cut-off of “2-3 times a month” to continuous scales (Hunt, Peters & Rapee, 2012). Furthermore, statistically categorising continuous scales, as in the method employed by Felix et al. (2011), should be avoided as such categorisation can lead to a loss of variance and a loss of statistical power in the analysis (Taylor, West, & Aiken, 2006). Such categorisation can also lead to an underestimate in any differences in the outcome variable (Altman & Royston, 2006).

Rather than categorising participants as *victims* or *non-victims*, experiences of being bullied should be viewed on a continuum (Hunt et al., 2012), reflecting more of a dose-response relationship. Such a relationship suggests that more frequent exposure to bullying behaviours over time is associated with poorer mental health

(Evans, Smokowski, & Cotter, 2014), but also recognises that low frequency experiences can be associated with negative outcomes. Therefore, for the purposes of studies 2 and 3, scales will be used that produce continuous scores of experiences of peer-victimisation or bullying, rather than categorising participants as *victims* or *non-victims*.

The psychometric properties of measures of bullying and peer-victimisation. Some have suggested that while measures of bullying and peer-victimisation may be reliable (Volk et al., 2017), the validity of measures is often less well established (e.g., Casper et al., 2015; Volk et al., 2017). In their systematic review, Vessey et al. (2014) examined the psychometric properties of 31 different measures. Their quality assessment of the various measures captured different aspects of reliability and validity. Of the 31 included measures, only six scales achieved a quality rating of over 75%. Vessey et al. (2014) suggested that many of the scales could be considered to be in the early stages of development and lacked sufficient evidence on the validity and invariance of the measures. Such a limitation to current measurement challenges the validity of research on bullying and peer-victimisation. Without well-validated measures it is difficult to identify and compare prevalence rates, and evaluate anti-bullying interventions (Volk et al., 2017).

Measuring bullying in adolescents.

The data presented in study two are based on the analysis of a secondary data set. The data were collected as part of a local authority wide school survey of bullying and wellbeing in adolescents. The use of secondary data facilitated the analysis of a large data set (Greenhoot, & Dowsett, 2012), but meant that the analysis of these data was, was driven by the data available (Cheng & Phillips, 2014). The

questionnaire for the study was developed in consultation with local authority representatives, teachers, representation from the police, and with input from the local youth council. The bullying section of the questionnaire included a version of the Olweus Bullying Victimization Questionnaire (Olweus, 1993). The scale was amended to reflect how bullying was defined in local schools, viz: “*Being bullied means that you have been intentionally hurt (meaning someone did it on purpose) and that you were hurt by one person or a group of people more than once*”. This amended scale did not refer to a power imbalance but included reference to bullying as a repeated experience where there is an intention to harm the person being bullied. Pupils were asked how often they had experienced each of the behaviours in the past month on a five-point likert scale, ranging from “*This hasn’t happened to me in the past month*” (1) to “*At least once a day*” (5). As reported in study two, the factor structure of the questionnaire was examined. A two-factor structure was identified, with items clustering around a bullying factor and a cyberbullying factor.

The Personal Experiences Checklist (Hunt, Peters, & Rapee, 2012).

In study three, the short version of the personal experiences checklist (PECK-SF, Hunt et al., 2012; Prinz, Costa, Chervonsky, & Hunt, 2019) was used to measure experiences of peer-victimisation. The full 32 item version of the PECK is a well-validated measure of peer-victimisation with items based on a literature search on bullying, discussion with experts in the field, and responses to open questions from previous survey work (Hunt et al., 2012). The scale was developed with an initial sample of 647 children and adolescents. An additional sample of 247 children and adolescents completed the scale to provide additional data for the validation of the scale. The final scale captures verbal-relational, physical, and cyberbullying

behaviours, alongside behaviours perpetrated because of culture. Participants are asked how often they have experienced each of the behaviours in the past month, where responses are rated on a five-point likert scale, ranging from “never” to “most days”. The scale does not include a definition of bullying and does not ask about intent, repetition, or power imbalance. As such, the scale is a measure of peer-victimisation rather than bullying (Prinz et al., 2019).

Hunt et al. (2012) report that the internal consistency of the scales was excellent ($\alpha=.91$ for verbal-relational bullying, $\alpha=.90$ for cyberbullying, $\alpha=.91$ for physical bullying, and $\alpha=.78$ for bullying based on culture). The four-factor structure was supported in both exploratory and confirmatory factor analysis. Test-retest reliability after two weeks was acceptable ($r = .75$ for relational-verbal bullying, $r = .86$ for cyberbullying, $r = .61$ for physical bullying, $r = .77$ for bullying based on culture, and $r = .79$ for the total PECK scale). Therefore, findings from the initial validation of the PECK, suggest it is a valid and reliable measure of peer-victimisation (Hunt et al., 2012).

The short version of the personal experiences checklist (PECK-SF) was developed to provide a quick assessment of experiences of peer-victimisation with strong psychometric properties (Prinz et al., 2019). The PECK-SF was developed and validated on a pooled sample of children and adolescents from two studies (N=1,040). Participants completed the original item PECK rated on a five-point likert scale ranging from “never” to “most days”. The final 14 items were identified based on the content of the scales and the size of the discrimination parameters calculated through the CFA. The initial analysis identified problematic item thresholds (distance between points on the ordinal response scale), particularly with

the ‘most days’ and ‘everyday’ categories. Therefore, these final points on the likert scale were combined into a single category (most days / every day), changing the scale from a five-point to a four-point likert scale. The additional analyses were calculated on the recoded data (Prinz et al., 2019).

Regarding the reliability and validity of the scales, results of the confirmatory factor analysis (CFA) supported the factor structure of the PECK-SF. The reliability of the total PECK-SF scale was good ($\alpha=.84$), however, the reliability of the four subscales was inconsistent. Therefore, the analysis supported the use of the PECK-SF to provide a single, total score of peer-victimisation only. In this thesis, the aim of study three is to examine the longitudinal relationship between peer-victimisation, cognitive appraisals, and depressive symptomology. As multiple measures were planned for inclusion in the scale, across three time points, a short and well-validated scale was required. Therefore, the PECK-SF was included as the survey tool to assess peer-victimisation.

Invariance testing of the PECK-SF over time. Invariance testing (or equivalence testing) examines whether the psychometric properties of a scale are equivalent across conditions (e.g., over time points) (Putnick & Bornstein, 2016). Ensuring that a scale is invariant suggests that the scale is measuring the same thing across conditions. Therefore, if a scale is invariant in a longitudinal design, then any observed variation in participants’ scale scores are considered to be genuine rather than psychometric artefacts of the scale (Cheung & Rensvold, 2002). Therefore, as study three involves analysing peer-victimisation data over time, the PECK-SF data were analysed to ensure they were invariant across time points.

Bowen & Masa, (2015) and Xing & Hall (2015) outline the steps that should be taken when testing for invariance. First, a confirmatory factor analysis (CFA) is conducted to test whether a single factor is a good fit to the data. If the CFA indicates a good fit and confirms the factor structure, the second step is to test a configural model, where the pattern of factor loadings is tested to examine whether they are the same across time. Following this step, the data are then assessed for weak (metric) invariance to test whether the factor loadings are statistically equivalent over time. The next step is to assess for strong (scalar) invariance, and test whether the thresholds are equivalent over time. There exists an additional test of strict invariance, where residual variances are constrained to be equal. In applied social research, this final step is viewed as optional as typically it does not provide any additional information regarding the scale (Bowen & Masa, 2015; Xing & Hall, 2015). Therefore, this final step was not executed in the current thesis.

Invariance is determined by analysing changes in fit indices at each of the different steps. Ideally, chi-square change tests should be non-significant. However, chi-square tests are sensitive to sample size and as such other fit indices may be more important (Xing & Hall, 2015). The change in the comparative fit index (CFI) at each step should be less than 0.01 and the change in RMSEA should be below 0.015 to support invariance (Xing & Hall, 2015). Finally, the root mean square error of approximation (RMSEA) point estimate of the preceding model should be included in the 90% confidence intervals of the new model.

In the current study, the invariance testing was based on pupils who participated in study three and who completed the survey at time 1 (N=744) and two months later at time 3 (N=333, 44.76%). Pupils were drawn from four secondary

schools in England and Scotland. At time 1, of these participants 342 (46%) were male, 366 (49.2%) were female, 28 (3.8%) reported that they preferred not to say, and 8 (1.1%) did not answer the question. Participants were aged between 11 and 14 years old (Mean age at time 1 = 12.72; SD = 0.84). Missing data were treated using Full Information Likelihood Testing (FIML).

All analyses were calculated using MPLUS Version 8.1. Scale items were treated as categorical (ordinal data), therefore, all paths were estimated using the weighted least square mean and variance adjusted (WLSMV) estimator. The invariance testing for the time one data could not be calculated due to problems with the thresholds for items 6, 8, and 9. Like Prinz et al. (2019), there was a low frequency of responses for the final points of the likert scale (Most days [4] and Everyday [5]), see Table 6.1. Therefore, consistent with the approach taken by Prinz et al. (2019), the final points on the likert scale were combined to create a four-point likert scale ranging from never to most days/ everyday.

Table 6.1 Distribution of responses to the PECK-SF at time 1

	Never	Rarely	Sometimes	Most days	Everyday
1. The other kids ignore me on purpose.	335 (46%)	254 (34.8%)	112 (15.4%)	21 (2.9%)	7 (1%)
2. The other kids make fun of my language.	636 (87.4%)	47 (6.5%)	28 (3.8%)	10 (1.4%)	7 (1%)
3. The other kids tease me about things that aren't true.	330 (45.3%)	216 (29.7%)	121 (16.6%)	40 (5.5%)	21 (2.9%)
4. The other kids threaten me over the phone.	639 (87.8%)	56 (7.7%)	22 (3%)	5 (0.7%)	6 (0.8%)
5. Other kids tell people not to hang around with me.	569 (78.3%)	97 (13.3%)	44 (6.1%)	11 (1.5%)	6 (0.8%)
6. Other kids won't talk to me because of where I'm from.	694 (95.3%)	23 (3.2%)	4 (0.5%)	3 (0.4%)	4 (0.5%)
7. Other kids say nasty things to me by texting.	540 (74.1%)	118 (16.2%)	56 (7.7%)	9 (1.2%)	6 (0.8%)
8. Other kids tell people to hit me.	651 (89.7%)	47 (6.5%)	18 (2.5%)	4 (0.6%)	6 (0.8%)
9. Other kids send me nasty e-mails.	690 (94.9%)	17 (2.3%)	13 (1.8%)	3 (0.4%)	4 (0.6%)
10. Other kids say mean things behind my back.	324 (44.2%)	193 (26.6%)	133 (18.3%)	45 (0.6%)	31 (0.4%)
11. Other kids shove me.	512 (70.2%)	137 (18.8%)	46 (6.3%)	18 (2.5%)	16 (2.2%)
12. Other kids say nasty things about me online.	571 (78.1%)	89 (12.2%)	53 (7.3%)	10 (1.4%)	8 (1.1%)
13. Other kids tell people to make fun of me.	591 (81.3%)	92 (12.7%)	28 (3.9%)	6 (0.8%)	10 (1.4%)
14. Other kids hit me.	607 (83.2%)	78 (10.7%)	23 (3.2%)	9 (1.2%)	13 (1.8%)

The results of the invariance testing are presented in Table 6.2. The recoded data from time 1 were tested with CFA. As shown in Table 6.2, the results of the fit indices supported the one-factor structure of the PECK-SF consistent with the findings of Prinz, Costa, Chervonsky, and Hunt (2019). In the second step, the configural model, the PECK-SF items at time two were entered into the model and correlated over time. The RMSEA and CFI both indicated that the model was a good fit to the data (see Table 6.2). The findings of the configural model, suggest the PECK-SF is a good fit to the data at both time points. To test for weak (metric) invariance of the measure over time, factor loadings for each item were constrained to be equal over time. Weak (metric) invariance was supported, as the analysis indicated the model was a good fit to the data (see Table 6.2). As shown, the change in RMSEA was below 0.015, and the 95% confidence intervals for the RMSEA estimate included the point estimate of the configural model, the change in CFI was also within acceptable limits (<0.01) (Xing & Hall, 2015). The final step was to test for strong (scalar) invariance, where the thresholds over time were constrained to be equal. The change in RMSEA was below 0.015, and the 95% confidence intervals for the RMSEA estimate included the point estimate of the configural model, the change in CFI was also within acceptable limits (<0.01). Therefore, findings of the analysis suggest that the data meet the criteria of strong invariance. As such the PECK-SF provides an equivalent measurement of peer-victimisation over time.

Table 6.2 Tests of invariance over time for the short PECK

	χ^2	Diff test χ^2	RMSEA	Δ RMSEA	CFI	Δ CFI
Recoded Scale						
CFA Time 1	444.35, df=78, p<0.001		0.080 (0.073:0.088)		0.940	
Configural Model	800.99, df=337, p<0.001		0.043 (0.039:0.047)		0.963	
Weak (metric) invariance	778.86, df=350, p<0.001	50.82, df=13, p<0.001	0.041 (0.037:0.045)	-0.002	0.966	+0.003
Strong (scalar) invariance	816.78, df=391, p<0.001	56.82, df=41, p=0.051	0.038 (0.035:0.044)	-0.003	0.966	0

Research Ethics

Prior to data collection, both studies received ethical approval (see appendix i and iii). Bullying, peer-victimisation, and mental health can be sensitive topics to ask children and young people about and raise several ethical issues that need to be addressed, mainly related to consent and the protection from harm.

Consent. A phased approach was taken to seeking consent from participants in studies two and three. In line with the British Psychological Society (2010) recommendations, the first step was to gain approval from the relevant authorities to conduct the project in schools. In the English schools, this involved contacting schools directly and seeking their support. In Scotland, permission was first sought from the appropriate Local Education Authority (LEA) and once this was received schools in that area were then contacted. Following approval from the LEA (if relevant) and the school, parents were then contacted, and their approval sought for their child to participate in the project. Parents/ guardians were provided with a participant information sheet outlining the full details of the project, and providing examples of the types of questions participants would be asked. Passive consent was sought from parents/ guardians, where then are asked to return the form should then not want their child to participate in the study. Following this, and in line with the guidance provided by the National Society for the Prevention of Cruelty to Children (NSPCC, 2012), participants were also provided with the opportunity to agree to participate in the study. In order to gain continued agreement to participate in the study participants were reminded of their right to miss out any questions they do not feel comfortable in answering (NSPCC, 2012). For study three, each participant's consent to participate in the survey was sought at all three data collection points. In

consultation with schools, any pupil who did not want to participate was provided with another activity to complete.

Protection from harm. As the questionnaire covered potentially sensitive topics, there was a risk of distress associated with completing the questionnaires. This risk was managed in several ways. Participant information sheets provided detail on the issues covered in the questionnaire so that participants or their parents/ guardians could refuse consent. Participants were reminded of their right to omit any questions they did not feel comfortable in answering. In addition, participants were also provided with a debrief sheet with details of helplines and websites that could provide more information on bullying and mental health, alongside a source of support within the school who they could talk to about the issues covered in the questionnaire. In study three participants were also advised to speak to someone at home if they were concerned about any of the topics covered in the questionnaire. Therefore, support information was also provided on the participant information sheet for parents/ guardians.

CHAPTER 7 CROSS-SECTIONAL STUDY

The role of perceived social support in the relationship between being bullied and mental health difficulties in adolescents.

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Abstract

The aim of the study was to test the relationship between experiences of being bullied, cyberbullied and mental health difficulties, and whether these relationships are moderated by perceived social support and gender. Data were collected from 3,737 Year 8 pupils (aged 12 and 13 years old; 50.1% male) using an online questionnaire. Measures of bullying victimisation, perceived social support, and mental health difficulties were included in the online questionnaire. Moderation analyses were conducted to test whether the relationships between being bullied, cyberbullied, and mental health difficulties were moderated by perceived social support and gender. Four models were estimated, each assessing a different source of perceived social support (from family, friends and peers, professional sources, and the perception of having no support). Results of these analyses indicated that across all four models being bullied was significantly associated with mental health difficulties, and being cyberbullied was only significantly associated with poorer mental health difficulties in girls in one of the models. The different sources of perceived social support did not moderate the relationship between experiences of being bullied or cyberbullied and mental health difficulties for either boys or girls. However, significant associations were found between a perceived lack of support, perceived social support from friends and family and mental health difficulties in girls, but not in boys. The results contribute to a complex body of research findings exploring the role of perceived social support in the relationship between experiences of being bullied and mental health difficulties.

Keywords

Bullying, cyberbullying, perceived social support, mental health difficulties.

Introduction

Being bullied is a frequent experience for many adolescents (Juvonen & Graham, 2014), and one which can relate to mental health difficulties in both the short- and long-term (Ttofi, Farrington, Lösel, & Loeber, 2011). Perceived social support is one factor which may buffer the relationship between experiences of being bullied and mental health difficulties, providing adolescents with resources to draw upon for support. A recent systematic review has highlighted gender differences in the buffering effect of perceived social support, alongside differences on the basis of the source of perceived social support, in the relationship between experiences of being bullied and mental health difficulties (Noret, Hunter, & Rasmussen, 2018). Therefore, the aim of this study is to examine the extent to which different sources of perceived social support moderate the relationship between experiences of being bullied, cyberbullied, and mental health difficulties.

Bullying is a distinct form of aggressive behavior which is experienced repeatedly, over time, and where there is an imbalance of power between those perpetrating the aggression and the recipient, for example on the basis of physical strength or popularity (Olweus, 1999; Whitney & Smith, 1993). The behavior also includes an element of intentionality, defined as the intention on the part of the perpetrator to hurt the target (Olweus, 1978). Bullying can involve directly observable acts, such as verbal (e.g., name calling) or physical aggression (e.g., being hit, kicked, or punched) (Marini, Dane, Bosacki, & YLC-CURA, 2006), and more indirect behaviors (e.g., being left out of a group, or being ignored) (Crick & Grotpeter, 1995). Cyberbullying is defined as bullying which is perpetrated through electronic and communication tools (Campbell, 2005; Hinduja & Patchin, 2008) and

can involve both directly observable (e.g., mean and humiliating posts on social media sites) and more indirect behaviors (e.g., blocking someone from an online conversation) (Langos, 2012).

In their recent survey of 120,115 UK adolescents, Przybylski and Bowes (2017) found that 27% of their sample had experiences of being directly and indirectly bullied only. Less than 1% of their participants had experienced being cyberbullied only, and approximately 3% had experienced all three forms of aggression. Similar findings have been reported in a large scale survey of 440,000 US students, where 17.3% of participants reported being verbally bullied, compared to 4.5% of participants who reported being cyberbullied (Olweus & Limber, 2018). Such findings suggest that while many adolescents experience being cyberbullied, other forms of bullying are more commonly reported (Olweus, 2012). While experiences of being bullied and cyberbullied have often been studied separately there have been calls for cyberbullying to be viewed as a form of bullying and one which should be studied as part of a broader “bullying context” (Olweus & Limber, 2018). Studying both experiences of being bullied and cyberbullied in parallel allows us to understand the unique and combined impact of these different bullying experiences (e.g., Giménez Gualdo, Hunter, Durkin, Arnaiz, Maquilón, 2015).

Adolescence is a time of substantial change in the peer group, involving a transition towards a greater importance of peer-relationships and peer-group status (Bukowski, Hoza, & Boivin, 1993). Being bullied challenges these peer-group goals as the aim of those perpetrating bullying is to demean and humiliate victims in front of the peer group, damaging social reputation and status (Juvonen & Graham, 2014). A number of meta-analyses have demonstrated the relationship between being

bullied and mental health difficulties, such as internalizing symptoms of depression and anxiety, and externalizing symptoms such as aggression (Reijntjes, et al., 2011, Reijntjes, Kamphuis, Prinzie, & Telch, 2010). In their recent review, Gini, Card, and Pozzoli (2018), found that both experiences of being bullied and being cyberbullied were independently associated with mental health difficulties. Such relationships have been found in both cross-sectional and longitudinal studies, suggesting both an immediate and long-term association between being bullied, cyberbullied, and mental health difficulties (Ttofi, Farrington, Lösel, & Loeber, 2011). However, not all those who have been bullied develop mental health difficulties (Newman, Holden, & Delville, 2005). The Transactional Model of Stress (TMS) (Lazarus & Folkman, 1984) offers a possible theoretical framework for examining individual differences in the relationship between victimisation and negative outcomes (Noret et al, 2018; Raskauskas & Huynh, 2015).

The TMS proposes that reactions to stressful situations, such as being bullied, are the product of a process of primary and secondary cognitive appraisal, and the coping strategy employed. Primary appraisals reflect an individual's evaluation of the importance of the event in the context of their own personal goals and beliefs, whereas secondary appraisals reflect an individual's evaluation of the resources they have available to manage the situation (Lazarus & Folkman, 1984). Perceived social support is one form of secondary appraisal and reflects the extent to which individuals believe they are loved and valued and can depend on others for support when faced with stressful or challenging situations (Cobb, 1976; Lakey & Cohen, 2000). The stress buffering hypothesis (Cohen & Wills, 1985) suggests that perceived social support can moderate the relationship between a stressor and

negative outcomes, where the relationship will be weaker in those with a high level of perceived support. Cohen and Wills (1985) proposed that this buffering role can function in two ways: it can reduce the perception of threat or risk of harm appraised in a given situation, or it can provide individuals with options to manage and cope with the stressor. Alternatively, the main effect model of perceived social support (Cohen, 2004; Cohen & Wills, 1985), suggests that perceived social support can directly predict positive mental health, even in the absence of any stressful or challenging situations. The perception of having social support provides individuals with the feeling that they are supported and accepted, and have resources available to manage challenging situations (Cohen, 2004).

The perception of domain-specific social support reflects the perceived support available from specific individuals (Pierce, Sarason, & Sarason, 1991). From a socio-ecological perspective, in early adolescence, domain-specific sources of support may reflect support from family, friends and peers, and teachers. Such individuals are all part of an adolescent's microsystem and are likely to have an important influence on adolescent development (Bokhorst, Sumter & Westenberg, 2009; Pössel et al., 2018). While the importance of peer relationships increases in adolescence (Bukowski et al, 1993), family relationships continue to be an important form of social influence (Desjardins & Leadbeater 2011). Adolescents also spend a great deal of time at school in the presence of teachers and peers. As adolescents develop greater independence and autonomy it may be that these sources of social support are evaluated as important for school related stressors as they offer the opportunity to seek support beyond the family (Yeung & Leadbeater, 2010).

Understanding the social context in which bullying occurs, and the individual predictive relationships of different sources of perceived social support, is important to understand both the unique associations with psychological adjustment, and the development of prevention and intervention activities (Demaray & Malecki, 2003; Pössel et al., 2018). These different forms of domain-specific perceived social support have been examined within a bullying context. In their systematic review of this literature, Noret et al. (2018) highlighted that research to date has focused on the moderating (buffering) role of support from individuals, specifically parents, teachers, peers/classmates and close friends.

Focusing specifically on perceived social support from adults, in a bullying context perceived social support from teachers and parents tend to be the sources of support most frequently examined. While perceived support from such adults has been found to be protective, gender differences in the literature have been reported. For example, a moderating role for perceived support from a teacher has been found in boys but not girls (Davidson & Demaray, 2007), whereas Tanigawa, Furlong, Felix, and Sharkey, (2011) found no moderating role for perceived teacher support. Similarly, regarding perceived support from parents/ guardians, contradictory gender differences have been reported. Perceived social support from a parent/ guardian has been found to moderate the relationship between being bullied and adjustment in girls but not boys (Davidson & Demaray, 2007), and separately in boys but not girls (Tanigawa, Furlong, Felix, & Sharkey, 2011), whereas some report no moderating role for parental support (e.g., Cheng, Cheung, & Cheung, 2008; Holt & Espelage, 2007). The ages of participants across these studies spanned across late childhood and adolescence. As adolescents move towards greater independence, this may be

reflected in a greater importance placed on other adults in their social network (e.g., teachers) and friends (Bokhorst, Sumter & Westenberg, 2010; Helsen, Vollebergh & Meuus, 2000). Therefore, the different findings reported in these studies may reflect developmental differences in the importance of different forms of perceived support (Pössel, et al., 2018, Noret et al., 2018). Despite the inconsistent findings, those studies reporting a buffering role for parent and/or teacher support found it to be protective, where the relationship between experiences of being bullied and mental health difficulties was weaker for those with greater perceived support in these domains.

In a bullying context, support from friends and peers is the most frequently studied form of domain-specific perceived support. Findings from these studies have also yielded inconsistent findings (Noret et al., 2018). Some studies have demonstrated a protective buffering role in boys but not girls (Cheng et al., 2008; Tanigawa et al., 2011) and some studies have demonstrated this finding in girls but not boys (Lim et al., 2011). Others have reported that the relationship between experiences of being bullied and mental health difficulties is *worse* for those with perceived support from friends or peers (e.g., Holt & Espelage, 2007). These inconsistent findings may reflect the different ways in which perceived social support has been measured, or whether the focus was on perceived social support from peers or from close/ best friends (Chu, et al, 2010; Rueger, Malecki, & Demaray, 2010). Alternatively, these differences may be reflective of the changeable nature of peer relationships and friendships in adolescence (Gariépy, Honkaniemi, & Quesnel-Vallée, 2016).

More recent research suggests that these different forms of domain-specific perceived social support can buffer the relationship between experiences of being cyberbullied and mental health difficulties. In their study of perceived support from family, defined as the number of family dinners, Elgar et al. (2014) found that such support moderated the relationship between experiences of being cyberbullied and mental health difficulties. The relationship was weaker in adolescents who reported a higher number of family dinners. Wright (2017) has also demonstrated the relationship longitudinally in her study of 131 pupils with developmental disorders: perceived social support from parents and teachers moderated the relationship between experiences of being cyberbullied and depressive symptomatology measured one year later. Such research supports a stress buffering role for perceived social support in the relationship between experiences of being bullied and mental health difficulties.

Although limited, there is evidence suggesting differences in the role of domain-specific forms of perceived social support in the relationship between different forms of bullying experiences and mental health difficulties (e.g., Yeung & Leadbeater, 2010). Different forms of perceived social support may be perceived as more or less helpful depending on the nature of the bullying experienced. Adolescents may be cautious about seeking help from the perceived support available for fear of any negative reactions, such as parents' overreaction (deLara, 2012), teachers not responding appropriately or their intervention making the situation worse (Bourke & Burgman, 2010), or help seeking resulting in further peer-rejection (Cowie, 2011). The usefulness of perceived social support in managing experiences of being cyberbullied may also be evaluated differently to experiences of

being bullied more generally, particularly with regard to perceived social support from adults. Adolescents may fear that parents will overreact which may result in a loss of access to technology and social media (Mishna, Saini, & Solomon, 2009). Alternatively, adolescents may perceive that support from adults may be unhelpful due to their perception that adults have a limited understanding of cyberspace and technology (Machmutow, Perren, Sticca, Alsaker, 2012).

The current study

Research to date has reported mixed findings regarding the relationship between experiences of being bullied, cyberbullied, perceived social support, and mental health difficulties. Such research suggests that there may be gender differences in this relationship (e.g., Lim et al., 2011), and that perceived social support may not always be protective (e.g., Holt & Espelage, 2007). Despite suggestions that experiences of being cyberbullied should be studied alongside experiences of other forms of bullying (Olweus & Limber, 2018) and evidence that being cyberbullied is associated with mental health difficulties independently of other forms of bullying (Gini, Card, & Pozzoli, 2018), much of the research exploring the role of perceived social support has tended to measure either experiences of being bullied or cyberbullied, and has tended to measure only one form of perceived support. Furthermore, no studies have examined the role of different forms of perceived social support in the relationship between experiences of being cyberbullied and mental health difficulties.

The current study will build upon previous research, and address some of the limitations identified, to test for gender differences in the role of domain-specific forms of perceived social support in the relationship between both experiences of

being bullied and cyberbullied, and mental health difficulties. Specifically, the following research questions will be addressed: 1) Is there a gender difference in the experience of being bullied, in perceived social support, and in symptoms of mental health difficulties? 2) Are experiences of being cyberbullied and being bullied significantly associated with mental health difficulties? 3) Does the perception of having no social support moderate the relationship between being bullied and cyberbullied and mental health difficulties? 4) Does perceived social support from family, peers, and/or professionals moderate the relationship between being bullied and mental health and being cyberbullied and mental health difficulties? 5) Does gender moderate the relationships between experiences of being bullied, cyberbullied, perceived social support and mental health difficulties?

Method

Design and Participants

A cross-sectional survey design was employed. Participants were 3,737 Year 8 pupils, 50.1% were male (N=1,873), 48.4% were female (N=1,807), and 1.5% (N=57) did not report their gender. All pupils were year 8 pupils (equivalent to 7th grade in the US school system) and were aged 12 and 13 years old. As year 8 pupils, participants were in their second year of secondary school education. Participants were recruited over three academic years (2012-2014) from 10 secondary schools within one local authority region in the North of England.

Measures

The current study is based on the secondary data analysis of data collected through a Local Education Authority (LEA) project examining the experiences of being bullied and general wellbeing of children and young people in local primary (Elementary schools in the US) and secondary schools (Junior High School in the US). The project involved consultation with LEA representatives, head-teachers, educational psychologists and representatives from the police. The questionnaire examined general experiences at school, experiences of being bullied, bullying others, and witnessing bullying at school, alongside reports of current worries, concerns, perceived social support and mental health difficulties. The questionnaire took pupils approximately 30 minutes to complete. Of interest to this study were participants' reports of being bullied, their perceived social support, and their responses to the measure of mental health difficulties.

Experiences of being bullied.

Pupils were presented with the following definition: Being bullied means that you have been intentionally hurt (meaning someone did it on purpose) and that you were hurt by one person or a group of people more than once. The definition was developed in consultation with the LEA to reflect how bullying was discussed with pupils in the local schools. Pupils were then presented with a list of thirteen behaviors and asked to report on how often in the past month they had experienced the behaviors. These behaviors were based in part on the Olweus Bully/Victim Questionnaire (Solberg & Olweus, 2003) and included the addition of items related to the experience of cyberbullying. The list included three examples of physical bullying, (been hit or kicked or punched; threatened with being hurt; been frightened by a look or stare) one item related to verbal bullying (been called names, or been insulted), three examples of relational bullying (been ignored by others; had rumours spread about you; been left out of a group), five cyberbullying items (received nasty text messages; received nasty emails; been blocked from an online conversation; had something hurtful posted on a social networking site; had someone post an embarrassing photo or video of you on a website), and an item relating to being bullied in other ways. Pupils were asked how often they had experienced each of the behaviors in the past month on a five-point likert scale, ranging from This hasn't happened to me in the past month (1) to At least once a day (5). As the scale was designed for the purposes of the study it was unclear how items would cluster together. Therefore, an exploratory factor analysis (maximum likelihood) using direct oblimin rotation was conducted using SPSS. The analysis yielded a two-factor model, identified through the scree plot and rotated component matrix, with items

clustering around two factors: experiences of being bullied and experiences of being cyberbullied. The two factors accounted for 57.33% of the variance, with bullying accounting for 45.87% and cyberbullying accounting for a further 11.46%. Both factors had eigenvalues greater than one; bullying = 5.51, cyberbullying = 1.38. The internal reliability of both scales was good, for bullying $\alpha = .84$, and for cyberbullying $\alpha = .85$. Items were meant to create scores ranging from 1 to 5, with higher scores indicating more frequent experiences of being bullied.

Perceived social support.

A measure of perceived social support was developed in collaboration with the LEA. The measure was similar to other categorical measures of perceived social support in that pupils were provided with a list of possible sources of support (e.g., Rigby & Slee, 1999; Sarason, Levine, Basham, & Sarason, 1983). But rather than ask participants about the amount of support available, the measure asked pupils whether they could or could not seek support from the different sources of support presented. Pupils were presented with the following instruction: If you were in trouble or were concerned about something who would you confide in (who would you talk to), please select all the answers that apply to you. Pupils were then presented with a list of 17 possible sources of support clustering around four domains, including having no-one to talk to, sources of family support (parent or person who looks after me, brother or sister; aunt, uncle or cousin, grandparents or grandparent), sources of friend/ peer support (friend; boyfriend or girlfriend, older pupil), and sources of professional support (a teacher; non-teaching staff at school; school nurse; school counsellor; chaplain; PSHE co-ordinator; youth worker; peer-

mentor). The question also included an other option, however this was not included in the analysis.

For each item, pupils indicated whether they felt they could talk to each person (coded as yes=1), or no they could not talk to that person (no=0). For the purposes of this study, the individual sources of supported were grouped to represent sources of support from family, friends and peers, and professional support. Responses were coded as to whether participants did (=1) or did not have access (=0) to support from family, from teachers, and/or from professional sources. The item related to having no-one to talk to was analysed separately and coded differently. This item was coded as 1 = having no one to talk to, and 0 = having someone to talk to.

Mental Health Difficulties.

Mental Health difficulties were measured using the short 12-item version of the General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988). Pupils were presented with a list of 12 statements reflecting different thoughts and feelings (e.g., lost much sleep over worry?) and were asked how often they felt that way in the past month. Responses to the 12 statements were rated on different four-point likert scales, to capture the severity of distress (Tait, Hulse, & Robertson, 2002). Item 1 was rated on a four-point scale from better than usual (1) to much less than usual (4), items 2 to 7 were rated on a four-point scale from not at all (1) to much more than usual (4), and items 8 to 12 were rated on a four-point scale from more so than usual (1) to much less than usual (4). Responses to items are then meaned to create a score from 1 to 4, a lower score reflects a lower experience of mental health difficulties (and so better mental health), higher scores indicate a more frequent

experience of mental health difficulties. The GHQ-12 has been found to have good internal reliability and has previously been used with adolescent samples to measure mental health difficulties (Baksheev, Robinson, Cosgrave, Baker, & Yung, 2011). In the current study, the internal reliability of the scale was good (Cronbach's $\alpha=.91$).

Procedure

The study was approved by the University's research ethics committee. The survey was administered online using the SurveyMonkey online survey tool. Schools were recruited with support from the LEA during an annual briefing session. All secondary schools in the area (N=10) participated in the study annually over the three-year period, with data being collected from a different cohort of year 8 pupils every year. To ensure consistency in the administration of the survey, schools were provided with a list of standardized instructions and a presentation file. Schools then administered the survey to their pupils in a designated lesson, in exam conditions. Data collection occurred at the same point every year, in the summer term (June/July).

Data Analysis

Moderation analyses were conducted using MPLUS (v7.31 MAC). Results were downloaded from the SurveyMonkey tool and the GHQ, bullying, and cyberbullying scales were calculated using SPSS (V24). Continuous predictors were mean centred before interaction terms were created. Moderation analyses were conducted using maximum likelihood with robust standard errors estimation (MLR) to account for the categorical nature of the moderators (the sources of perceived social support and gender). The analyses were conducted using Full Information Maximum Likelihood (FIML) to account for missing data.

An initial model was calculated including the main effects of experiences of being bullied, being cyberbullied, all sources of perceived social support, and where gender and all sources of perceived social support (except having no-one to talk to) were entered as moderators. Variance inflation factors (VIF) and tolerance statistics were calculated to identify any issues with multicollinearity. In this initial model, the levels of multi-collinearity exceeded acceptable limits ($VIF > 5$) (Akinwande, Dikko, & Samson, 2015), with VIF values ranging from 7 to 12. To address this, four separate models were calculated, one for each source of support, see figure 1. The measure of social support was entered as a moderator in each model, and the multi-groups method was used to test for the moderating role of gender. The Satorra-Bentler rescaled chi-square test was used to compare the models for boys and girls, individual z tests were also used to test for gender differences in unstandardized regression coefficients (Paternoster, Brame, Mazerolle, & Piquero, 1998).

FIGURE 7.1 ABOUT HERE

When reporting the results of the moderation analysis, both unstandardized and standardized path co-efficients are presented. For continuous predictors (experiences of being bullied and cyberbullied) standardized paths are calculated based on the standard deviations of both the predictor (x) and outcome variables (y) ($STdyx$ in MPlus) (Muthén & Muthén, 2017). For categorical predictors (sources of social support), standardized paths are calculated on the basis of the standard deviation of the outcome variable, and are interpreted as a standard deviation change in the outcome variable as the predictor variable changes from 0 to 1 ($STdy$ in MPLUS) (Muthén & Muthén, 2017).

Results

Is there a gender difference in the experience of being bullied, in perceived social support and symptoms of mental health difficulties?

Experiences of being bullied, cyberbullied, and mental health difficulties.

As shown in Table 7.2, participants reported experiencing bullying more often than cyberbullying. There were significant correlations between being bullied and being cyberbullied. Significant correlations were also found between both being bullied and being cyberbullied and mental health difficulties.

TABLE 7.2 ABOUT HERE

Table 7.3 shows the descriptive statistics and correlations, presented separately for boys and girls. Girls reported experiencing being bullied and cyberbullied more than boys. Scores of mental health difficulties were also higher in girls than boys. Significant positive correlations between experiences of being bullied, cyberbullied and mental health difficulties were found in both boys and girls. Gender differences in mental health difficulties, experiences of being bullied and being cyberbullied scores were analysed using independent t-tests. Significant differences and small effects in mental health difficulties and experiences of being cyberbullied scores were found. In both cases girls reported higher scores than boys. No significant differences were found in scores of being bullied.

TABLE 7.3 ABOUT HERE

Perceived social support

The sources of support participants reported having available are show in Table 7.4. Overall, 11.6% of the sample reported having no-one to talk to. Support from family was more frequently reported than professional support or support from

friends/ peers. Chi-square analyses were used to test the association between gender and the different sources or perceived social support. There was a significant association, and small effect, between gender and having no-one to talk to, a higher proportion of boys reported having no-one to talk to. Significant associations and small effects were also found between gender and talking to family, and between gender and talking to friends and peers. A higher proportion of girls reported being able to talk to family or friends/ peers. No significant association was found between gender and professional support. The proportion of boys and girls who reported being able to access professional support was approximately equal.

TABLE 7.4 ABOUT HERE

Are experiences of being cyberbullied and being bullied significantly associated with mental health difficulties?

The four models accounted for between 24% and 25% of the variance in mental health difficulties ($R^2=.24$ to $.25$) for girls, and for boys between 11% and 12% of the variance ($R^2=.11$ to $.12$). Across all four models, for both boys and girls, being bullied was significantly associated with mental health difficulties. Being cyberbullied was significantly associated with mental health difficulties for girls in only one model (model 4: assessing perceived support from professional sources).

Does perceived social support moderate the relationship between experiences of being bullied and mental health and between being cyberbullied and mental health difficulties?

As show in Table 7.5, across all four models no source of support moderated the relationship between experiences of being bullied or cyberbullied and mental health difficulties in either boys or girls.

Does gender moderate the relationships between experiences of being bullied, being cyberbullied, perceived social support and mental health difficulties?

The moderating role of gender was examined using the multigroups method of testing for moderation, using Satorra-Bentler tests. Gender moderated the relationships in the no social support model, $SB\chi^2 (df=5) = 20.37, p=.001$. A significant gender difference was found in the path between having no one to talk to and mental health difficulties, $Z=-2.33$. Having no-one to talk to was significantly associated with mental health difficulties in girls ($b=.16$) but not boys ($b=.004$). Gender was also found to moderate associations in the family support model, $SB\chi^2 (df=5) = 13.93, p=.020$. A significant gender difference was found in the association between perceived support from family and mental health difficulties; $Z=2.00$, this source of support was significantly associated with fewer mental health difficulties in girls ($b=-.15$) but not in boys ($b=-.05$). Gender significantly moderated the relationships in the friend support model, $SB\chi^2 (df=5) = 11.65, p=.040$. The association between being able to talk to friends/ peers was significantly associated with mental health difficulties in girls ($b=.07$) but not boys ($b=.04$); however, no significant difference in the path between perceived support from friends/ peers and mental health difficulties ($Z=-.83$), or in any of the other paths was found. Gender did not moderate the relationships across variables in the professional support model, $SB\chi^2 (df=5) = 17.46, p=.071$.

TABLE 7.5 ABOUT HERE

Discussion

The aim of the current study was to examine the role of perceived social support in the relationship between experiences of being bullied, cyberbullied, and mental health difficulties, and whether this was moderated by gender. Being bullied was significantly associated with mental health difficulties across all four models. Of the four models, experiences of being cyberbullied was only directly associated with mental health difficulties in the model assessing perceived support from professional sources. Perceived social support from friends/peers, parents and the perception of having no-one to talk to were associated with mental health difficulties in girls but not boys. No source of perceived social support moderated the relationships between being bullied or being cyberbullied and mental health difficulties, in either girls or boys.

Consistent with previous research (e.g., Przybylski & Bowes, 2017), experiences of being bullied were more frequently reported than experiences of being cyberbullied by both boys and girls. The prevalence of being bullied was similar in boys and girls, however reports of being cyberbullied were significantly higher in girls. This finding is consistent with some previous studies (e.g., Rivers & Noret, 2010; Study 1 in Smith, Mahdavi, Carvahlo, Fisher, Russell, & Tippett, 2008); however, gender differences in experiences of being cyberbullied are inconsistent in the research literature (Tokunaga, 2010). The gender difference in experiences of being cyberbullied identified in the current study may be due to different usage in early adolescence. Gender differences have been reported in a number of studies, where boys typically report engaging in more gaming activities, and girls report greater use of social media (Houghton, Hunter, Rosenberg, Wood,

Zadow, Martin, & Shilton, 2015; Rosenberg, Houghton, Hunter, Zadow, Shilton, Wood, & Lawrence, 2018). The measure used in the current study focuses on cyberbullying which occurred through social media (e.g., being left out of an online conversation or having a humiliating/ embarrassing picture taken) or through mobile phone (e.g., nasty text messages) but did not include any reference to bullying which occurs through online games. Recent research has identified this as a common experience in online games, and more frequently experienced by boys (e.g., Lee & Shin, 2017). Future research should include online gaming in any measure of cyberbullying.

Across all models being bullied was associated with mental health difficulties for both boys and girls. The Transactional Model of Stress (Lazarus & Folkman, 1984) suggests that for an experience to be deemed stressful and lead to negative outcomes, it must first challenge particular goals held by the individual. Developing close and intimate friendships is a major developmental goal in early adolescence (Berndt, 1982). Experiences of being bullied challenges such goals, by damaging friendships and social relationships (Juvonen & Graham, 2014) which can subsequently lead to mental health difficulties. Unlike other research (e.g., Gini, Card, & Pozzoli, 2018), no independent association was found between experiences of being cyberbullied and mental health difficulties, except in model four (the professional support model). Some forms of cyberbullying are very public, this visibility may result in others intervening and supporting the victim (Slonje, Smith, & Frisé, 2017), providing strategies for coping with the cyberbullying before it begins to impact on mental health difficulties. In a professional context, it may be that professionals working with young adolescents may not be witness to the

experiences or may not be able to effectively stop cyberbullying, which may lead to a continuation of the behavior and subsequent impact on mental health difficulties. This different pattern of associations between bullying, cyberbullying and mental health difficulties reported in this study highlights the importance of studying experiences of being cyberbullied in a broader bullying context rather than in isolation (Olweus and Limber, 2018).

The findings of this study also highlight gender differences in adolescents' perceptions of available support. More boys reported having no one to talk to about their worries and concerns compared to girls. Consistent with previous research (e.g., Furman & Buhrmester, 1992), girls were significantly more likely to report perceived support from friends/peers. Girls were also more likely to report support from parents and teachers. There was no significant gender difference in the perception of available professional support. The gender differences in the perception of available support, may reflect the nature of girls' social relationships in early adolescence. Compared to boys, girls are more likely to seek out intimacy and closeness in relationships, and are more likely to spend time developing such relationships (Rueger et al, 2010). Such gender differences in the development of social relationships in early adolescence may explain the difference in perceptions of available support reported in this study.

Gender differences were also found in the relationship between perceived social support and mental health difficulties. None of the sources of support were associated with mental health difficulties for boys. The gender differences in the perception of available support may reflect gender differences in the importance of social relationships in early adolescence or gender differences in coping styles

(Rueger, Malecki, & Demaray, 2010). In girls, the perception of having no one to talk to, and the perception of support from friends/peers, were both significantly associated with mental health difficulties while perceived social support from parents was significantly associated with fewer mental health difficulties, and therefore better mental health. Similar to more global measures of perceived social support, the perception of having no one to talk to may result in the perception of not being valued or supported, or isolated and vulnerable which may directly impact on mental health difficulties (Stice, Ragan, & Randall, 2004). The different pattern of associations for perceived support from family, and perceived support from friends and peers, reflects findings from the broader literature on the relationship between perceived social support and depression (e.g., Stice, Ragan, & Randall, 2004). The perception of support from parents, and family more broadly may be more valuable as such support is more consistent. Parents and older family members may be better equipped to provide more valuable support and better guidance based on their life experience (Stice, Ragan, & Randall, 2004).

From a TMS perspective, as a form of secondary appraisal, perceived support from family may be evaluated as more important and useful as a reflection of the better guidance and support previously received. The association between perceived support from friends/peers and mental health difficulties may reflect the instability and changeable nature of the peer group, particularly in early adolescence (Stice, Ragan, & Randall, 2004). This finding may reflect the evaluation of previous support sought from friends or the broader peer group. It may be that the support has not been helpful in the past (Hodges, Boivin, Vitaro, & Bukowski, 1999), or that friends or peers have minimised the experiences (Camara, Bacigalupe, & Padilla, 2017).

Alternatively, if adolescents repeatedly seek support from friends/ peers this may result in support erosion (Slavin & Rainer, 1990), or rejection from the peer group (Rueger, Malecki, Pyun, Aycock, & Coyle, 2016). Understanding changes in the perception of available social support in relation to peer relationships is needed to better understand the relationship between this form of perceived social support and mental health difficulties.

Although perceived social support was associated with mental health difficulties in girls, it did not moderate the relationship between experiences of being bullied or cyberbullied and mental health difficulties, in either boys or girls. Therefore, the results of all four models lend support to the main effect model of perceived social support (Cohen, 2004) rather than the stress buffering hypothesis (Cohen & Wills, 1985). A similar finding was reported by Rigby (2000), who suggested that while perceived social support did not moderate the relationship between victimisation and mental health difficulties, it may be that a mediation model may offer a better explanation of the relationship. Being bullied is a unique stressor, in that the aim of this behavior is to damage social relationships and reputation (Juvonen & Graham, 2014). Over time, as experiences of being bullied continue, it may be that social relationships are damaged, leaving those being victimised to feel isolated or struggle to develop social relationships (Rigby, 2000). Future longitudinal research is required to better understand the relationship between being bullied, perceived social support and mental health difficulties to examine how continued experiences of being bullied damages peer networks and the perception of available support.

Limitations and future directions

The findings of this study contribute to a complex and inconsistent body of research findings examining the role of perceived social support in the relationship between experiences of being bullied and mental health difficulties. A strength of our study is that it investigated both experiences of being bullied and cyberbullied and the role of a number of different sources of perceived social support, in a large representative sample of 13- and 14- year olds. This approach to measurement enabled us to identify different associations between different forms of bullying, and different forms of perceived social support.

The data were however collected using self-report measures, which can be challenging for both bullying victimisation and perceived social support. Identifying the prevalence of being bullied can vary due to methodological inconsistencies related to the way in which respondents are asked about their experiences. Reports of having experienced being bullied can vary due to the time frame provided, and whether a definitional or behavioral approach has been taken (Olweus & Limber, 2018; Volk, Veenstra, & Espelage, 2017). In an attempt to manage these challenges, pupils were provided with a definition that was already used with pupils in schools in the LEA and also provided with a list of behaviors, to address the limitations associated with single item questions on bullying. However, the data collection was dependent on self-report, which may be affected by social desirability (Solberg & Olweus, 2003). As such future research could consider employing the use of peer or teacher nominations to supplement the self-report data (Solberg & Olweus, 2003).

Similarly, the challenges associated with measuring perceived social support are well documented, and may explain the inconsistencies in research findings

(Rueger, Malecki & Demaray, 2010). In the current study we measured perceived social support by focusing on who participants could talk to if they were worried or concerned about something. This approach enabled us to capture different sources of perceived social support available, but not the depth and nature of that support. Future research could consider the use of a more detailed measure of perceived social support to capture the nature of the perceived social support, for example the child and adolescent social support scale (Malecki & Demaray, 2002).

The current study also relies on cross-sectional data, therefore limiting our ability to infer causal relationships between experiences of being bullied, perceived social support, and mental health difficulties. As discussed, further research is required to examine longitudinal relationships between being bullied, perceived social support and mental health difficulties. Such research would enable us to examine any possible bidirectional relationships between being bullied and perceived social support, for example whether those with a reduced level of perceived social support are more at risk of being bullied, or how the continuation of being bullied may result in a reduction in the perception of available social support.

Implications for practice

The findings of this study have important implications for professionals working with adolescents in school. When designing intervention and preventative programmes, the findings of the current study highlight the importance of capturing both bullying and cyberbullying in anti-bullying activities. The current study also highlights gender differences in the perception of social support and in the association between perceived social support and mental health difficulties in early adolescence. Our results highlight that perceived social support from friends and

peers may not always be beneficial for girls. Encouraging those being bullied to seek help and enact upon available social forms the basis of a number of anti-bullying initiatives (Demaray & Malecki, 2006). Future interventions could also consider working with the school community to raise awareness of how best to support those being bullied.

Conclusion

The results highlight different associations between bullying, and cyberbullying, and mental health difficulties. These different relationships highlight the importance of studying both behaviors, rather than each in isolation. In addition, the gender differences in the perception of perceived social support, and the association with mental health difficulties, contribute to a complex body of literature on the relationship between bullying, perceived social support and mental health difficulties. Such gender differences may have implications for the effectiveness of any interventions based around social support. Consistent with some previous research, this study highlights that perceived support from friends and peers may not always be protective, particularly for girls. Therefore, further research examining the longitudinal relationship between experiences of being bullied, peer-relationships and perceived social support is required to better inform intervention work.

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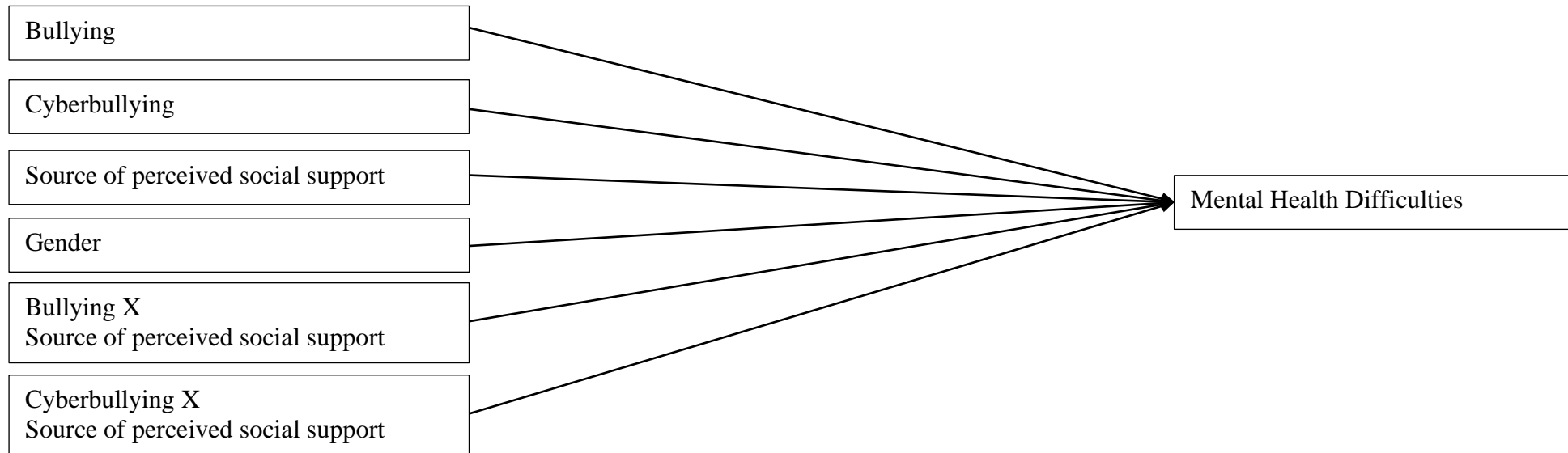
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Note:

The multi-groups method was also used to test whether gender moderated the relationships presented in this model.

Figure 7.1 Example Model

Table 7.1 Descriptive statistics and correlations for bullying, cyberbullying and mental health difficulties

	1.	2.	M(SD)
1.Bullying	-	-	1.60 (.79)
2.Cyberbullying	.60***	-	1.18 (.50)
3. Mental health difficulties	.39***	.30***	1.74 (.54)

Notes: *** $p < .001$

Table 7.2 Descriptive statistics and correlations shown by gender

	M(SD)					
	1.	2.	3.	Boys	Girls	t
1.Bullying	-	.55***	.35***	1.59 (.79)	1.61 (.78)	0.47, $p=0.64$
2.Cyberbullying	.65***	-	.23***	1.14 (.46)	1.22 (.53)	4.15***, $d=0.16$
3. Mental health difficulties	.45***	.35***	-	1.63 (.49)	1.84 (.58)	11.30***, $d=0.20$

Notes: *** $p < .001$, correlations for boys are shown above the diagonal, and for girls below.

Table 7.3 The number (and percentage) of participants reporting who they would talk to if they were worried or concerned about something.

	Total		Boys		Girls		$\chi^2(1)$	ϕ
No-One	435	(11.6%)	295	(18.6%)	137	(7.6%)	65.90***	.10
Support from Family	2,338	(62.6%)	1,134	(60.5%)	1,197	(66.2%)	7.92**	.05
Support from Friends/ Peers	1,752	(46.9%)	663	(35.4%)	1,084	(60.0%)	232.20***	.20
Professional Support	766	(20.5%)	398	(21.2%)	363	(20.1%)	1.87	N/A

Notes: ** p<.01, ***p<.001

Table 7.4 Moderation Analyses: the relationships between bullying, cyberbullying, perceived social support, and mental health difficulties

	<i>Males</i>						<i>Females</i>						
	<i>R</i> ²	<i>Unstandardized</i>		<i>Standardized</i>			<i>R</i> ²	<i>Unstandardized</i>		<i>Standardized</i>			<i>Z</i>
		<i>b</i>	<i>SEb</i>	β	<i>SE</i>	<i>95% CI</i>		<i>b</i>	<i>SEb</i>	β	<i>SE</i>	<i>95% CI</i>	
<i>Model 1: No social support</i>	.12						.25						
Bullying		.22*	.03	.34*	.04	.26:.41		.30*	.04	.42*	.05	.33:.52	1.60
Cyberbullying		.06	.08	.06	.07	-.08:.20		.05	.07	.05	.07	-.08:.17	0.09
Social support		.004	.03	.003	.03	-.05:.05		-.16*	.06	.08*	.03	.02:.14	-2.33*
Bullying X Social support		-.11	.07	-.08	.05	-.18:.02		.04	.11	-.02	.06	-.14:.09	-0.54
Cyberbullying X Social support		.02	.18	.01	.09	-.16:.19		.14	.15	.09	.06	-.03:.20	-0.51
<i>Model 2: Perceived support from family</i>	.12						.25						
Bullying		.13*	.05	.20*	.07	.07:.34		.27*	.07	.37*	.09	.19:.55	-1.63
Cyberbullying		.13	.12	.11	.10	-.09:.32		.17	.12	.16	.11	-.05:.45	-0.24
Family support		-.05	.03	-.04	.03	-.09:.01		-.15*	.04	-.11*	.03	-.16:-.06	2.00*
Bullying X Family support		.09	.06	.11	.07	-.02:.24		.04	.08	.05	.09	-.12:.22	0.83
Cyberbullying X Family support		-.13	.15	-.08	.09	-.25:.10		-.14	.14	-.10	.10	-.29:.10	0.05

	<i>R</i> ²	<i>Males</i>					<i>Females</i>					<i>Z</i>
		<i>Unstandardized</i>		<i>Standardized</i>			<i>Unstandardized</i>		<i>Standardized</i>			
		<i>b</i>	<i>SEb</i>	β	<i>SE</i>	<i>95% CI</i>	<i>b</i>	<i>SEb</i>	β	<i>SE</i>	<i>95% CI</i>	
<i>Model 3: Perceived support from friends/ peers</i>	.11											.24
Bullying		.20*	.04	.30*	.05	.20:.40	.28*	.07	.40*	.09	.21:.58	-0.99
Cyberbullying		.08	.11	.07	.10	-.13:.27	.14	.13	.14	.13	-.11:.39	-0.35
Friend/peer support		.04	.02	.04	.02	-.01:.08	.07*	.03	.06*	.03	.01:.11	-0.83
Bullying X		.01	.05	.01	.05	-.09:.11	.03	.08	.04	.08	-.13:.20	-0.21
Friend/peer support												
Cyberbullying X		-.09	.15	-.05	.09	-.23:.13	-.08	.15	-.06	.11	-.28:.16	-0.05
Friend/peer support												
<i>Model 4: Perceived professional support</i>	.11											.24
Bullying		.21*	.03	.32*	.05	.23:.40	.30*	.04	.42*	.06	.31:.52	-1.80
Cyberbullying		.11	.08	.10	.07	-.05:.24	.14*	.07	.13*	.07	.004:.30	-0.28
Professional support		-.01	.03	-.01	.02	-.06:.03	.01	.03	.01	.03	-.04:.06	-0.47
Bullying X		-.04	.06	-.03	.05	-.12:.06	.02	.08	.02	.06	-.10:.17	-0.60
Professional support												
Cyberbullying X		-.11	.14	-.06	.08	-.22:.10	-.15	.15	-.07	.08	-.23:.13	0.19
Professional support												

Notes: **p*<.05

The z scores reported in the table represent gender differences in the unstandardized betas

Model 1: No perceived social support is coded as 1 = having no one to talk to, and 0 = having someone to talk to.

Models 2-4: 1 = has support in that domain, and 0 = does not have support in that domain.

Higher mental health scores represent more mental health difficulties, lower scores represent better mental health.

CHAPTER 8 LONGITUDINAL STUDY

The role of cognitive appraisals in the relationship between peer-victimization and depressive symptomatology in adolescents: A longitudinal study.

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Abstract

Underpinned by the transactional model of stress (Lazarus & Folkman, 1984), the aim of this pre-registered study was to test the role of cognitive appraisals (threat, challenge, control, blame, and perceived social support) in the longitudinal relationship between peer-victimization and depressive symptomatology. Measures of peer-victimization, cognitive appraisal, and depressive symptomatology were included in a self-report questionnaire, and data were collected at three-time points one month apart. Participants were 530 adolescents aged 11 to 14, who reported experiencing peer-victimization at the beginning of this study. Results of the cross-lagged panel analyses found both an association between peer-victimization and depressive symptomatology after three months, alongside an association between depressive symptomatology and later peer-victimization. Perceived social support from parents/ guardians, teachers, or close friends did not significantly moderate this relationship. Peer-victimization at the start of the study was significantly associated with challenge, but not threat, appraisals one month later. Both threat and challenge appraisals in the second month of the study were related to depressive symptomatology at the end of the study, one month later. A small significant total indirect effect via threat and challenge appraisal was found, though neither was a significant moderator on its own. The findings of the study highlight the role of cognitive appraisals, particularly challenge and threat appraisals, in adolescents' adaptation to peer-victimization.

Introduction

Peer-victimization is a common experience for many adolescents (Söderberg & Björkqvist, 2020). While the relationship between peer-victimization and depression is well established in the research literature (e.g., Schoeler, Duncan, Cecil, Ploubidis, & Pingault, 2018), not all adolescents who experience victimization develop poor mental health. Understanding such individual differences in adolescents' adaptations to peer-victimization is fundamental to the development of theoretical explanations of this relationship, and appropriate interventions to support those experiencing victimization. The Transactional Model of Stress (TMS) (Lazarus & Folkman, 1984) proposes that individuals' cognitive appraisals of an event, such as their appraisal of threat and perceived social support, may explain individual differences in the outcomes to similar stressful experiences. To date, research has demonstrated an association between cognitive appraisals, and poor mental health following experiences of peer-victimization (e.g., Taylor, Sullivan, & Kliever, 2013). However, longitudinal data are lacking. Therefore, the aim of this study is to examine the role of cognitive appraisals in the longitudinal relationship between peer-victimization and depressive symptomatology.

Peer-victimization is a form of aggressive behavior that occurs within peer-groups. Unlike bullying, which is a distinct form of peer-victimization, a power imbalance, and intention to harm are not inferred (Hunter, Boyle, & Warden, 2007). The aggressive behaviors experienced can include direct aggression, such as being hit, kicked or called names, indirect aggression, such as being left out of a social group, and cyber-victimization, such as being sent nasty or threatening text messages (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Hinduja & Patchin, 2008; Marini,

Dane, Bosacki, & YLC-CURA, 2006). The aim of these behaviors is to hurt and demean peers in front of the peer group, to damage their social relationships, and to compromise their peer group status (Juvonen & Graham, 2014). While identifying prevalence rates of peer-victimization can be difficult due to the range of methods used (Volk, Veenstra, & Espelage, 2017), a recent survey of 110,788 UK adolescents identified that approximately 30.3% of youth had been bullied in the previous two months (Przybylski & Bowes, 2017).

Being victimized is related to a range of negative outcomes, including lower self-esteem, higher levels of anxiety and depression, and suicidal thoughts (Hawker & Boulton, 2000; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Reijntjes et al., 2010). The relationship between victimization and poor mental health has been found in both cross-sectional and longitudinal studies, evident in adolescence, and continuing into adulthood (Rigby, 2003; Ttofi, Farrington, Lösel, & Loeber, 2011). Findings of longitudinal studies also suggest that internalising symptoms may be both a cause and consequence of peer victimization. In their meta-analysis of 15 longitudinal studies examining the impact of bullying on internalising symptoms, Reijntjes et al. (2010) concluded that internalising symptoms are a risk factor for peer-victimization as well as vice-versa. Furthermore, the effect of peer-victimization on internalising symptoms over time was stronger than the effect of internalising symptoms on peer-victimization. Being victimized by peers relates to higher levels of internalising symptoms, yet adolescents with mental health difficulties may be more likely to feel lonely in school and struggle with social relationships. Such characteristics may result in adolescents being vulnerable targets for victimization (Kaltiala-Heino, Fröjd, & Marttunen, 2010).

Although evidence suggests a relationship between peer-victimization and negative outcomes, not all those who are victimized develop poor mental health (Newman, Holden, & Delville, 2005). Peer-victimization has been defined as a stressful experience (Östberg, Låftman, Modin, & Lindfors, 2018). Therefore, theoretical models of stress may appropriately be applied to aid our understanding of this relationship. The TMS (Lazarus & Folkman, 1984) is a framework for understanding individual differences in the relationship between peer-victimization and depression. Lazarus and Folkman (1984) proposed that following an event (such as peer-victimization) an individual goes through a process of cognitive appraisal where they evaluate the importance and relevance of the situation to their wellbeing (primary appraisals) while also evaluating the resources they have available to manage this situation (secondary appraisals) (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1984). Although originally termed ‘primary’ and ‘secondary’ appraisals, the appraisal processes occur simultaneously and can be mutually influential in determining whether an event is evaluated as stressful (Folkman et al., 1986; Lazarus & Folkman, 1984).

Evidence suggests that cognitive appraisals of threat, challenge, control, blame, and perceived social support play a role in the relationship between peer-victimization and adverse outcomes (Noret, Hunter, & Rasmussen, 2018). Threat appraisals reflect an anticipation of possible loss or harm (Lazarus & Folkman, 1984) while challenge appraisals focus on the potential for personal gain or growth in response to the situation (Lazarus & Folkman, 1984). Threat and challenge appraisals may differ in the adaptive role they play in the relationship between peer-victimization and depressive symptomatology. Peer relationships increase in

importance in adolescence (Espelage, Holt, & Henkel, 2003). Peer-victimization is a direct challenge to these relationships and therefore may be more likely to be appraised as a significant threat, rather than as a challenge that can be easily overcome (Taylor et al., 2013). Evidence to date suggests that threat appraisals mediate the relationship between peer-victimization and depressive symptomatology, where peer-victimization is associated with depressive symptomatology due to an increase in threat appraisals (Gianotta, Settanni, Kliewer, & Ciairano, 2012; Hunter, Durkin, Heim, Howe, & Bergin, 2010; Taylor et al., 2013). To date, there is no evidence on the role of challenge appraisals in this relationship. However, challenge appraisals are adaptive, relating to coping styles such as wishful thinking, problem-focused coping, and more active help-seeking (Hunter & Boyle, 2004, Hunter et al., 2004). Such findings suggest that if those experiencing peer-victimization evaluate their experiences as a challenge as opposed to a threat, this may relate to more adaptive outcomes.

Cognitive appraisals also involve the evaluation of personal control and personal blame following a stressful experience. Control appraisals focus on an individual's perception of a situation as manageable based on their abilities, as being important to them, and as being one where they are able to do something about the situation (Grob, Flammer, & Wearing, 1995; Terranova, Harris, Kavetski, & Oates, 2011). Blame appraisals reflect the extent to which individuals feel responsible for the situation (Gerard, Buehler, Franck, & Anderson, 2005). Research to date has highlighted that control and blame appraisals may mediate the relationship between peer-victimization and negative outcomes. Control appraisals have been found to relate to the choice of coping style employed (Hunter & Boyle 2002; Terranova et

al., 2011), and retrospective studies suggest that those adolescents with a greater sense of control over their experiences of bullying in school reported lower levels of distress in adulthood (Hunter, Mora-Merchan, & Ortega, 2004). Although limited, evidence suggests that control appraisals mediate the relationship between peer-victimization and negative outcomes of loneliness and depression, where peer-victimization is associated with a lower appraisal of control which is, in turn, related to negative outcomes (Noret et al., 2018). Like control, threat and challenge appraisals, blame appraisals have been found to play an important role to adolescents' adaptation following a range of stressful events (e.g., Kim, Jackson, Conrad, & Hunter, 2008), yet to date, evidence of the role of self-blame appraisals in the relationship between peer-victimization and negative outcomes is limited (Noret et al., 2018).

Perceived social support can also be defined as a cognitive appraisal, one which reflects an individual's evaluation of the resources they have to manage an event (Cobb, 1976; Lakey & Cohen, 2000). The Stress Buffering Hypothesis (Cohen & Wills, 1985) suggests that perceived social support can function in two possible ways. It can be independently associated with adjustment (the main effect hypothesis), where a greater perception of available support is associated with more positive adjustment (Cohen, 2004; Cohen & Wills, 1985). Alongside the main effect for this support, greater perceived social support can also buffer the impact of stress on adjustment by providing individuals with means of coping with the experience (the stress-buffering hypothesis) (Cohen, 2004; Cohen & Wills, 1985). Perceived social support is argued to be a protective factor in the relationship between peer-

victimization and depression, providing those being victimized with the perception of having support available to manage the situation (Davidson & Demaray, 2007).

Domain-specific perceived social support reflects the evaluation of support available from specific individuals within the social network (Pierce, Sarason, & Sarason, 1991). From a socio-ecological perspective, development is viewed as an interaction between the individual and their environment, where the environment is defined as a series of interconnected systems the micro-, meso-, exo-, macro-, and chrono-systems (Bronfenbrenner, 1979). Employing a socio-ecological approach can be helpful to identify sources of perceived social support available to the individual (Bokhorst, Sumter, & Westenberg, 2009). In adolescence domain-specific perceived social support can be drawn from several sources within the micro-system (adolescents' immediate environment), for example from parents/ guardians, teachers, and peers/friends (Bokhorst et al., 2009; Pössel et al., 2018). As adolescents develop social relationships beyond the family, the perception of available support from other sources, such as teachers and friends may also be protective, particularly when faced with school-related stressors, such as peer-victimization (Yeung & Leadbeater, 2010).

To date, research has reported inconsistent findings as to the role of these different domains of perceived social support in the relationship between peer-victimization and negative outcomes (Noret et al., 2018). Perceived social support from teachers and parents/ guardians has generally been found to be protective in the relationship between peer-victimization and poor-mental health (e.g., Davidson & Demaray, 2007). Where a moderating role for teachers and parents/ guardians is reported, the relationship between peer-victimization and adjustment was weaker for

those with higher levels of perceived social support, highlighting a protective role of such evaluations. However, gender differences in this relationship have been reported (Davidson & Demaray, 2007; Tanigawa, Furlong, Felix, & Sharkey, 2011), and some studies have reported no moderating role (Cheng, Cheung, & Cheung, 2008; Lim et al., 2011).

Studies examining the role of perceived social support from peers/ friends are particularly complex and inconsistent in their results (Noret et al., 2018). While some have reported no buffering role for this form of perceived support (e.g., Davidson & Demaray, 2007; Noret, Hunter, & Rasmussen, 2020) others have supported its protective stress-buffering role (Cheng et al., 2008; Tanigawa et al., 2011). Turning the stress-buffering hypothesis upside-down, Holt and Espelage (2007) reported that peer-victimization is more strongly associated with maladjustment among young people with more support. These inconsistencies may be reflective of differences in the measurement of perceived social support in this domain (Rueger, Malecki, & Demaray, 2010). Alternatively, these inconsistent findings may reflect the unstable and changeable nature of adolescent friendships (Gariépy, Honkaniemi, & Quesnel-Vallée, 2016).

The current study

Underpinned by the TMS (Lazarus & Folkman, 1984), in the present study we examine the role of cognitive appraisals in the longitudinal relationship between peer-victimization and depressive symptomatology. Cognitive appraisals play a role in the way in which adolescents interpret and assign meaning to their experiences of peer-victimization (Hunter & Boyle 2002; Terranova et al., 2011), and can be directly related to both emotional outcomes (Smith et al., 1993) and poor mental

health (e.g., Fearnow-Kenney & Kliwer, 2000; Fosco & Feinberg, 2015).

Longitudinal data are needed to test the hypothesized mediating role of multiple cognitive appraisals in the relationship between peer-victimization and poor mental health. From a theoretical perspective, cognitive appraisals can be mutually influential in determining an individual's adaptations to events (Lazarus & Folkman, 1984). For example, a greater perception of available social support may reduce the appraisal of threat. While some longitudinal evidence exists (e.g., Taylor et al., 2013) much of the research to date has tended to employ cross-sectional designs which poses challenges for testing mediating relationships (Maxwell & Cole, 2007).

Employing a socio-ecological approach enables us to examine the role of cognitive appraisals from an individual level (threat, challenge, control, and blame appraisals) alongside appraisals of available social support from the micro-system (perceived social support from parents/guardians, teachers and close friends).

Research to date has tended to study appraisals in isolation (e.g., Terranova et al., 2011) or only one form of perceived social support (e.g., Prinstein, Boergers, & Vernberg, 2001). Analysing multiple appraisals enables us to identify which appraisals may be most strongly associated with depressive symptomatology in a peer-victimization context.

Therefore, the aim of this study to test the longitudinal relationships between peer-victimization, cognitive appraisals, and depressive symptomatology, and to test the following hypotheses:

1. Peer-victimization will significantly predict symptoms of depression over time.
2. Primary appraisals of threat, blame, challenge and control, will mediate the relationship between peer-victimization and subsequent symptoms of depression.

3. Perceived social support from parents or teachers or close friends will moderate the relationship between peer-victimization and subsequent symptoms of depression. The relationship between peer-victimization and symptoms of depression will be stronger for those with lower levels of perceived social support.
4. Perceived social support from parents or teachers or close friends will moderate the mediating role of primary appraisals on the relationship between peer-victimization and subsequent symptoms of depression. Specifically, perceived social support from parents, or teachers, or friends will moderate the relationships between peer-victimization and each of the four types of primary appraisal.

Method

Design and Participants

Data were collected as part of a three-wave longitudinal study examining the role of cognitive appraisals in the longitudinal relationship between peer-victimization and depressive symptomatology. Overall, 1,058 pupils from four secondary schools (high schools) in Scotland and England participated in a three-wave longitudinal study over three-month months from May to July 2019 and from October to December 2019. Participants were from the first three years of secondary school from years 7 to 9 (grades 6 to 8 in the US school system). As the aim of the study was to analyse adolescents' cognitive appraisals of their experiences of peer-victimization, only participants who reported experiencing peer-victimization at time 1 (T1) were included in the study (N=533, 50.4%). Participant demographics at each wave of data collection are shown in table 1.

TABLE 8.1 HERE

Measures

Peer-victimization. A short version of the personal experiences checklist (PECK) (Hunt, Peters, & Rapee, 2012) was used at T1 and T3 was included in the survey to measure experiences of peer-victimization. The questionnaire includes 14 items related to relational-verbal, physical, cyber, and culture-based victimization. Participants were presented with the instruction "*Thinking about the last month or so at school, how often do the following things happen to you?*" and were then asked to rate each of the 14 items (e.g., *other kids hit me*) on a five-point frequency likert scale ranging from 0 = "never" to 4 = "everyday". A total peer-victimization score was calculated by summing all 14 items on the scale, with a higher score indicating

more frequent experiences of peer-victimization. The scale was tested for invariance across both time points, to ensure the psychometric properties of the scale were equivalent over these two conditions (Putnick & Bornstein, 2016). This initial test found the scale was not invariant due to problematic thresholds at the extreme end of the likert scale for three items on the measure. Therefore, and consistent with the approach taken by Prinz, Costa, Chervonsky, and Hunt (2019), the five-point scale was reduced to four points by recoding those who reported experiencing these behaviors most days (=4) and everyday (=5) into the same category (=4). The recoded version met the criteria for strong invariance over time (Bowen & Masa, 2015). Regarding the internal reliability of the scale, McDonald's $\omega = .97$ at both time 1 and at time 3.

Cognitive Appraisals. Threat, challenge control, and blame appraisals, as well as perceived social support, were included as measures of cognitive appraisal. Threat, challenge, control, and blame appraisals were measured at all three time points. To measure threat appraisal, the four-item scale developed by Hunter et al. (2004) was used. Items include statements such as “*You will feel bad about yourself*” and are rated on a four-point likert scale ranging from “not likely” (=1) to “very likely” (4). The four items are summed to create a score of threat appraisal, with a higher score indicating a greater evaluation of threat. In the current study, the internal reliability of the scale was acceptable at all three time points (McDonald's ω at T1 = .80, T2 = .75, and T3 = .77). Challenge appraisal was measured using a five-item scale. The original four items developed by Hunter et al. (2004) were included in the scale (e.g., “*You will learn to be nice to others*”) alongside an additional item based on the scale developed by Hood, Power and Hill (2009) “*Something good*

would end up happening” to capture a more general positive outcome from the experience. The five items were rated on a four-point likert scale ranging from “not likely” (=1) “very likely” (=4) and were summed so that a higher score represents a greater appraisal of challenge. In the current study, the internal reliability of the scale was acceptable at all three time points (McDonald's ω at T1 = .76, T2 = .77, and T3 = .81).

Control and blame appraisals were measured using the two scales developed by Catterson and Hunter (2010). The internal reliability of both scales was poor across all three time points. For control, McDonald's ω at T1 = .30, T2 = .32, and T3 = .35, and for blame, McDonald's ω at T1 = .45, T2 = .35, and T3 = .44. When mediators are not measured reliably, it can lead to biased estimates (Kenny, 2018), and therefore blame and control were not included in the analyses.

Perceived social support was measured at T1 using the child and adolescent social support scale (CASSS) (Malecki & Demaray, 2002). The CASSS is a 60-item measure assessing five subscales of perceived social support (parent, teacher, classmate, close friend, and school). Only the 36 items measuring the perceived frequency of available social support from parent, teacher, and close friend subscales were included in the questionnaire. Participants were asked to read each statement (e.g., “*My parents/ guardians listen to me when I need to talk*”) and assess the frequency of available support on six-point likert scale (1 = “Never” to 6 = “Always”). Responses were summed to provide a score of perceived social support in each domain. A higher score represents a greater perception of available social support in each domain. The CASSS has excellent psychometric properties (Rueger et al., 2010). In the current study the internal reliability of the subscales were:

McDonald's $\omega = .95$ for perceived social support from parents, McDonald's $\omega = .93$ for perceived social support from teachers, and McDonald's $\omega = .96$ for perceived social support from close friends.

Depressive Symptomatology. Depressive symptomatology was measured at time points one and three using the Center for Epidemiologic Studies Depression Scale-revised 10-item version for adolescents (CESDR-10) (Haroz, Ybarra, & Eaton, 2014). The CESDR-10 presents participants with the instruction “Below is a list of the ways you might have felt or acted. Please check how much you have recently felt this way” and asked to rate each of the 10 items (e.g., *I felt sad*) on a five-point likert scale from “not at all or less than 1 day in the last week” (0) to “nearly every day for 2 weeks” (4). Responses to the items are then summed, and a higher score reflects a greater experience of depressive symptomatology. The scale has been used previously with adolescent samples (e.g., Ybarra & Mitchell, 2014). In the current study, the internal reliability of the scale was McDonald's $\omega = .97$ at T1 and McDonald's $\omega = .96$ at T3.

Procedure

Ethical approval was sought from the School ethics committee at the lead author's university. Hypotheses and the data analysis plan were pre-registered with the Open Science Framework on the 13th February 2018 (reference withheld). Schools were contacted with an invitation to participate in the study. Once a school had agreed to participate in the study, informed consent was obtained from parents. Pupils were also provided with the opportunity to provide consent to participate and could opt out of the study at any point. Data were collected from pupils at three time points approximately one month apart. Two schools participated between April and

June 2018, and the additional two schools participated between September and December 2018. Pupils completed the questionnaire in class time, in the presence of a researcher who was present to answer any questions. Pupils at two schools completed the questionnaire online through Qualtrics and, in the remaining two schools, pupils completed a paper questionnaire. At each time point, pupils were provided with a debrief sheet which provided information on support available in school and from national charities.

Data analysis

To assess the longitudinal relationships between peer-victimization, cognitive appraisals, and depressive symptomatology, cross-lagged panel analyses were conducted. As per the pre-registered analytical plan, the models were built in phases. An initial cross-lagged model was conducted to calculate the auto-regressive effects of depressive symptomatology at T1 on the depressive symptomatology at T3, and the auto-regressive effects of peer-victimization at T1 on peer-victimization at T3. The error terms associated with depressive symptomatology were correlated at T1 and at T3, the error terms associated with peer-victimization were also correlated at these two time points. All autoregressive paths for each type of primary appraisal were estimated. The error terms associated with each type of primary appraisal at T2 were correlated with the equivalent error term at T3.

For the third phase of the data analysis, the mediators were removed from the analysis and three separate models were calculated to test for the moderating effect of perceived social support on the relationship between peer-victimization at T1 and depressive symptomatology at T3. Each of the three models tested the moderating effect of a different form of perceived social support (teacher, parent/guardian, close

friend). Where any source of perceived social support was a significant moderator, it was included in the final model. The final model assessed whether perceived social support moderated the relationship between peer-victimization at T1 and any form of cognitive appraisal identified as significant in the second model, identified in the second model. Where significant moderating effects were found for the perceived social support variables, simple slopes analyses were conducted in MPLUS to identify the relationships between the relevant variables at three levels of the social support variable (the moderator). These relationships were calculated for the mean score of perceived social support, +1SD above the mean and -1SD below the mean.

Little's MCAR test was calculated using SPSS (V24) and indicated that data for all variables of interest were missing completely at random; $\chi^2 (2051) = 2,041.80$, $p=.55$). Therefore, to manage missing data, all models were estimated using full information maximum likelihood estimation (FIML) (Little, 2013), using MPLUS Version 8.1. In model 1 (the simple cross-lagged model) and model 3 (the perceived social support models), paths were estimated using the maximum likelihood with robust standard errors estimator (MLR), to address deviations from normality in the data (Muthén, Muthén, & Asparouhov, 2017). In model 2 (the mediation model), paths were estimated with the Maximum Likelihood (ML) estimator and the indirect effects were tested with bootstrapped confidence intervals, an approach seen as the most appropriate for testing indirect effects, and one which is also appropriate for data which deviate from normality (Hayes, 2013). Model fit was established using the RMSEA and CFI fit indices. Acceptable fit was defined as an RMSEA below .08 and a CFI value above .90 (Little, 2013).

Results

Descriptive statistics

As shown in Table 8.2, the mean peer-victimization and depressive symptomatology scores were higher at T1 compared to T3. Perceived social support from parents/ guardians was the more frequently reported form of support, followed by close friends. T2 challenge appraisals were not significantly correlated to T1 peer-victimization, T1 depressive symptomatology, or T2 threat appraisals. T2 and T3 threat appraisals were not significantly correlated to perceived social support from parents or teachers. T3 threat appraisals were also not significantly correlated to T3 challenge. All other correlations across variables were significant.

TABLE 8.2 HERE.

Hypothesis 1: Peer-Victimization will significantly predict symptoms of depression over time.

A cross-lagged panel model was estimated to examine the relationships between Peer-Victimization and Depressive Symptomatology. This model accounted for 13.1% in the variance in T3 Peer-Victimization ($R^2 = .13$), and 18.8% of the variance in T3 Depressive Symptomatology ($R^2 = .19$). Due to the saturated nature of the model the fit indices reflect a perfect fit to the data and are not reported (Kelloway, 2015). T1 Peer-Victimization predicted T3 Depressive Symptomatology, $b = 0.59$, $SEb = 0.11$, $\beta = 0.43$, $p < .001$, 95% CI [.28, .58]. In addition, T1 Depressive Symptomatology significant predicted T3 Peer-Victimization $b = 0.32$, $SEb = 0.06$, $\beta = 0.36$, $p < .001$, 95% CI [.21, .51].

Hypothesis 2: Primary appraisals of threat, blame, challenge and control, will mediate the relationship between peer-victimization and symptoms of depression over time.

In the second model, cognitive appraisals of Threat and Challenge were entered as mediators of the T1 Peer-Victimization to T3 Depressive Symptomatology relationship. This model was an acceptable fit to the data, RMSEA = .06, 90% CI [.04, .08], CFI = .95. The model accounted for 16.2% of the variance in Peer-Victimization at time 3 ($R^2 = .16$), and 31.1% of the variance in Depressive Symptomatology at time 3 ($R^2 = .31$). As shown in Table 3, T1 Peer-Victimization was significantly and positively associated with T3 Depressive Symptomatology and T1 Depressive Symptomatology significantly and positively associated with T3 Peer-Victimization. Regarding the mediating effects of Challenge and Threat Appraisal, a significant total indirect effect was present. However, neither Threat nor Challenge appraisals accounted for a significant portion of the mediated effect on their own. T1 Peer-Victimization was significantly and negatively associated with T2 Challenge Appraisal, but no significant relationship was found between T1 Peer-Victimization and T2 Threat Appraisal. T2 Challenge Appraisal was significantly and negatively associated with T3 Depressive Symptomatology, whereas T2 Threat Appraisal was significantly and positively associated with T3 Depressive Symptomatology.

TABLE 8.3 HERE

Hypothesis 3. Perceived social support from parents or teachers or close friends will moderate the relationship between peer-victimization and symptoms of depression. The relationship between peer-victimization and

symptoms of depression will be stronger for those with lower levels of perceived social support.

Three cross-lagged models were estimated, omitting cognitive appraisals as mediators and including sources of Perceived Social Support separately as possible moderators of the association between T1 Peer-Victimization and T3 Depressive Symptomatology. For Perceived Social Support from Close Friends, the model was a good fit to the data, RMSEA=0.06, 90% CI [.01, .12], CFI=0.97. The model accounted for 12.5% of the variance in T3 Peer-Victimization ($R^2=.13$), and 20.1% of the variance in T3 Depressive Symptomatology ($R^2=.20$). As shown in Table 8.4, consistent with models 1 and 2, T1 Peer-Victimization was associated with T3 Depressive Symptomatology, and T1 Depressive Symptomatology was associated with T3 Peer-Victimization. As shown in Table 4, T1 Perceived Social Support from Close Friends was not significantly associated with T3 Depressive Symptomatology and did not moderate the relationship between T1 Peer-Victimization and T3 Depressive Symptomatology.

Regarding Perceived Social Support from Parents/ Guardians, and Perceived Social Support from Teachers, neither model was a good fit to the data; for the parents/ guardian model, RMSEA=0.20, 90% CI [.15, .25], CFI=0.79, and for the teacher model, RMSEA=0.22, 90% CI [.17, .27], CFI=0.66. Therefore, the models are not reported for perceived social support from parents/ guardians, or for perceived social support from teachers.

Hypothesis 4: Perceived social support from parents or teachers or close friends will moderate the mediating role of primary appraisals on the relationship between peer-victimization and symptoms of depression.

Since no source of perceived social support moderated the relationship between T1 peer-victimization and T3 depressive symptomatology, no model was estimated to further assess this hypothesis (as per our pre-registered data analysis plan).

Discussion

Informed by the Transactional Model of Stress (Lazarus & Folkman, 1984), this pre-registered study sought to examine the role of cognitive appraisals of threat, challenge, control, blame and perceived social support in the longitudinal relationship between peer-victimization and depressive symptomatology. Across a three-month period, peer-victimization was associated with increases in depressive symptomatology, and depressive symptomatology was associated with increases in peer-victimization. No form of perceived social support moderated this relationship. A small significant total indirect effect for threat and challenge appraisal was found, however, independently neither threat nor challenge mediated the relationship between peer-victimization and depressive symptomatology. Despite this, peer-victimization at the start of the study was significantly associated with challenge, but not threat, appraisals one month later. Both threat and challenge appraisals were associated with depressive symptomatology one month later.

The longitudinal relationship between peer-victimization and depressive symptomatology

Findings of the current study support the first hypothesis as, even after controlling for earlier levels of depressive symptomatology, peer-victimization was significantly associated with depressive symptomatology after three months. Results also found that depressive symptomatology at the start of the study was associated with later peer-victimization. These findings lend further support to the notion of a reciprocal relationship between peer-victimization and depressive symptomatology reported in previous research (Reijntjes et al., 2010). Experiencing peer-victimization can challenge friendship and peer-group status goals (Thornberg, 2011). The aim of

those perpetrating such behavior is to demean and humiliate the target, to damage their social reputation and status (Juvonen & Graham, 2014). However, as also reflected in the findings of the cross-lagged panel analysis, higher levels of depressive symptomatology were associated with later peer-victimization. Adolescents with higher levels of depressive symptomatology may struggle with peer-relationships which may leave them vulnerable to victimization (Kaltiala-Heino et al., 2010; Reijntjes et al., 2010). The findings of the current study support previous research, which suggests that poor mental health can be both an antecedent and outcome to peer-victimization (Reijntjes et al., 2010).

The role of threat, challenge, control, and blame appraisals in the relationship between peer-victimization and depressive symptomatology

The current study found partial support for the second hypothesis. The mediating role of control and blame appraisals could not be tested due to the poor reliability of the scales. However, threat and challenge appraisals accounted for a significant though small total indirect effect in the relationship between peer-victimization and depressive symptomatology; yet neither was, on its own, a significant mediator. This total indirect effect reflects the sum of the specific indirect effects (Hayes, 2013) and was evidenced in the significant associations between peer-victimization, both threat and challenge, and subsequent symptoms of depression. This significant total indirect effect suggests that collectively threat and challenge appraisals play a role in explaining the association between peer-victimization and depressive symptomatology.

The inclusion of threat and challenge appraisals in the model accounted for an additional 13% of the variance in depressive symptomatology at the end of the

study, highlighting their role in the process of adapting to peer-victimization experiences. Although threat and challenge appraisals did not independently mediate the relationship between peer-victimization and depressive symptomology, other important associations between peer-victimization, challenge and threat appraisals, and depressive symptomology were present. After controlling for both appraisals at the start of the study, peer-victimization was negatively associated with challenge appraisal one month later. No association was found between peer-victimization and threat appraisal over the same period. Furthermore, both challenge and threat appraisals in the second month of the study were significantly associated with depressive symptomology the following month. Challenge appraisals were significantly associated with a decrease in such symptoms, while threat appraisals were associated with an increase. The findings of the current study are the first to highlight this pattern of outcomes in a peer-victimization context. From a socio-ecological perspective (Bronfenbrenner, 1979; Espelage & Swearer, 2003), such findings emphasize that individual-level appraisals play an important role in adolescents' adaptation to experiences of peer-victimization.

Both threat and challenge appraisals capture evaluations of the possible future implications of an event, but where threat appraisals reflect an evaluation of the risk of future personal harm, and challenge appraisals reflect a more positive eagerness to address the event (Palmwood & McBride, 2017). Although limited, research on children and adolescents' challenge appraisals of peer-victimization suggests such appraisals can capture an evaluation of positive outcomes following the experience, for example learning how to deal with bullying and how not to bully others, feeling there is an opportunity to make new friends, and thinking the bullying will stop

(Hunter & Boyle 2004). The more positive nature of challenge appraisals is highlighted in the association between challenge appraisals and a reduction in depressive symptomology reported in this study.

In contrast to challenge appraisals, threat appraisals can reflect an anticipation of possible harm or loss, or fear that the event may occur again in the future (Lazarus & Folkman, 1984). In a peer-victimization context such feelings can reflect the threat of psychological and physical consequences such as loss of confidence or being physically hurt, alongside the threat of increased peer-victimization and social isolation (Hunter & Boyle, 2004). In the current study, peer-victimization at the start of the study were not associated with threat appraisals one month later. However, threat appraisals in the second month of the study were significantly associated with depressive symptomology one month later, highlighting their negative impact.

The role of perceived social support in the relationship between peer-victimization and depressive symptomatology

Disconfirming the stress-buffering hypothesis (Cohen & Wills, 1985), perceived social support from *close friends* did not moderate the longitudinal relationship between peer-victimization and depressive symptomology. However, the lack of a moderating role of perceived social support from friends is consistent with previous research (e.g., Noret et al., 2019). This may relate to the unique nature of peer-victimization as a stressor, in that the goal of this behavior is to damage social status and social networks (Juvonen & Graham, 2014). As peer-victimization continues this may result in damage to friendships, resulting in support erosion (Slavin & Rainer, 1990) or further peer-rejection (Rueger, Malecki, Pyun, Aycock, &

Coyle, 2016). Thus, over time peer-victimization may be associated with a reduction in such support from friends, which in turn leads to depressive symptomology. Therefore, perceived social support may function as a mediator not a moderator in the longitudinal relationship between peer-victimization and poor mental health.

It was not possible to assess the moderating role of perceived social support from *teachers* and *parents/ guardians* as the pre-registered models were a poor fit to the data. This could reflect misspecification in the model, for example, the operationalisation of perceived support as moderating variables. Consistent with the discussion on perceived support from close friends, it may be that these variables are a better fit to the data if they are operationalized as mediators.

Limitations and future directions

The findings of this pre-registered study highlight the applicability of the Transactional Model of Stress (Lazarus & Folkman, 1984), and socio-ecological model for understanding the process and social context underpinning the relationship between peer-victimization and adjustment. A strength of our study is that it aimed to examine multiple cognitive appraisals from both an individual (threat, challenge, control, and blame appraisals) and micro-system level (perceived social support). The findings of the current study are the first to highlight the role of challenge appraisals in the relationship between peer-victimization and depressive symptomatology.

However, these findings should be considered in the context of some limitations. While well-validated measures were utilized in the study, all measures were self-report and as such social desirability may affect responses (Solberg & Olweus, 2003). Future research could consider the use of other methods, such as

peer-nomination, to supplement the self-report measure of peer-victimization. In the current study, measures of threat, challenge, control, and blame appraisals that had previously been documented as reliable (Catterson & Hunter, 2010) were used. However, the blame and control measures performed poorly in this study and for this reason were excluded from the analyses. Further work is required to develop well-validated measures of cognitive appraisals specific to peer-victimization to enable the examination of their role in the relationship between peer-victimization and negative outcomes.

The current study measured young people's experiences of peer-victimization alongside their cognitive appraisals and symptoms of depression once a month, over a three-month period. However, adolescents' recall of their appraisals following experiences of peer-victimization may be affected by time and be reframed or altered in some way (Didymus & Fletcher, 2012). Appraisals of peer-victimization may also change following the use of a coping strategy (reappraisal, Lazarus 1999). Furthermore, adolescents' appraisals may be affected by changes in their experiences of peer victimization, or by any damage to social networks and available support available from friends and peers (Juvonen & Graham, 2014). Employing greater use of diary methods offers the potential to provide more detail on adolescents' experiences of peer-victimization, but also the role of others, such as close friends, in the behavior (Seiffge-Krenke, 1995). Analysing diary entries would enable a more in-depth investigation of the in the moment appraisals of peer-victimization, alongside the analysis of how appraisals change in response to continued peer-victimization.

Implications for Practice

Many anti-bullying initiatives highlight the importance of enacting upon available support and talking to others about their experiences (e.g., Demaray & Malecki, 2006). The findings of the current study support previous research (e.g., Noret et al. 2020) which found no moderating role for perceived social support in the relationship between peer-victimization and adjustment. Further work is required to identify sources of support that may be helpful in tackling experiences of peer-victimization. Alternatively, future research could focus on developing alternative interventions to buffer the impact of peer-victimization on poor mental health.

Our results also speak to the relevance and importance of a focus on threat and challenge appraisals. Both these forms of appraisal were associated with subsequent reports of depressive symptomology and therefore offer avenues for intervention. Previous studies have demonstrated the effectiveness of interventions focusing on altering individual's appraisals of situations (e.g., Alter, Aronson, Darley, Rodriguez, & Ruble, 2010), or suggest cognitive behavioral therapy (CBT) as a means of altering cognitive appraisals (Jamieson, 2017). Gee et al.'s (2020) recent meta-analysis suggests that school-based interventions, such as CBT, are effective in reducing adolescents' symptoms of depression and anxiety. Such interventions could be integrated into existing anti-bullying programmes, as a means of equipping adolescents with the resources required to manage their experiences. Given the likelihood that peer-victimization will never be completely eradicated, such an approach may offer hope for young people experiencing ongoing aggression from their peers.

Conclusion

Peer-victimization continues to be a frequent experience and one that relates to the development of poor mental health. The results of this study are the first to highlight a role for challenge appraisals in this relationship. Such findings highlight the applicability of the transactional model of stress and socio-ecological model to the study of the relationship between peer-victimization and mental health. While the current study found no moderating role for perceived social support from friends, the role of threat and challenge appraisals in the development of depressive symptomology is highlighted. Such findings alternative avenues for intervention to support adolescents experiencing peer-victimization.

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Table 8.1 Participant demographics across the three time points

	Time 1 (T1) (N=533)	Time 2 (T2) (N=348)	Time 3 (T3) (N=238)
Gender			
Male	214 (40.2%)	143 (41.1%)	103 (43.3%)
Female	294 (55.2%)	197 (56.6%)	127 (53.4%)
Prefer not to say	20 (3.8%)	8 (2.3%)	8 (3.4%)
School Year			
Year 7/ S1	197 (37.0%)	156 (44.8%)	90 (37.8%)
Year 8/ S2	196 (36.8%)	119 (34.2%)	91 (38.2%)
Year 9/ S3	139 (26.1%)	68 (19.5%)	54 (22.7%)
Age (11 to 14 years)	\bar{x} =12.56, sd=0.92	\bar{x} =12.48, sd=0.90	\bar{x} =12.71, sd=0.85

Table 8.2 Descriptive statistics and correlations between all variables across the three time points.

	M(SD)	2	3	4	5	6	7	8	9	10	11	12	13
1. T1 PV	20.75 (6.31)	.69***	.41***	.46***	.46***	.35***	.39***	-.04	-.14**	-.23**	-	-	-
2. T3 PV	20.26 (6.99)	-	.38***	.53***	.41***	.47***	.44***	-	-.19*	-.23**	.25***	.22***	.21***
3. T1 Depression	18.30 (8.25)		-	.46***	.46***	.35***	.39***	-.04	-.14**	-	.23***	.25***	.22***
4. T3 Depression	16.42 (8.41)			-	.41***	.47***	.44***	-	-.19*	-.23**	.37***	.30***	.26***
5. T1 Threat	1.87 (0.70)				-	.64***	.57***	-.09*	-.13*	-	.25***	.17***	-.12*
6. T2 Threat	1.87 (0.70)					-	.61***	-.11	-.12*	-.22*	-.19**	-.11	-.08
7. T3 Threat	1.77 (0.71)						-	-.16*	-.18*	-.11	-.14*	-.13	-.06
8. T1 Challenge	2.64 (0.74)							-	.56***	.46***	.22***	.27***	.20***
9. T2 Challenge	2.72 (0.69)								-	.58***	.17**	.20**	.12*
10. T3 Challenge	2.54 (0.83)									-	.17*	.32***	.17*
11. T1 PSS Parents	60.01 (12.38)										-	.38***	.43***
12. T1 PSS Teacher	54.93 (13.10)											-	.41***
13. T1 PSS Close Friend	59.64 (13.43)												-

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8.3 Unstandardized and standardized paths for mediation model

	<i>b</i>	SE <i>b</i>	β	95% Bias-Corrected Bootstrap CI
Cross-lagged paths				
T1 victimization → T3 depression	0.40**	0.13	0.30	0.12, 0.47
T1 depression → T3 victimization	0.36***	0.06	0.40	0.25, 0.54
Stability paths				
T1 Threat → T2 threat	0.62***	0.06	0.61	0.51, 0.69
T2 Threat → T3 threat	0.84***	0.09	0.87	0.71, 1.01
T1 Challenge → T2 Challenge	0.50***	0.05	0.53	0.43, 0.62
T2 Challenge → T3 Challenge	1.01***	0.14	0.85	0.63, 1.09
Path As (Peer-Victimization → Appraisal)				
T1 victimization → T2 Threat	0.01	0.06	0.11	-0.01, 0.22
T1 victimization → T2 Challenge	-0.02**	0.01	-0.14	-0.27, -0.04
Path Bs (Appraisals → depression)				
T2 Threat → T3 depression	3.90**	0.84	0.34	0.20, 0.47
T2 Challenge → T3 depression	-1.64*	0.70	-0.14	-0.25, -0.02
Mediation				
Total Indirect Effect	0.07*	0.04	0.06	0.01, 0.11
Indirect Effect of Threat Appraisals	0.05	0.03	0.04	0.00, 0.09
Indirect Effect of Challenge Appraisals	0.03	0.02	0.02	0.00, 0.05

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8.4 Unstandardized and standardized paths for moderation model

	<i>b</i>	SE <i>b</i>	β	95% CI
Model 1: PSS Close Friend				
T1 Peer-Victimization → T3 Depression	0.59***	0.11	0.41	.28, .59
T1 Depression → T3 Peer-Victimization	0.31***	0.06	0.30	.20, .50
PSS Close Friend → T3 Depression	-0.07	0.05	-0.11	-.25, .03
T1 Peer-Victimization X PSS Close Friend → T3 Depression	0.01	0.01	0.12	-.08, .33

* $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER 9 DISCUSSION

Underpinned by the TMS (Lazarus and Folkman, 1984) and socio-ecological model (Bronfenbrenner, 1979; Espelage & Swearer, 2003) the aim of this thesis was to examine the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health. The results of the studies presented in this thesis highlight the role of cognitive appraisals, particularly threat and challenge, in this relationship. Therefore, the findings of the three studies demonstrate the applicability of employing the TMS (Lazarus and Folkman, 1984) and socio-ecological model (Bronfenbrenner, 1979; Espelage & Swearer, 2003) to the study of the relationship between peer-victimisation and poor mental health. In the following chapter, the key findings from the three studies will be synthesised and discussed in the context of existing literature. The implications of these findings for the development of our theoretical understanding of the relationship between peer-victimisation and poor mental health are also presented. This chapter also includes an evaluation of the studies conducted, alongside a discussion of the implications of the findings of this thesis for intervention work.

The relationship between peer-victimisation and poor mental health.

Both the cross-sectional study and the longitudinal study found a relationship between peer-victimisation and poor mental health. Findings of the cross-sectional study (Noret et al., 2020, see chapter 7) highlighted an association between being bullied and poor mental health. But this relationship was dependent on the type of bullying experienced. Consistent with some previous research findings (e.g., Hase et al., 2015), the results of the cross-sectional study found a significant relationship

between being bullied, but not being cyberbullied, and poor mental health. Studying cyberbullying in isolation fails to capture the overlap between these different forms of behaviour. Evidence suggests that cyberbullying rarely occurs in isolation from other bullying behaviours (Przybylski & Bowes, 2017). As such, claims suggesting cyberbullying is associated with poor mental health based purely on evidence examining this behaviour alone may overestimate this relationship. Therefore, the findings of the cross-sectional study lend further support to Olweus and Limber's (2018) argument that rather being researched in isolation, cyberbullying should be studied as part of the broader bullying context.

The longitudinal study (Noret et al., under review; see chapter 8) also found significant associations between peer-victimisation and depressive symptomology over a three-month period. Peer-victimisation was associated with depressive symptomology after three months, alongside, depression was significantly associated with later peer-victimisation. The relationship between peer-victimisation and poor mental health reported in both the cross-sectional and longitudinal study illustrates the distress caused by the behaviour (Storch & Ledley, 2005). Peer-victimisation is perpetrated to demean and humiliate someone else, damaging their peer-relationships and social status (Thornberg, 2011; Volk et al., 2019). Peer-relationships are of increased importance during adolescence (LaFontana & Cillessen, 2010; Pouwels et al., 2008) and experiencing peer-victimisation can relate to feelings of rejection which, in turn, can relate to poor mental health (Storch & Ledley, 2005). Alongside this relationship, results of the longitudinal study also reported an association between poor mental health and later peer-victimisation. Adolescents who struggle

with their mental health may also struggle with social isolation, which leaves them isolated and vulnerable to peer-victimisation (Kaltiala-Heino et al. 2010).

The findings reported in this thesis lend further support to the previous research documenting both a cross-sectional and longitudinal relationship between peer-victimisation and poor mental health (Hawker & Boulton, 2000; Reijntjes et al., 2010). The results presented in the cross-sectional study suggest the association between peer-victimisation and poor mental health may be dependent on the behaviour experienced and highlight the importance of not studying types of victimisation in isolation (Olweus & Limber, 2018). Furthermore, and consistent with previous longitudinal studies (Reijntjes et al., 2010), the results of the longitudinal study suggest that poor mental health is both an outcome and predictor of peer-victimisation (Reijntjes et al., 2010).

The role of cognitive appraisals in the relationship between peer-victimisation and mental health

The cognitive appraisal process involves an evaluation of the personal significance of an event (primary appraisal) alongside an evaluation of the resources available to the individual to manage the situation (secondary appraisal) (Lazarus, 1999; Lazarus & Folkman, 1984). Cognitive appraisals have been found to relate to a range of mental health outcomes following an event (Fearnow-Kenney & Kliever, 2000; Fosco & Feinberg, 2015) and therefore are argued to play an important role in individuals' adaptations to stressful situations (Lazarus, 1990). The findings of the systematic review reported in this thesis highlight that a range of cognitive appraisals have previously been investigated as either mediators or moderators of the

relationship between peer-victimisation and poor mental health (Noret et al., 2018, see chapter 4). From a socio-ecological perspective (Bronfenbrenner, 1979; Espelage & Swearer, 2003), these appraisals were from the individual and microsystem level of an adolescent's socio-ecology. From an individual level, the findings of the systematic review highlight that previous research has examined appraisals of threat, challenge, control, blame, coping self-efficacy, and global perceived social support in a peer-victimisation context. Whereas, from a microsystem level, measures of domain-specific perceived social support reflect an evaluation of support available from individuals within this system.

To date, the majority of research on the role of cognitive appraisals in a peer-victimisation context has tended to focus on a small number of cognitive appraisals, (Noret et al. 2018, see chapter 4). Therefore, multiple forms of perceived social support were examined in both the cross-sectional and longitudinal studies. In the cross-sectional study (Noret et al. 2020, see chapter 7) multiple forms of perceived social support were tested as moderators of the relationship between both being bullied and being cyberbullied and poor mental health. This study was the first to examine the role of these different forms of support in this relationship. The findings of the systematic review (Noret et al., 2018, see chapter 4) also highlight that research to date has tended to employ cross-sectional designs which makes it difficult to infer mediating relationships over time (Mackinnon, 2008). Therefore, the longitudinal study (see chapter 8) was the first study to consider the role of multiple cognitive appraisals in the longitudinal relationship between peer-victimisation and

poor mental health. In the following section, the key findings of these three studies will be synthesised and discussed in the context of previous research.

Challenge and Threat Appraisals. Challenge and threat appraisals reflect an evaluation of what is meaningful to the individual (Lazarus & Folkman, 1984). The findings of the systematic review highlight the role of threat appraisals in the relationship between peer-victimisation and adjustment. Three of the five studies included in the review, which measured threat appraisals, found a mediating role for these factors in the relationship between peer-victimisation and poor mental health. In each case, peer-victimisation was associated with poor mental health due to an increase in threat appraisals. Challenge appraisals had not previously been examined in the relationship between peer-victimisation and poor mental health. Therefore, the mediating effect of threat and challenge appraisals was examined further in the longitudinal study. This study was the first to examine both threat and challenge appraisals in the longitudinal relationship between peer-victimisation, and the first to report a role for challenge appraisals in this relationship.

In the longitudinal study, threat and challenge appraisals were included as mediators of the relationship between peer-victimisation and depressive symptomatology after three months. The inclusion of these appraisals led to an additional 13% of the variance being accounted for in depressive symptomatology at the end of the study. Furthermore, a significant but small total indirect effect was found for both threat and challenge appraisals in the relationship between peer-victimisation and depressive symptomatology. Including these appraisals in the analysis highlight the contribution they make in the development of depressive

symptomatology following experiences of peer-victimisation. Although neither appraisal independently mediated the relationship between peer-victimisation and depressive symptomatology, other important relationships were identified. Peer-victimisation was significantly and negatively associated with challenge appraisals after one month. Furthermore, both threat and challenge appraisals were associated with depressive symptomatology at the end of the study. Threat appraisals were significantly associated with an increase, whereas challenge appraisals were associated with a decrease in depressive symptomatology.

Threat appraisals include an evaluation of anticipated harm or loss as a result of an event (Lazarus, 1999). In contrast, challenge appraisals capture more positive evaluations, which can lead to more adaptive outcomes (Palmwood & McBride, 2017). In a peer-victimisation context, research with children and adolescents has identified that challenge and threat appraisals can reflect the anticipated positive and negative outcomes of the behaviour. Threat appraisals can reflect a fear of consequences such as being physically hurt, socially isolated, a loss of confidence, or the fear of increased peer-victimisation (Hunter & Boyle 2004; Taylor et al., 2013). In contrast, challenge appraisals reflect more positive outcomes such as learning how to deal with their experiences, feeling there is an opportunity to make new friends, and thinking the behaviour will stop (Hunter & Boyle 2004). This study is the first to report a role for challenge appraisals in the development of depressive symptomatology in a peer-victimisation context. The findings reported in this thesis highlight the role of both threat and challenge appraisals in adolescents' adaptations to peer-victimisation, supporting the notion that cognitive appraisals are directly

related to adjustment (e.g., Fearnow-Kenney & Kliwer, 2000; Fosco & Feinberg, 2015).

Control and Blame Appraisals. Control appraisals reflect an evaluation of personal control over an event, whereas blame appraisals consider self- or other-blame for the situation (Gerard et al., 2005; Terranova et al., 2011). The findings of the systematic review reported in this thesis identified that both these appraisals had been previously studied in a peer victimisation context. Two previous cross-sectional studies had found a mediating role for control appraisals in the relationship between peer-victimisation and depression and loneliness (Catterson & Hunter 2010; Hunter et al., 2010). However, no role has previously been found for blame appraisals. The mediating effect of control and blame appraisals could not be tested in the longitudinal study due to the poor reliability of the included measures. The poor reliability of the scales reported in the longitudinal study raise questions as to how best to measure these appraisals. The measurement of control and blame appraisals is discussed further in the evaluation of the thesis section below.

Perceived social support. Findings of the systematic review (Noret et al., 2018) highlight that, in a peer-victimisation context, both global and domain-specific forms of perceived social support are the more frequently researched forms of cognitive appraisal. The review highlighted inconsistent findings concerning whether these different forms of perceived social support are protective in a peer-victimisation context. In the current thesis, domain-specific measures of perceived social support were included in both the cross-sectional and longitudinal study. Measures of perceived social support from different individuals within the micro-

system were included to test the role of these various types of support in a peer-victimisation context. Consistent with the Stress Buffering Hypothesis (Cohen & Wills, 1985), in studies two and three domain-specific social support was defined as a moderating variable. The findings of studies two and three, alongside some of the data presented in the systematic review (e.g., Davidson & Demaray, 2007; Holt & Espelage, 2007), found no significant moderating effect for perceived social support from parents/ guardians, teachers, or close friends. There are several reasons why perceived social support in these domains may not moderate the relationship between peer-victimisation and poor mental health.

Domain-specific perceived social support reflects an evaluation of past experiences of accessing support from these individuals, including how helpful this support has been previously (Hodges et al., 1999). If such support is not positively evaluated, it will not play a protective role in the relationship between peer-victimisation and poor mental health (Camara, Bacigalupe, & Padilla, 2017). Adolescents may not evaluate social support from adults as useful for fear of any repercussions from those perpetrating the behaviour (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Oliver & Candappa, 2007). Adolescents may also fear not being believed, particularly by teachers, or may worry about the reactions of their parents/guardians (Fekkes et al., 2005; Oliver & Candappa, 2007). Such fears may reflect why these forms of perceived social support in these domains are not protective in the relationship between peer-victimisation and poor mental health.

Regarding the role of perceived social support from friends, neither the cross-sectional nor longitudinal study found a moderating role for this form of support.

These findings support some of the previous research highlighted in the systematic review (e.g., Davidson & Demaray, 2008). It may be that such support is not evaluated as particularly helpful as friends may be involved in perpetrating peer-victimisation (Mishna, Wiener, & Pepler, 2008) or may not know what to do to help. Alternatively, this lack of a role for perceived social support from friends may reflect damage to peer-relationships caused by peer-victimisation (Hodges et al., 1999). The lack of a moderating role for domain-specific forms of perceived social support reported in this thesis raises questions regarding the applicability of the stress-buffering hypothesis (Cohen & Wills, 1985) in a peer-victimisation context, which is discussed further in the following section.

The findings of the studies reported in this thesis highlight that cognitive appraisals play an important role in adolescents' adaptations to peer-victimisation. The first study undertaken, a systematic review (Noret et al., 2018, see chapter 4), identified that a range of cognitive appraisals have been previously investigated in a peer-victimisation context. The results of the cross-sectional and longitudinal study found no moderating role for the different forms of perceived social support. However, the findings of the longitudinal study, highlight the role of threat and challenge appraisals in the relationship between peer-victimisation and depressive symptomatology. This study is the first to highlight the importance of challenge appraisals in adolescents' adaptations to peer-victimisation. Collectively, these findings have important implications for our understanding of the relationship between peer-victimisation and poor mental health.

The Transactional Model of Stress & The Socio-Ecological Approach.

The aim of the current thesis was to test the hypothesised role of cognitive appraisals outlined by the TMS (Lazarus & Folkman, 1984), in the relationship between peer-victimisation and poor mental health. The TMS (Lazarus & Folkman, 1984) suggests that when experiencing a stressful event, individuals go through a process of cognitive appraisal and employ coping strategies, which determine the outcome of the event. From a social-ecological perspective (Bronfenbrenner, 1979; Espelage & Swearer, 2003), cognitive appraisals can reflect appraisals from different levels within adolescents' social ecology. The cross-sectional and longitudinal studies reported in this thesis were the first to consider cognitive appraisals from a socio-ecological perspective. In these studies, cognitive appraisals were drawn from an individual level (threat, challenge, control and blame appraisals), and microsystem level, through the inclusion of domain-specific perceived social support from parents/ guardians, teachers and close friends.

The results presented in the current thesis suggest that cognitive appraisals, particularly challenge and threat, play an important role in the relationship between peer-victimisation and poor mental health. Employing the TMS alongside a socio-ecological approach provides a useful framework for studying the relationship between peer-victimisation and poor mental health, where the TMS proposes the mechanisms for this relationship, and the socio-ecological model outlines the social context within which this process occurs. From this perspective, the findings of the current thesis highlight some possible directions for future research to develop

further our understanding of the relationship between peer-victimisation and poor mental health.

The nature of perceived social support. Consistent with the stress-buffering hypothesis (Cohen & Wills, 1985), perceived social support was operationalised as a moderating variable in both the cross-sectional and longitudinal study. From this perspective, the relationship between stressor and poor mental health is argued to be lower in those with greater perceived social support (Cohen & Wills, 1985). However, neither study in this thesis reported a significant moderating role for any of the included domain-specific forms of perceived social support. In a peer-victimisation context, the theoretical operationalisation of perceived social support as a moderator outlined in the stress-buffering hypothesis (Cohen & Wills, 1985) may not be appropriate. Continued peer-victimisation can result in a reduction in feeling liked by others, and feelings of isolation (Cantin et al., 2018; Thornberg, 2011). Peer-victimisation can also result in a loss of friendships, as friends and peers distance themselves from the situation to avoid becoming involved in the behaviour (Boulton, 2013b). As a result, in a peer-victimisation context, resources that are typically viewed as possible sources of support for managing stressful experiences more generally are damaged or reduced.

Rather than functioning as a moderator, perceived social support might function more as a mediator of the relationship between peer-victimisation and poor mental health. Analysing domain-specific sources of perceived social support as mediators would capture any causal sequence in the relationship, testing whether peer-victimisation is associated with poor mental health as a result of a reduction of

perceived support in these domains. In study three, the moderating role of perceived social support from parents/ guardians and teachers could not be tested as the models were a poor fit to the data. This poor fit may reflect a misspecification in the statistical model (Little, 2013). Therefore, further longitudinal data is required to test the mediating role of perceived social support in the longitudinal relationship between peer-victimisation and mental health.

To date, research on the role of perceived social support has examined global (Davis et al., 1998) or domain-specific (Pierce et al., 1991) perceived social support, with a particular focus on support from parents/ guardians, teachers, or friends. In the cross-sectional and longitudinal studies reported in this thesis, measures of perceived social support from parents/ guardians, teachers, or friends were included. However, from a social-ecological perspective, support can also be drawn from other domains. Within the microsystem, adolescents may also receive support from siblings, older peers, and extended family (Moos, 2002). From the broader macrosystem, support can also be accessed from professional sources of help, such as national helplines (e.g., ChildLine), which may also be a protective resource for adolescents experiencing peer-victimisation (Oliver & Candappa, 2007). Further research would benefit from examining the role of a broader range of support from adolescents' social environments in the relationship between peer-victimisation and mental health.

Type of cognitive appraisal. Research to date has examined a range of cognitive appraisals in a peer-victimisation context, including threat, challenge, control, and blame appraisals, alongside global and domain-specific social support and coping self-efficacy (Noret et al., 2018, see chapter 4). To date, the majority of

research on cognitive appraisals in a peer-victimisation context has focused on perceived social support and threat appraisals (Noret et al., 2018, see chapter 4). While the findings of the systematic review identified some studies that have examined coping self-efficacy, and blame and control appraisals (e.g., Anderson & Hunter, 2010; Barchia & Bussey, 2010), further work is needed to examine the role of such appraisals in the relationship between peer-victimisation and poor mental health.

Lazarus and Folkman (1984) also identified other cognitive appraisals, such as harm/ loss appraisals, which play a role in adaptation to events. Such appraisals have not yet been examined in a peer-victimisation context. Harm/loss appraisals reflect damage or harm that has already occurred as a result of an event (Lazarus, 1998). These appraisals can reflect emotional or physical injury or the loss of relationships or self-esteem (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) suggest that events which result in the loss of a goal or commitment (such as peer-relationship/ status goals) are most damaging. This harm or loss could reflect the damage or loss of peer-relationships and damage to peer-status goals caused by peer-victimisation. Theoretically, this could explain further the relationship between peer-victimisation and poor mental health. As discussed, one possible explanation for the lack of a moderating role of perceived social support from friends might be due to the damage or loss to these relationships as a result of experiencing the peer-victimisation. Such damage may be reflective of harm or loss appraisals, which may directly influence the relationship between peer-victimisation and poor mental

health. Further research would benefit from examining harm and loss appraisals in a peer-victimisation context.

The findings of this thesis highlight the role of cognitive appraisals in adolescents' adaptations to peer-victimisation. The TMS proposes that several individual and situational factors can influence the cognitive appraisal process (Lazarus and Folkman, 1984). Understanding the situational and individual factors that influence these appraisals is an important next step in developing our understanding of the appraisal process in a peer-victimisation context.

Individual factors. When individuals evaluate the personal significance of an event, they do so in the context of their own goals and motivations (Lazarus and Folkman, 1984). Lazarus (1990) argued that if an event does not risk the achievement of a goal, there is no stress or emotional outcome. In a peer-victimisation context, peer-victimisation is perpetrated with the intent of gaining power and social status (Volk et al., 2019). As social relationships increase in importance, experiencing peer-victimisation challenges relationship goals by leaving those being victimised isolated and with lower social status (Thornberg, 2011). Future research examining the relationship between peer-victimisation would benefit from including measures of social goals (e.g., the social goals questionnaire, Jarvinen & Nicholls, 1996). Including such measures would enable us to capture what social goals are challenged by peer-victimisation and how this relates to threat and challenge appraisals.

Situational factors. Experiences of peer-victimisations can vary with regards to the frequency, duration of and consistency of the behaviour (Kochenderfer-Ladd

& Wardrop, 2001; Unnever & Cornell, 2004). These different characteristics of peer-victimisation reflect various situational factors that can impact on how an event is appraised (Lazarus & Folkman, 1984). Situational factors relating to an event can include characteristics such as the novelty or predictability of the experience. Temporal factors reflect situational characteristics such as the imminence or the degree of uncertainty evident in the event, the incubation period between appraising a situation as threatening and the event occurring, and the duration of the experience (Lazarus & Folkman, 1984). Although limited, evidence suggests that characteristics such as commencement and continuation of peer-victimisation is associated with the development of poor mental health (Kochenderfer-Ladd & Wardrop, 2001; Rueger et al., 2011). However, to date, there is no evidence on the impact of the situational characteristics of peer-victimisation and how the experience is appraised. Such evidence would aid our understanding of the relationship between peer-victimisation and cognitive appraisals.

Regarding temporal factors, specifically the duration of the experience, parallels can be drawn with the concept of the chronosystem described in the socio-ecological model (Bronfenbrenner, 1979). This system highlights the importance of the change and consistency in experiences that may have an impact on individuals (Bronfenbrenner, 1979). The duration of peer-victimisation may damage resources that could help tackle peer-victimisation and impact on the way the experience is appraised. For example, challenge appraisal occurs when individuals evaluate that they have the resources available to help manage the situation. However, in a peer-victimisation context, the availability of such resources (such as perceived social

support) may change over time and, as a result, such appraisals may decrease while appraisals of threat may increase (Blascovich & Mendes, 2001).

From a socio-ecological perspective (Bronfenbrenner, 1979), other situational factors, such as school climate (part of the macrosystem) may play a role in the way in which experiences of peer-victimisation are appraised. Previous research has demonstrated how school climate is associated with the way adolescents cope with peer-victimisation (Eliot et al., 2010) and influence the relationship between peer-victimisation and negative outcomes (Turner et al., 2014). To date, the relationship between school climate and cognitive appraisals has not been examined.

Theoretically, such factors could impact on the way the experience is appraised as threatening or challenging or influence the evaluation of helpful resources available to manage the experience.

The individual and situational factors, outlined in the TMS (Lazarus & Folkman, 1984) and the socio-ecological model (Bronfenbrenner, 1979) may play a role in how peer-victimisation is appraised. But to date, the influence of such characteristics on the appraisal of peer-victimisation has not been studied. Future research would benefit from examining the nature of peer-victimisation experiences in more detail, for example using diary studies, to capture in greater detail the nature of experiences of peer-victimisation including situational and temporal characteristics of the event. Understanding how such situational and temporal characteristics of peer-victimisation play a role in the appraisal process is an important next step in understanding the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health.

Different outcomes. Research to date has highlighted the impact experiencing peer-victimisation can have on poor mental health (see Table 2.1). Employing a TMS approach to the study of peer-victimisation would enable further investigation of whether different cognitive appraisals of peer-victimisation are related to various aspects of mental health. From a broader stress perspective, evidence to date has highlighted how different cognitive appraisals of the event are associated with different outcomes. For example, Siemer, Mauss, and Gross (2007) found variations in the emotional outcomes in response to the same event. They found anger was associated with appraising the situation as someone else's responsibility, and sadness was associated with a lack of control over the event. Although limited, some studies have examined the relationship between different cognitive appraisals and different outcomes in a peer-victimisation context. For example, in their study of 146 10 to 13-year-old pupils, Anderson and Hunter (2012) found that all forms of peer-victimisation measured (physical, verbal, and indirect aggression) were significantly associated with sadness and anger. However, no form of cognitive appraisal mediated these relationships. Investigating the role of a range of cognitive appraisals in the association between peer-victimisation and poor mental health will aid the further development of our understanding of these relationships.

Evaluation of the thesis

While the findings of this thesis highlight some important findings regarding the relationship between peer-victimisation, cognitive appraisals and poor mental health, the results should be considered in the context of the strengths and weaknesses of the research undertaken.

Open Science. A notable strength of the studies undertaken in the thesis is the clear theoretical underpinning which related to how bullying and peer-victimisation are defined and measured. The three studies were underpinned by the TMS and socio-ecological model. This theoretical approach informed the identification of relevant variables for the systematic review and informed the operationalisation of the various cognitive appraisals as moderators or mediators. This approach adheres to the bullying research checklist recommendations set out by Volk et al. (2017). They suggested that a strong theoretical rationale should underpin research examining causal relationships with peer-victimisation. Furthermore, both the cross-sectional and longitudinal study adhered to the principles of open science through open data sharing, and the longitudinal study was pre-registered in advance of the data collection. Adhering to such principles of open science has the potential to improve the quality and transparency of peer-victimisation research (Frankenhuis & Nettle, 2018; Hunter et al., in press).

Measuring peer-victimisation. Research to date can be challenging to synthesise due to the way the terms peer-victimisation and bullying are used interchangeably (Casper et al., 2015). Therefore, when researching these behaviours, the definitions employed should be made explicit, and measures related to those definitions should be used (Volk et al., 2017). In both the cross-sectional and longitudinal studies attempts were made to ensure that the measure of being bullied (the cross-sectional study) and experiencing peer-victimisation (the longitudinal study) were clearly described and underpinned by the definitions being used in the thesis.

The cross-sectional study involved the secondary data analysis of an existing data set. The measure of bullying used had been developed in consultation with schools and professionals from the local community. As a local authority wide project, local teachers, pupils, representatives from the police, and local authority worked collaboratively to ensure the measure was appropriate for the way bullying was discussed in local schools. The original study was conducted in this way to ensure the questionnaire provided a reliable measure of bullying in the local community. While the questionnaire data were analysed using exploratory factor analysis (Noret et al., 2020; see chapter 7), no further psychometric testing of the scale was undertaken. Future research could conduct additional psychometric testing of this scale to develop this measure further.

The short version of the Personal Experiences Checklist (PECK-SF) was used as the measure of peer-victimisation in the longitudinal study. Both the PECK and PECK-SF are well-validated measures of peer-victimisation (Hunt et al., 2012; Prinz et al., 2019). However, the PECK-SF had not previously been tested for invariance over time, to ensure it is an appropriate measure for longitudinal studies. Invariance (equivalence) testing is an important statistical technique to ensure measures are testing the same thing across conditions (Putnic & Bornstein, 2016). However, such analyses are not frequently used in bullying research (Vessey et al., 2014). Data from the PECK were tested for invariance over time, and the results highlighted that the scale was an appropriate measure for the longitudinal study.

Both measures used in the thesis captured experiences of being bullied or experiencing peer-victimisation over the previous month. As discussed, adolescents'

previous experiences of peer-victimisation may play a role in how their current experiences are appraised and the subsequent impact on mental health. Therefore, future research could consider including a retrospective measure of peer-victimisation to capture any earlier experience that may play a role. Some scales (e.g., Schafer et al., 2004) include single items on the duration of previous experience which could be included in studies of peer-victimisation. Future research could also consider the further development of measures to capture any earlier experience of peer-victimisation accurately.

While attempts were made to use reliable and well-validated measures of bullying or peer-victimisation, both questionnaires were self-report measures. Such tools can provide an efficient and less time-consuming approach to measuring these behaviours. There are, however, some limitations to such measures of peer-victimisation and bullying (Volk et al., 2017). There are concerns over whether pupils are likely to answer in a socially desirable way, or whether they may not recognise the behaviour they are experiencing as bullying or peer-victimisation (Volk et al., 2017). As an alternative to self-report measures, other techniques such as peer or teacher nomination could be used (Mehari, Waasdorp, & Leff, 2018).

Measuring cognitive appraisals. The findings of the systematic review highlight that a range of cognitive appraisals have been examined in a peer-victimisation context. These include threat, challenge, control, and blame, alongside coping self-efficacy and general and domain-specific perceived social support. In both the cross-sectional and longitudinal studies of the present thesis, multiple forms of appraisals were measured. From a statistical perspective, including multiple

measures in the analysis enables us to capture the unique and shared variance across variables and to identify which variables may be more strongly uniquely associated with the outcome variable (Little, 2013). Furthermore, from a theoretical perspective, capturing multiple forms of appraisals enables the identification of the more salient appraisals in the relationship between peer-victimisation and mental health (Bokhorst et al., 2009).

Regarding perceived social support, focusing on only one form of support may overestimate the impact of that support. Instead, it is beneficial to measure perceived support from multiple sources to understand the collective impact of this support, while also examining which support may be particularly helpful when faced with a challenging event (Pössel et al., 2015). To date, perceived social support has been measured in several different ways. Measures of perceived social support include single-item measures (e.g., Elgar et al., 2014) and more rigorously validated measures (Malecki & Demaray, 2002). This diversity in measurement may contribute to the inconsistent findings on the role of perceived social support in the relationship between peer-victimisation and mental health.

Alternatively, the lack of a moderating role of perceived social support may reflect the nature of the measures used. The survey for longitudinal study included a copy of the well-validated child and adolescent social support scale (CASSS) (Malecki & Demaray, 2002). The CASSS captures adolescents' general perceptions of their available social support to manage challenging situations (Malecki & Demaray, 2002). The scale does not, however, measure how useful the included domains of available support are in managing experiences of peer-victimisation.

Therefore, the CASSS may reflect an attribution rather than an appraisal of perceived social support, capturing more of an understanding of the usefulness of available support to manage stressful situations more broadly (Lazarus, 1990; Malecki & Demaray, 2002; Smith et al., 1993). Further research is needed to examine adolescents' perceptions of the usefulness of different domains of social support specific to managing experiences of peer-victimisation.

Measuring other forms of cognitive appraisal can also be challenging. The threat, challenge, control, and blame scales included in the longitudinal study explicitly focused on these appraisals in a peer-victimisation context. The measures chosen had previously been found to be reliable (Catterson & Hunter, 2010; Hunter et al., 2004, 2010). The challenge appraisal scale was adapted to include an additional item reflecting a general evaluation of the possibility of positive outcomes. The reliability of the challenge scale reported in this study was higher than previously reported (Hunter et al. 2004), suggesting that this additional item improved the reliability of the measure. The blame and control appraisal scales were found not to be reliable and were not included in the analyses. Therefore, future research should focus on the development of psychometrically sound measures of blame and control appraisals of peer-victimisation.

The cognitive appraisal scales included in the longitudinal study captured participants' appraisals of their experiences of peer-victimisation over the previous month. Such self-report measures provide a straightforward measure of cognitive appraisals. However, they may be affected by the accuracy of participants' memories of the events (Didymus & Fletcher, 2012), or altered through reappraisal after a

coping strategy has been employed (Lazarus, 1999). Diary studies offer an alternative or supplementary approach to measuring cognitive appraisals. Diaries provide the possibility of capturing experiences and appraisals of peer-victimisation as they happen (Didymus & Fletcher, 2012). Methods such as the Stressor Appraisal Log (SAL) (Hanton, Wagstaff, & Fletcher, 2012) ask participants to discuss the nature of the experience, how it was appraised, alongside descriptions of how participants coped with their experiences. This approach provides a more in the moment account of the event, alongside any changes in the experiences which may influence the appraisal process.

Previous diary studies of experiences of peer-victimisation have captured the nature and frequency of the experience (e.g., Akiba, 2004; Pellegrini & Bartini, 2000), alongside characteristics of the peer-victimisation experiences, such as the detail of those involved (Nishina & Bellmore, 2010). In their study of 188 adolescents, employing the use of a diary measure, Pouwels et al. (2016) found that daily reports of peer-victimisation were associated with daily feelings of worthlessness, sadness, loneliness, insecurity, and anxiety. However, to date, there have been no diary studies of the relationship between peer-victimisation, cognitive appraisals, and poor mental health. Future research on the role of cognitive appraisals in adolescents' adaptations to peer-victimisation should consider employing a diary study methodology. Adolescents' diaries offer the potential to provide more detail on the experience of peer-victimisation, any changes to the behaviour, but also the role of others, such as close friends (Seiffge-Krenke, 1995). Such methods, while more time consuming, provide more detail on the event, capturing pertinent individual and

situational characteristics, alongside participants' appraisals of the events as they happen, while attempting to address any recall challenges (Hanton et al., 2012).

Implications for Practice

Peer-victimisation is a frequent experience for many adolescents (Juvonen & Graham, 2014), and as highlighted in the results of both the cross-sectional and longitudinal studies, is associated with poor mental health. While there has been a concerted effort to develop interventions to tackle peer-victimisation in schools, such interventions typically only result in moderate reductions in the behaviour (see Table 2.2) as such many adolescents continue to be vulnerable to the effects of peer-victimisation. Therefore, alongside focusing on developing interventions to reduce peer-victimisation effectively, research also needs to focus on developing interventions to support adolescents to cope with their experiences of peer-victimisation. Several interventions exist which focus on encouraging those experiencing peer-victimisation to seek help and enact upon available forms of social support (Demaray & Malecki, 2006). Yet the evidence presented in this thesis suggests evaluations of such support may not always be protective or helpful. The findings of this thesis highlight the relevance and importance of threat and challenge appraisals. Both these forms of appraisal were associated with subsequent reports of depressive symptomology and therefore offer alternative avenues for intervention.

Lending from work on stress more broadly, interventions focusing on reframing an experience as a challenge rather than a threat (e.g., Alter et al., 2010; Williams et al., 2010) may offer an alternative approach for intervention and supporting adolescents with their experiences of peer-victimisation. Previous studies

have demonstrated the effectiveness of experimental manipulations on altering individual's appraisals of situations (e.g., Alter et al. 2010) or suggest cognitive behavioural therapy (CBT) as a means of changing cognitive appraisals (Jamieson, 2017). CBT uses a variety of techniques to encourage individuals to alter their interpretations and thinking patterns relating to the event (Brewin, 1996). In their recent meta-analysis, Gee et al. (2020) suggest that school-based interventions incorporating CBT techniques are effective techniques for reducing adolescents' symptoms of depression and anxiety. Therefore, such methods offer additional avenues for intervention that could be integrated into existing anti-bullying intervention.

CHAPTER 10 CONCLUSION

Underpinned by the TMS (Lazarus & Folkman, 1984) and the socio-ecological model (Bronfenbrenner, 1979), the aim of this thesis was to examine the role of cognitive appraisals in the relationship between peer-victimisation and poor mental health. Alongside evidence that has demonstrated an association between peer-victimisation, cognitive appraisals, coping style and adjustment (Hunter & Boyle 2004; Raskauskas & Huynh, 2015; Terranova, 2009) the findings of this thesis support the applicability of the TMS for explaining the relationship between peer-victimisation and poor mental health. While the TMS (Lazarus & Folkman, 1984) proposes the process for how peer-victimisation predicts poor mental health, the socio-ecological approach (Bronfenbrenner, 1979) outlines the context within which this process occurs. In the current thesis, cognitive appraisals were drawn from the individual level (threat and challenge appraisals) and microsystem (domain-specific sources of support) within adolescents' social environment. Viewing cognitive appraisals from a socio-ecological perspective enables us to capture different factors in the social environment that may influence the cognitive appraisal process.

The first study undertaken, a systematic review, identified that a range of cognitive appraisals have been previously investigated in a peer-victimisation context. These include threat, challenge, control, and blame appraisals alongside aspects of perceived social support and coping self-efficacy. The findings of the review highlight that cognitive appraisals are important factors that can moderate or mediate the relationship between peer-victimisation and poor mental health, aiding our understanding of individual variation in adaptations to experiences of peer-

victimisation. The role of perceived social support from parents/ guardians, teachers, and friends, alongside appraisals of threat, challenge, control, and blame, were examined in studies two and three. The cross-sectional study (Noret et al., 2020; see chapter 7) was the first to examine the role of multiple sources of perceived social support, from within the microsystem, in the relationship between both being bullied and being cyberbullied and poor mental health. Furthermore, the longitudinal study (Noret et al., under review; see chapter 8), was the first to examine multiple forms of cognitive appraisals in the longitudinal relationship between peer-victimisation and depressive symptomatology. Neither study found a moderating role for the different types of perceived social support. The findings of the longitudinal study, however, did highlight the role of threat and challenge appraisals in the longitudinal relationship between peer-victimisation and depressive symptomatology. This study is the first to highlight the importance of challenge appraisals in this relationship.

The findings of this thesis, and the theoretical approach employed, highlight several important avenues for future research. The importance of adhering to the principles of open science is also highlighted in this thesis, and future research should continue to engage with such practices. Future research should make greater use of diary techniques to record more in-depth reports of adolescents' experiences and appraisals of peer-victimisation. Such methods would capture a more detailed account, including changes in the experience, pertinent individual and situational characteristics of the behaviour, individuals' appraisals of their experiences of peer-victimisation. Further longitudinal studies are also required to test the role of different cognitive appraisals in the relationship between peer-victimisation and

different aspects of poor mental health. Both diary studies, and further longitudinal survey studies, would contribute to developing our understanding of the complex relationship between peer-victimisation, cognitive appraisals, and poor mental health.

Peer-victimisation continues to be a frequent experience for many adolescents (Juvonen & Graham, 2014). Consistent with previous research, the findings of this thesis highlight that poor mental health can be both a cause and consequence of peer-victimisation. The results of the three studies demonstrate the applicability of employing the TMS (Lazarus and Folkman, 1984) and socio-ecological model (Bronfenbrenner, 1979; Espelage & Swearer, 2003) to the study of the relationship between peer-victimisation and poor mental health. The importance of threat and challenge appraisals reported in this thesis offers a different focus for possible intervention. Supporting adolescents to reframe their cognitive appraisals of peer-victimisation may provide another avenue for intervention, which could be integrated into existing anti-bullying programmes. As many adolescents continue to be vulnerable to the effects of peer-victimisation, such interventions would provide an important opportunity to support adolescents to manage and cope with their experiences of peer-victimisation.

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APPENDICES

Appendix i: Ethical approval for the cross-sectional study

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UNIVERSITY

University Research Ethics Committee

York St John University
Lord Mayor's Walk
York YO31 7EX

+44(0)1904 624 624
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Confirmation that Ethical Approval had been considered and approved in line with the committee's terms of reference for the following research project:

Researcher	Nathalie Noret
UREC Ref	UC/3/2/11/NN2
Title of Research	Stand Up for Us 2011
School	School of Health Sciences
Internal Collaborations	N/A
External Collaborations	N/A
Start Date of Project	April 2011
Duration of Project	September 2014

Comments:

Signed:

Prof A Hill, PVC Research

Date: 3 March 2020



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Appendix ii: Study two survey.

The cross-sectional study, study 2 (see chapter 7) analysed a secondary data set. The data were collected through an online survey, the relevant questions are presented below.

Stand Up for Us 2013 Secondary Survey

5. About being bullied



This section of the survey will ask you about your experiences of being a victim of bullying.

Remember, being bullied means that you have been intentionally hurt (meaning someone did it on purpose) and that you were hurt by one person or a group of people more than once.

29. During the last month, have you been bullied in any of the following ways?

To answer this question, click on the arrow next to each white box and choose an option. If you have not been bullied in the last month please go down to the bottom of the page and click on next page.

	How often?	How much did it upset you?
Being hit or kicked, being punched	<input type="text"/>	<input type="text"/>
Threatened with being hurt	<input type="text"/>	<input type="text"/>
Been called names, or been insulted	<input type="text"/>	<input type="text"/>
Been ignored by others	<input type="text"/>	<input type="text"/>
Had rumours spread about you	<input type="text"/>	<input type="text"/>
Have you been left out of a group	<input type="text"/>	<input type="text"/>
Have you been frightened by a look or stare	<input type="text"/>	<input type="text"/>
Received nasty text messages	<input type="text"/>	<input type="text"/>
Received nasty e-mails	<input type="text"/>	<input type="text"/>
Been blocked from an on-line conversation	<input type="text"/>	<input type="text"/>
Had something hurtful posted on a social networking site (e.g. Facebook, Bebo),	<input type="text"/>	<input type="text"/>
Had someone post an embarrassing photo or video of you on a website	<input type="text"/>	<input type="text"/>
Other ways	<input type="text"/>	<input type="text"/>

Stand Up for Us 2013 Secondary Survey

51. If you were in trouble or were concerned about something personal who would you confide in (who would you talk to)?

Please select all the answers that apply to you.

- No one
- Brother or Sister
- Parent or person who looks after me
- Aunt, uncle or cousin
- Grandparents or Grandparent
- Friend
- Boy-friend or Girl-friend
- Older pupil
- A teacher or house tutor
- House master/ mistress
- Deputy Head
- Assistant Head (Pastoral)
- Assistant Head (Academic)
- Prefect
- School Nurse
- School Counsellor
- Chaplain
- PSHE Co-Ordinator
- Youth Worker
- Peer Mentor (bully counsellor or buddy)
- Non-teaching staff
- Other

Other, who?

Stand Up for Us 2013 Secondary Survey

9. About how you are feeling



The following questions explore how you have been feeling over the past month.

52. Have you recently been able to concentrate on what you're doing?

- Better than usual
- Same as usual
- Less than usual
- Much less than usual

53. Have you recently....

	Not at all	No more than usual	Rather more than usual	much more than usual
Lost much sleep over worry?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt you couldn't overcome your difficulties?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt constantly under strain?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been feeling unhappy and depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been losing confidence in yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been thinking of yourself as a worthless person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix iii: Ethical approval for the longitudinal study



SCHOOL OF PSYCHOLOGICAL SCIENCES & HEALTH

30th January 2018

Dr Simon Hunter
School Psychological Sciences and Health
University of Strathclyde
40 George Street
Glasgow
G1 1QE

Dear Dr Hunter

Project Title: The role of primary and secondary appraisals in the relationship between peer-victimisation and adjustment: A longitudinal study.
Project Ethics Approval Number: 30/01/18/04/A

The School Ethics Committee has reviewed the above project and has approved it. You may begin the study immediately.

Yours sincerely

A handwritten signature in cursive script that reads 'Diane Dixon'.

Dr Diane Dixon
Chair
School of Psychological Sciences and Health Ethics Committee
University of Strathclyde
40 George Street
Glasgow
G1 1QE

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Appendix iv: Pre-Registration

THOUGHTS AND FEELINGS ABOUT BULLYING: PRE-REGISTRATION.

Date registered: February 13, 2018

Noret, N., Hunter, S. C., & Rasmussen, S. (2018, February 13). Thoughts and feelings about bullying. Retrieved from osf.io/cx9fe

STUDY INFORMATION

Title

The role of primary and secondary appraisals in the relationship between peer-victimisation and adjustment: A longitudinal study.

Authors

[Nathalie Noret](#), [Simon Hunter](#), and [Susan Rasmussen](#)

Research questions

Peer-victimisation is a frequent experience for many children and adolescents, and one that relates to poor adjustment in the short- and long-term. While the relationship between peer-victimisation and adjustment is seemingly well established (Reijntjes et al., 2011; Reijntjes, Kamphuis, Prinzie, and Telch, 2010), the mechanisms that explain this relationship are not as well understood. The transactional model of stress (TMS) (Lazarus and Folkman, 1984) and the socio-ecological perspectives on bullying (e.g., Espelage, 2014) provide a possible framework for understanding the process through which, and the social context within which, peer-victimisation can predict adjustment. Underpinned by the TMS, evidence suggests that primary appraisals (e.g., of the evaluation of the experience as being within the victims control or being threatening) and secondary appraisals (e.g., perceived social support) play a role in the relationship between peer victimization and adjustment. To date however, research has tended to test the role of primary and secondary appraisals separately, and has tended to employ cross-sectional designs making it difficult to infer causal relationships (Noret, Hunter, and Rasmussen, 2018). Therefore, the aim of this study is to test whether primary appraisals mediate, and secondary appraisals moderate, the relationship between peer-victimisation and symptoms of depression over time.

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10.1080/15388220.2017.1423492. Reijntjes, A., Kamphuis, J. H., Prinzie, P., Boelen, P. A., van der Schoot, M., and Telch, M.J. (2011). Prospective linkages between peer victimization and externalizing problems in children: A meta-analysis. *Aggressive Behavior*, 37, 215-222. doi:10.1002/ab.20374.

Reijntjes, A., Kamphuis, J. H., Prinzie, P., and Telch, M. J. (2010). Peer victimisation and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse and Neglect*, 34, 244-252. doi:10.1016/j.chiabu.2009.07.009.

HYPOTHESES

The aim of this study is to test whether primary appraisals mediate, and secondary appraisals moderate, the relationship between peer-victimisation and symptoms of depression over time. Specifically, we aim to test the following hypotheses: H1 Peer-Victimisation will significantly predict symptoms of depression over time. H2 Primary appraisals of threat, blame, challenge and control, will mediate the relationship between peer-victimisation and symptoms of depression over time. H3 Perceived social support from parents or teachers or close friends will moderate the relationship between peer-victimisation and symptoms of depression. The relationship between peer-victimisation and symptoms of depression will be stronger for those with lower levels of perceived social support. H4 Perceived social support from parents or teachers or close friends will moderate the mediating role of primary appraisals on the relationship between peer-victimisation and symptoms of depression. Specifically, perceived social support from parents, or teachers, or friends will moderate the relationships between peer-victimisation and each of the four types of primary appraisal.

SAMPLING PLAN

Existing Data

Registration prior to creation of data

Explanation of existing data

N/A

Data collection procedures

Participants will be recruited in three ways; 1) directly through schools, 2) through community groups, and 3) directly through parents. School recruitment Head-teachers will be contacted directly with a request to participate in the study. Once schools have replied, data collection arrangements will be made and consent letters will be sent to parents. On the days of data collection, participants whose parents/guardians have consented to their participation will be provided with an information sheet and given the opportunity to assent to participate in the study. Any pupil whose parents/guardians did not consent, or do not want to participate themselves, will be provided with an alternative activity to undertake, as agreed with the school.

Recruitment through community groups We will contact community organisations working with adolescents to seek their permission to conduct the study with their members. This will include contacting organisations such as the Scouts, Guides, and

sports clubs. We will seek permission to conduct the study with group members, or alternatively if this is too great a time commitment, we will ask organisations whether they are happy to forward the information to the parents/ guardians of their members. Recruitment directly through parents We will also recruit adolescents through direct contact with their parents/ guardians. We aim to contact parents/ guardians to ask if they would be happy for their child to participate in the study. If they are, we would ask for them to share the link to the questionnaire with their adolescent, which we would infer as passive consent. The child would then be presented with the participant information sheet and asked whether they would be happy to participate in the study. We plan to advertise the study to parents/ guardians in the following ways: through social media such as Facebook and Twitter, and through organisations such as Mumsnet.com. We will also recruit parents through schools. If the project is too great a time commitment, we will ask whether they are happy to forward the information to the parents/ guardians of their pupils.

No files selected

Sample size

The target sample is at least 200 participants. Participants will be adolescents aged 11 to 14 years old.

Sample size rationale

Focusing specifically on moderating effects in regression analysis, Aguinis, Beaty, Boik, and Pierce (2004) suggest that in order to detect a small effect ($f^2=0.02$), with a power of 0.8, a minimum sample size of 158 would be needed. Given the longitudinal design to be used, we intend to recruit a minimum sample size of 200 adolescents. References Aguinis, H., Beaty, J. C., Boik, R. J., and Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: a 30-year review. *Journal of Applied Psychology*, 90(1), 94-107, DOI: 10.1037/0021-9010.90.1.94.

Stopping rule

N/A

VARIABLES

Manipulated variables

N/A

No files selected

Measured variables

A questionnaire has been developed for the purposes of the study, which will be administered either in paper version or online using Qualtrics. The first section of the questionnaire includes demographic questions. The questionnaire also includes a number of validated scales, including: Peer-Victimisation: A short version of the personal experiences checklist (PECK) (Hunt, Peters and Rapee, 2012) will be used to assess experiences of peer victimisation. The questionnaire includes 14 items related to relational-verbal, physical, cyber victimisation and victimisation based on

culture. Participants will be presented with the instruction “Thinking about the last month or so at school, how often do the following things happen to you?” and then asked to rate each of the 14 items on a five-point frequency likert scale ranging from 0 = “never” to 4 = “everyday”. For example, items include questions such as: “Other kids hit me.” Primary appraisals: Measures of threat, control, blame and challenge appraisals will be included in the questionnaire. The four-item measure of threat appraisal developed by Hunter et al. (2004, 2010) will be used. These four items are rated on a four point likert scale ranging from 1 = “not likely” to 4 = “very likely”. For example, items include statements such as “You will feel bad about yourself “. Challenge appraisal will be measured using five items developed by Hunter et al. (2004) and Hood, Power, & Hill (2009). These five items are rated on a four point likert scale ranging from 1 “not likely” to 4 “very likely”. For example, items include statements such as “More and more people will be nasty to you”. To measure control appraisals, the seven-item scale developed by Catterson and Hunter (2010) will be used. These seven items are rated on a five point likert scale ranging from 1= “always true” to 5=“not true at all”. The control scale includes statements such as “If other kids pick on me, I am able to stop them”. Blame appraisals will be measured using an seven-item scale developed by Catterson and Hunter (2010). These seven items are rated on a five point likert scale ranging from 1= "always true" to 5="not true at all". For example, items include statements such as “It happens to me but not other kids”. Secondary Appraisals: Perceived social support: A copy of the child and adolescent social support scale (CASSS) (Malecki and Demaray, 2002) will be used. The CASSS is a 60-item measure assessing five subscales of perceived social support (parent, teacher, classmate, close friend, and school), only the parent, teacher and close friend subscales will be used. Therefore, the final scale will include 36 items. Participants are asked to read each statement and assess the frequency of available support on six-point likert scale (1 = “Never” to 6 = “Always”). For example, items include statements such as: “My parents/ guardians listen to me when I need to talk”. Symptoms of depression: Depressive symptomology will be measured using the Center for Epidemiologic Studies Depression Scale-revised 10-item version for adolescents (CESDR-10) (Haroz, Ybarra, & Eaton, 2014). Participants are presented with the instruction 'Below is a list of the ways you might have felt or acted. Please check how much you have recently felt this way', and asked to rate each of the 10 items on a five-point likert scale from “not at all or less than 1 day in the last week” (0) to “nearly every day for 2 weeks” (4). Items include statements such as “I felt sad”. The scale has been previously used with adolescent samples (e.g., Ybarra & Mitchell, 2014).

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Indices

Items from the questionnaire will be combined to create indices, as follows: The short version of the Personal Experiences Checklist the personal experiences checklist (PECK) (Hunt, Peters and Rapee, 2012). A total peer-victimisation score will be created by summing all 14 items on the scale. Primary appraisals (page 4 of the questionnaire) Threat appraisals Items 1 to 4 will be meaned to create a score of threat appraisal. A higher score indicates a greater appraisal of threat (Hunter et al. 2010). Challenge appraisals Items 5 to 9 will be meaned to create a score of challenge appraisal. A higher score indicates a greater appraisal of challenge (Hunter et al. 2004). Control appraisals Items 12, 15, and 16 will first be reverse scored. These reverse scored items along with items 10, 11, 13, and 14 will be meaned to create a score of control appraisals. A higher score indicates a higher appraisal of control (Catterson and Hunter, 2010). Blame appraisals Items 17 to 20 will first be reverse scored. These reverse scored items along with items 21, 22, and 23 will be meaned to create a score of blame appraisals. A higher score reflects a greater appraisal of self-blame, and a low score reflects greater appraisal of other blame (Catterson and Hunter, 2010). Secondary Appraisals (Perceived social support; Malecki and Demaray, 2002). The perceived frequency of support from each of the three domains (parents/ guardians, teachers, close friends) is calculated by summing responses to the how often question across all 12 items within each particular domain. The higher the score the higher the frequency of perceived social support in that domain. Symptoms of depression: Participant responses to the 10 items on the scale are summed to create a score of depressive symptomology (Center for

Epidemiologic Studies Depression Scale-revised 10-item version for adolescents (CESDR-10), Haroz, Ybarra, & Eaton, 2014).

DESIGN PLAN

Study type

Observational Study - Data is collected from study subjects that are not randomly assigned to a treatment. This includes surveys, “natural experiments,” and regression discontinuity designs.

Blinding

No blinding is involved in this study.

Study design

We have a longitudinal correlational design. Data will be collected at three time points over the course of the academic year. The questionnaire will be slightly different at the three time points: All the scales will be included in the initial survey to be used at the first time point. Only appraisals will be measured at time 2. Peer-victimisation, perceived social support, and depressive symptomology will not be measured at time 2. Peer-victimisation, appraisals and depressive symptomology will be measured at time 3. Perceived social support will not be measured at time 3.

No files selected

Randomization

Randomisation will not be used.

ANALYSIS PLAN

Statistical models

To test the hypotheses, cross-lagged panel analyses will be calculated using MPLUS Version 7.31 (Mac). Within our proposed models (see attached document), our variables are operationalised as follows: Peer-victimisation is our predictor variable, which will be measured twice, at time 1 and time 3. Depressive symptomology is our outcome variable. This will be measured twice, at time 1 and time 3. The four forms of primary appraisal (threat, control, blame and challenge) are mediators of the peer-victimisation - depression relationship. Primary appraisals will be measured at all three time points. The three forms of perceived social support will function as three separate moderators. These variables are proposed to moderate the relationship between peer-victimisation and depression, and each of the mediating relationships. Specifically, we hypothesise that each form of perceived social support will moderate the relationship between peer-victimisation and each primary appraisal. Perceived social support is only measured at time 1. Three models will be calculated in total. With each model the type of perceived social support functioning as a moderator will be changed. Model 1 will include perceived social support from parents/ guardians as the moderator, model 2 perceived social support from teachers as the moderator, and finally model 3 perceived social support from a close friend as the moderator. Each of the three proposed models will be built and analysed following the same process: Step 1(see figure 2 included in the attached document) A

simple cross-lagged panel analysis will be conducted to calculate: 1. The measurement error associated with peer-victimisation at time 1 will be correlated with the measurement error associated with depression at time 1. 2. The measurement error associated with peer-victimisation at time 3 will be correlated with the measurement error associated with depression at time 3. 3. The autoregressive effects of depression at time 1 on depression at time 3, and peer victimisation at time 1 on peer-victimisation at time 3. 4. The cross-lagged effects of peer-victimisation at time 1 on depression at time 3, and depression at time 1 on peer victimisation at time 3. Step 2 (see figure 3 included in the attached document) One of the three forms of perceived social support will be introduced as a moderator of the direct path from peer-victimisation at time 1 and depression at time 3. Step 3 (see figure 3 included in the attached document) The four types of primary appraisal (threat, control, blame, and challenge) will be included as mediators of the relationship between peer-victimisation at time 1 and depression at time 3. The autoregressive effects of each type of primary appraisal at time 1 on itself at time 2 and time 3 will be calculated. The measurement error associated with each type of primary appraisal at time 2 will be correlated with the measurement errors at time 3. If the source of perceived social support included in step 2 did not significantly moderate the relationship between peer victimisation at time 1 and depression at time 3, it will not be included in this model. Step 4 The source of social support will be tested as a moderator of the mediating paths from peer victimisation to each of the four types of primary appraisal.

Transformations

Scores on peer-victimisation and perceived social support will be centered to create the interaction terms for the moderation analyses. No transformations or recoding of the data are planned. If the data are found to be non-normal, the estimator used in the model will be changed from ML to MLR.

Follow-up analyses

If significant moderating effects are found for the perceived social support variables, simple slopes analyses will be conducted in MPLUS. The simple slopes analyses will examine the relationships between the relevant variables at three levels of the social support variable (the moderator). These relationships will be calculated for the mean score of perceived social support, and +1sd and -1sd away from the mean. In each of the three models, the form of social support is hypothesised to moderate the relationship between peer-victimisation and depression and the relationships between peer-victimisation and each of the four types of primary appraisal. If these moderating effects are found to be significant, the following simple slopes analyses for the three levels of perceived social support will be calculated: 1. The relationship between peer-victimisation and depression. 2. The relationship between peer-victimisation and threat appraisal. 3. The relationship between peer-victimisation and control appraisal. 4. The relationship between peer-victimisation and challenge appraisal. 5. The relationship between peer-victimisation and blame appraisal. This process will be the same for each of the three models.

Inference criteria

An alpha of $\alpha=0.05$ will be used for identifying significant paths in the model. Bias corrected bootstrapping will be used to test the indirect effects. If significant, in order to draw comparisons of the four mediating effects, effect sizes will be calculated following the guidance outlined by Preacher and Kelly (2011).

Data exclusion

No checks for eligibility of inclusion will be used, other than checking that participants have completed all the measures.

Missing data

Missing data will be managed in MPLUS using FIML.

Exploratory analysis

The following exploratory analyses may be conducted: There is evidence to suggest that gender may play a role in the relationships between the variables (e.g., Davidson and Demaray, 2008). Therefore, a multi-groups analysis will be conducted to test the model separately for boys and girls. If perceived social support is found to moderate the relationships predicted, exploratory data analyses will also include the analysis of the question on the perceived usefulness of particular sources of social support. Thematic analysis will be used to analyse any qualitative data provided on the usefulness of different sources of social support in managing peer-victimisation.

Scripts

Upload an analysis script with clear comments

No files selected

Other

Other

No response

Appendix v: Participant Information Sheet (School)

September 2018

Dear Headteacher,

I am writing to you to seek your support for a research project I am conducting as part of my PhD at the University of Strathclyde, under the supervision of Dr Simon Hunter.

As part of my studies I am conducting a study examining children's thoughts and feelings following bullying relates to mental health. This includes negative feelings such as feeling threatened or anxious, and more positive thoughts, such as feeling in control. As part of the project I am interested in the thoughts and feelings of those who have and haven't been bullied. Overall, we aim to better understand the relationship between bullying and mental health. I am writing to you to seek your consent to conduct the survey with your pupils.

In total I aim to collect data from participants three times over the course of the academic year. I enclose a participant information sheet regarding the study outlining in more detail what is involved, alongside a copy of the questionnaire I plan to use.

If you would be happy to participate in the study, or if you require further information, please contact me, or my supervisor, using the details below. I appreciate you must receive a number of requests for research participation and I would like to thank you for taking the time to read my letter and accompanying information. I look forward to hearing from you.

Yours sincerely,

Nathalie Noret

Researcher contact details:

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Participant Information Sheet for Schools

Name of department: School of Psychological Sciences and Health.
Title of the study: Thoughts and feelings about bullying.

Introduction

My name is Nathalie Noret and I am a PhD student at the University of Strathclyde, under the supervision of Dr Simon Hunter. As part of my studies I am conducting a study examining children's thoughts and feelings after they have experienced bullying behaviours. This includes negative feelings such as feeling threatened or anxious, and more positive thoughts, such as feeling in control. The study has been approved by the School of Psychological Science and Health Ethics Committee at the University of Strathclyde.

What is the purpose of this investigation?

Research suggests that peer-victimisation may impact on young people's mental health, but we know very little about how this relationship changes over time. Therefore, the aim of this study is to examine whether pupils' interpretation and evaluation of their experiences of bullying may affect the relationship with symptoms of anxiety and depression.

What will pupils be asked to do?

With your permission, I would like to collect data from pupils in Years 7,8 and/or 9, at three time points over the academic year (2018/19):

1. At the end of September/ early October
2. After the October half term/ early November
3. Before the Christmas holiday.

Consent letters will be distributed to parents/ guardians before data collection commences, and their consent sought for their child to participate in the study. A participant information sheet and consent letter will also be distributed to pupils outlining what the study involves.

The questionnaire differs at the three time points. It will take about 30 minutes to complete the first questionnaire, about 10 minutes to complete the second and about 20 minutes to complete the final questionnaire. The questionnaire asks pupils to think about the previous month in school, and asks about their experiences of bullying during this time, their thoughts about these experiences, their perception of available support from teachers, parents/ guardians and friends, and finally symptoms of depression and anxiety. I have attached a copy of the questionnaire I plan to use. At the end of each data collection session, pupils will be provided with a debrief sheet, providing a summary of the study and sources of support.

At a time convenient to you and your school I will then arrange data collection. I can administer the questionnaire in paper format or online, depending on what is easier for your school. I can also visit your school and support the data collection process. Alternatively, if it is not possible to conduct the questionnaire in school time, but would still be willing to support the project, we have designed the project so the questionnaire can be completed in pupils own time. If you would be willing to support the research in this way this would involve providing the parents/ guardians of your members with a questionnaire pack. This pack is available in hard copies or via email. If parents/ guardians consent for their child to participate, young people will then be contacted with a request to participate and a link to the questionnaire which they complete in their own time.

What are the potential risks to pupils in taking part?

We don't anticipate that pupils will be affected in any way by participating in this study. Pupils will be provided with a detailed participant information sheet, so they know what to expect and can make an informed decision about whether to participate. If they are concerned about any of the questions asked, or find them upsetting, they are free to miss out these questions or withdraw from the study. Upon completion of the study they will be provided with another information sheet. This will provide contact details for useful helplines and support organisations that they can contact if you are having any problems (mental or physical) that are worrying them.

There is a possibility that some pupils will report frequent experiences of victimisation and/or concerning responses to other parts of the questionnaire. Should this occur, in line child protection legislation, we will forward onto you the child's details and the nature of our concerns, to be managed within your school's safeguarding policies and procedures.

What happens to the information in the project?

All pupil data will be kept completely confidential. At the beginning of the questionnaire, we ask pupils to provide some demographic information, including their names. We ask for this information so we can match the data collected over time. Once all the data have been collected, and this process has been completed, the answers to these questions will be deleted from the electronic data set and removed from the paper copies and destroyed.

Once the study is complete, and the findings have been published, the data will be made openly available on the Open Science Framework website. This data set will be completely anonymised, no identifying information on schools or individual pupils will be included in this data set. We will provide you with a short report summarising the key findings from the questionnaire. I will also write up the results of the study for my PhD and for academic publication. In these publications, the data will be completely anonymous, it will not be possible to identify an individual pupil or school.

Data will be stored securely within a locked cabinet within the University of Strathclyde. The computerised data will be stored on a password protected computer at the University of Strathclyde to which access will be restricted to the researchers. The paper copies of the questionnaire will be kept for a period of five years after which it will be destroyed securely. As participants' answers will remain private and be held anonymously we will not be able to identify individual questionnaires once the study has ended. This means that participants can withdraw their data at any point during the survey, up until the study is complete (January 2019). The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

What happens next?

Thank you for reading this information. If you would be happy for me to collect data in your school., or if you have any questions about the project or any of the information presented here, please contact us using the information below. If you'd like to find out more about the project, and find out more about the results in the future, you can visit our website

www.yorks.ac.uk/bullyingthoughts.

Researcher contact details:

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If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Appendix vi: Participant Information Sheet (Parents)

12th October 2018

Dear Parent/Guardian,

I am writing to you to seek your support for a research project I am conducting as part of my PhD at the University of Strathclyde, under the supervision of Dr Simon Hunter.

As part of my studies I am conducting a study examining children's thoughts and feelings after they have experienced bullying behaviours. This includes negative feelings such as feeling threatened or anxious, and more positive thoughts such as feeling in control. I am writing to you to seek your consent to conduct the survey with your child. The School of Psychological Science and Health Ethics Committee at the University of Strathclyde have approved this study.

I enclose a participant information sheet regarding the study outlining in more detail what is involved. If you would be happy to for your child to participate in the study, or if you require further information, please contact me, or my supervisor, using the details below.

I would like to thank you for taking the time to read my letter and the accompanying information, and I look forward to hearing from you.

Yours sincerely,

Nathalie Noret

Researcher contact details:

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University of Strathclyde
Graham Hills Building
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Email: simon.hunter@strath.ac.uk

Participant Information Sheet for Parents/ Guardians

Name of department: School of Psychological Sciences and Health
Title of the study: Thoughts and feelings about bullying

Introduction

My name is Nathalie Noret and I am a PhD student at the University of Strathclyde, under the supervision of Dr Simon Hunter. As part of my studies I am conducting a study examining children's thoughts and feelings after they have experienced bullying behaviours. This includes negative feelings such as feeling threatened or anxious, and more positive thoughts, such as feeling in control.

What is the purpose of this investigation?

Research suggests that peer-victimisation may impact on young people's mental health, but we know very little about how this relationship changes over time. Therefore, the aim of this study is to examine whether pupils' interpretation and evaluation of their experiences of bullying may affect the relationship with symptoms of anxiety and depression. I will be collecting data at your child's school at three time points over the next academic year (2018/19):

1. In the middle of October
2. In the middle of November
3. In the middle of December

Does your child have to take part?

No not at all. The decision to participate is completely your and your child's decision. If you provide consent for your child to participate, but on the day your child does not want to participate, your child will not be forced to do so. Completing the questionnaire is completely voluntary. As we are collecting data over a number of time points, we will ask your child's permission to participate at every data collection point. If your child agrees to participate at the first data collection point, there is no expectation to participate at each subsequent point. When completing the questionnaire, pupils can also miss out any questions they do not want to answer. Once all the data have been collected, if you or your child decide that you no longer want to participate in the study, you can withdraw your data by contacting me via email and your child's data will be removed from the study.

What will your child be asked to do?

Your child will be asked to read an information sheet and consent form, and if they agree to take part they will be given a questionnaire to fill in. The questionnaire will take about 30 minutes to complete. The questionnaire asks pupils to think about the previous month in school, and asks about their experiences of bullying during this time, their thoughts about these experiences, their perception of available support from teachers, parents/ guardians and friends, and finally

symptoms of depression and anxiety. The questionnaire includes statements such as:

- Other kids say mean things behind my back.
- Your friends won't like you anymore.
- If other kids pick on me, I am able to stop them.
- My Teacher(s) treats me fairly.
- I felt scared without any good reason.

Pupils are then asked how frequently they have had these experiences or feelings in the previous month.

From October 2018 to December 2018, pupils will be asked to complete the questionnaire three times. At the end of each data collection session, pupils will be provided with a debrief sheet, providing a summary of the study and sources of support.

Why has your child been invited to take part?

For this project we're interested in the experiences of school pupils in years S1 to S3 (aged 11 to 14). As your child's school has agreed to be involved in the research all pupils in these years have been invited to participate.

What are the potential risks to you in taking part?

We don't anticipate that your child will be affected in any way by participating in this study. If a pupil is concerned about any of the questions asked, or find them upsetting, they are free to miss out these questions or withdraw from the study. Upon completion of the study they will be provided with another information sheet. This will provide contact details for useful helplines and support organisations that they can contact if they are having any problems (mental or physical) that are worrying them. At the end of the questionnaire we ask pupils if they are currently worried or struggling with something would they like us to arrange for someone at their school to talk to them. If a child ticks yes we will pass the pupils name onto the school. The pupil's responses to the questionnaire will not be shared with the school.

There is a possibility that some pupils will report frequent experiences of victimisation and/or concerning responses to the questionnaire. Should this occur, in line child protection legislation, the child's details and the nature of our concerns, but not the pupil's questionnaire, will be passed onto the headteacher to be managed within their safeguarding policies and procedures.

What happens to the information in the project?

All pupil data will be kept completely confidential. At the beginning of the questionnaire, we ask pupils to provide their name. We ask for this information so we can match the data collected over time. Once all the data have been collected, and this process has been completed, the answers to these questions will be

deleted from the electronic data set, and removed and destroyed from the paper copies of the questionnaire.

Paper copies of the questionnaire will be stored securely within a locked cabinet within the University of Strathclyde. The computerised data will be stored on a password protected computer at the University of Strathclyde to which access will be restricted to the researchers. The data will be made openly available on the Open Science Framework website. This data set will be completely anonymised, no identifying information on schools or individual pupils will be included in this data set.

As your child's answers will remain private and be held anonymously we will not be able to identify your individual questionnaire once the study has ended. This means that you can withdraw your data at any point during the survey, up until the study is complete (January 2019). The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Once the data analysis is complete, we will provide your child's head-teacher with a short report summarising the key findings from the questionnaire. I will also write up the results of the study for my PhD and for academic publication. In these publications, the data will be completely anonymous, it will not be possible to identify an individual pupil or school. If you'd like to find out more about the project, and find out more about the results in the future, you can visit our website www.yorksj.ac.uk/bullyingthoughts.

What happens next?

Thank you for reading this information if you do not want you child to participate in the study, please sign the attached form and return it to the school. If you have any questions about the project or any of the information presented here, please contact us using the information below.

Researcher contact details:

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40 George Street
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Email: simon.hunter@strath.ac.uk

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

**Dr Diane Dixon (Chair of Ethics
Committee)**
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Health
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40 George Street
Glasgow G1 1QE

Email: hass-psh-ethics@strath.ac.uk
Tel: 0141 548 2571

Parental Consent Form

Name of department: Psychological Sciences and Health
Title of the study: Thoughts and feelings about bullying

Please read the following statements and tick where appropriate.

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.
- I understand that my child's participation is voluntary and that my child will be free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that anonymised data (i.e. data which do not identify my child personally) cannot be withdrawn once they have been included in the study (the end of January 2019).
- I understand that any information recorded in the investigation will remain confidential and no information that identifies my child or my child's school will be made publicly available.
- I understand that an anonymised data set will be made available via an online data repository (the Open Science Framework: <https://osf.io/>).
- I understand that data will be collected at three time points over the 2018/19 academic year.
- I **do not** consent to my child participating in the project.

Name of child	
Name of Parent/ Guardian (PRINT NAME)	
Signature of Parent/Guardian:	Date:

Participant Information Sheet for Participants

Name of department: School of Psychological Sciences and Health.
Title of the study: Thoughts and feelings about bullying.

Introduction

My name is Nathalie Noret and I am a PhD student at the University of Strathclyde. As part of my studies I'm undertaking a project looking at how being bullied in school can affect feelings over time. Some of these feelings can include things like feeling sad or feeling worried. I'm interested in whether these feelings change over time.

Why am I doing this study?

We know that bullying can sometimes relate to sad and negative feelings. The aim of my study is to try and understand why this happens. I'm interested in how experiences of bullying can affect these sad and negative feelings. I am interested in things like whether you feel threatened by any bullying behaviour you have experienced or how whether you think you can stop others from being aggressive. I'm also interested in whether having someone to talk to can help stop these feelings. I will be looking at how these thoughts and feelings change over time, and so I will be coming back to your school three times this year and will ask you to complete a survey each time I am here.

Do you have to take part?

No you don't. If you don't want to complete the questionnaire you don't have to. Just put your hand up and let us know and we will find you something else to do. If you start to fill in the questionnaire and don't want to answer a question, that's fine, just miss it out and move onto the next one. You can also decide to stop taking part even if you make a start, and if that is what you decide then there will be no problem with that.

What will you do in the project?

After you have read this sheet, and if you are happy to do so, you will be given a consent sheet to read and sign if you agree to take part in the study. You will then be given a short questionnaire to fill in. This should take about 30 minutes to fill in. Most of the questions are about your life in school in the past month. In particular you'll be asked about your experiences of bullying over this time, and questions about how you feel. Don't worry if you have not experienced any bullying, we are interested in the thoughts and feelings of all school pupils. Then later in

the school year I will contact you to see if you will be happy to fill in the questionnaire again. In total, I will ask you to do this three times this year. This investigation was granted ethical approval by the School of Psychological Science and Health Ethics Committee at the University of Strathclyde.

What are the potential risks to you in taking part?

We don't think that you will be affected in any way by participating in this study. If you are concerned about any of the questions asked, or find them upsetting, you can miss out these questions or withdraw from the study. Once you have filled in the questionnaire you will be given another information sheet. This will provide contact details for useful helplines and support organisations that you can contact if you are having any problems (mental or physical) that are worrying you. At the end of the questionnaire we will ask you if you would like us to arrange for someone at school to talk to you about anything you might be worrying about. If you think this might be helpful, you can tick the box and we will arrange this for you. We will not share your answers to the questionnaire.

What happens to the information in the project?

We will keep all your answers completely confidential (secret), so no one will know your answers. So please try to answer all the questions as truthfully as you can. However, if we read your questionnaire and are worried about your health or safety, we will tell your head-teacher your name so that he or she can arrange for someone to offer you support. Even if we do that, we will not share anything you report in the survey with them, we'll only pass on your name.

When we've collected the data we will provide your head-teacher with a short report to help your school find out more about experiences of bullying. I will also write up the results of the study for my PhD. All the data in the reports will be anonymous (secret) so your answers will not be shared.

Paper copies of the questionnaire will be stored securely within a locked cabinet within the University of Strathclyde. At the beginning of the questionnaire we ask you for your name, this is so we can match your answers up over the course of the project. Once we have done this we will tear off your name and destroy this information. We will create an electronic data set which will be anonymous, so no one will know which data are yours. This computerised data will be stored on a password protected computer at the University of Strathclyde to which access will be restricted to the researchers. A copy of this data will also be uploaded onto a website called the Open Science Framework (OSF). The OSF is a website where researchers can store and share information on their projects. Only the data are shared and none of your personal information will be saved on this website.

As your answers will remain private and be held anonymously we will not be able to identify your individual questionnaire once the study has ended. This means that you can withdraw your data at any point during the survey, up until the study

is complete (January 2018). You can do this by asking a parent/ guardian or teacher to contact us by email or post and we will arrange to remove your data. The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

What happens next?

Thank you for reading this information – please ask any questions if you are unsure about what is written here. If you are happy to continue, please read and fill in the consent sheet and start the questionnaire. If you don't want to fill in the questionnaire please put up your hand and we will find you something else to do.

Once you've completed the questionnaire, if you'd like to find out more about the project you can visit our website <https://bullyingthoughtsfeelings.com>

If you have any questions please ask.

Researcher contact details:

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Tel: 0 141 548 4879

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Dr Diane Dixon (Chair of Ethics Committee)

School of Psychological Sciences and Health
University of Strathclyde
Graham Hills Building
40 George Street
Glasgow G1 1QE

Email: hass-psh-ethics@strath.ac.uk

Tel: 0141 548 2571

Pupil Consent Form

Before you go onto complete the questionnaire, please read the following statements and tick if you agree with the statement. Please read each sentence carefully and tick in the box if you agree with the sentence.

- I have read and understood the information sheet for the study on thoughts and feelings about bullying.
- I understand that I don't have to take part if I don't want to.
- I understand that if I change my mind later I can ask my parent/ guardian to contact you to remove my information.
- I understand that my answers to the questionnaire will remain confidential (secret) and no information that identifies me will be shared.
- I understand that if you do pass on my name, you will not share my questionnaire answers.
- I understand that an anonymised data set will be made available on the Open Science Framework website.
- I am happy to fill in the questionnaire.

What is your name?

As we are asking you to complete three questionnaires over the next three months, we are asking for this information so we can match your questionnaires together. We won't store this information with your answers.

Appendix viii: Study three survey

**THOUGHTS AND FEELINGS ABOUT BULLYING:
PUPIL QUESTIONNAIRE 1**

In this questionnaire, you will find questions about your experiences in school, and your current thoughts and feelings.

There are several answers next to each question. Each answer has either a blank circle or blank square next to it. You answer by ticking in the circle or square next to your chosen answer.

We will try to keep all your answers completely confidential, so no one will know what answers you provide. So please try to answer all the questions as truthfully as you can. We will not ask you to give your name.

Please answer carefully and think about how you really feel. Most of the questions are about your life in school in the past month, think about how you have felt for the whole of this time, not just about how you are feeling today.

Please tick in the box or column next to the answer of your choice. Remember to select the answer you think is most true for you, there are no right or wrong answers. If you do not want to answer a question, simply move onto the next one.

If you have any questions about this questionnaire please put up your hand and someone will come and help you.

School Name: _____

School Year: _____

Are you?

- a. Male (A boy)
- b. Female (A girl)
- c. Prefer not to say

How old are you?

11 12 13 14 15

What is your name? _____

As we are asking you to complete three questionnaires over the next three months, we are asking for this information so we can match your questionnaires together. We won't store this information with your answers.

Thinking about the last month or so at school, how often do the following things happen to you?

Please tick the best response...	Never	Rarely	Some- times	Most days	Every day
1. The other kids ignore me on purpose.					
2. The other kids make fun of my language.					
3. The other kids tease me about things that aren't true.					
4. Other kids threaten me over the phone.					
5. Other kids tell people not to hang around with me.					
6. Other kids won't talk to me because of where I'm from					
7. Other kids say nasty things to me by texting.					
8. Other kids tell people to hit me.					
9. Other kids send me nasty e-mails.					
10. Other kids say mean things behind my back.					
11. Other kids shove me.					
12. Other kids say nasty things about me on online.					
13. Other kids tell people to make fun of me.					
14. Other kids hit me.					

When other people are nasty to you, what do you think might happen? If people have not been nasty to you, how do you think you would feel?

	Not Likely	Not Very Likely	Likely	Very Likely
1. Your friends won't like you anymore				
2. You will be hurt physically (beaten up)				
3. You will feel bad about yourself				
4. More and more people will be nasty to you				
5. You will learn to deal with bullying				
6. You will learn to be nice to others				
7. You will be a stronger, more confident person				
8. The bully will be punished				
9. Something good would end up happening				

How do you feel when these things happen to you? If you have never experienced the nasty things listed on page 2, how do you think you would feel if you did?

	Always True	True most of the time	True some-times	Hardly ever true	Not true at all
1. If other kids pick on me, I am able to stop them					
2. If other kids took my things I would be able to get the things back					
3. If other kids hit or kick me, I can't make them stop					
4. I would be able to stop them if other children called me names					
5. When children leave me out, I can make sure they don't do it again					
6. I couldn't stop it happening if I was being teased					
7. If people said nasty things about me on the internet I wouldn't be able to make it stop					
8. It's usually my fault when I get called names.					
9. People blame me when I get left out.					
10. Even if I don't say it, I know it's my fault when I get picked on.					
11. If I get hit or kicked, I must have done something to deserve it.					
12. I'm not to blame when I get picked on.					
13. Usually it's not my fault when people say nasty things about me.					
14. I haven't done anything wrong when people send me nasty text messages.					

Thinking about the things that have happened to you in the past month, please answer the following questions.

Where did these things happen? (Please tick all that apply)

- 1) None of these things have happened to me in the last month at school
- 2) Classroom
- 3) Toilet
- 4) Corridor
- 5) Play/school grounds
- 6) Changing rooms
- 7) In the boarding house
- 8) Outside School
- 9) Somewhere else *please write below, where these things took place*

How many pupils did these things to you?

- 1) No-one
- 2) Mainly one boy
- 3) Several boys
- 4) Mainly one girl
- 5) Several girls
- 6) Both boys and girls

How often do you try to avoid school by pretending to be sick or by playing truant because of the things that happened to you?

- 1) None of these things have happened to me in the last month at school
- 2) Never
- 3) Sometimes
- 4) Only once or twice
- 5) Maybe once a week
- 6) Several times a week

On the next two pages, you will be asked to respond to sentences about some form of support or help that you might get from either a parent, a teacher, a classmate, or a close friend. Read each sentence carefully and respond to them honestly. There are no right or wrong answers.

For each sentence, you are asked to provide two answers (that means there will be two ticks on each line).

For each sentence, rate how often you receive the support described (by ticking one box in the grey column) and then rate how important the support is to you (by ticking one box in the white column).

My Parents/Guardians...	How Often?					
	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
1) ..show they are proud of me.						
2) ..understand me.						
3) ..listen to me when I need to talk.						
4) ..make suggestions when I don't know what to do.						
5) ..give me good advice.						
6) ..help me solve problems by giving me information.						
7) ..tell me I did a good job when I do something well.						
8) ..nicely tell me when I make mistakes.						
9) ..reward me when I've done something well.						
10) ..help me practice my activities.						
11) ..take time to help me decide things.						
12) ..get me many of the things I need.						

Thinking about any of the nasty behaviours you reported experiencing earlier in the questionnaire, how helpful is the support you receive from your parents/guardian in managing these experiences? If people have not been nasty to you, think about how helpful your parent/ guardian might be if these things did happen to you.

1. Very helpful
2. Helpful
3. Not very helpful
4. Very unhelpful

If you want to tell us any more about why you think this way, please use this space:

My Teacher(s)...	How Often?					
	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
1) ..cares about me.						
2) ..treats me fairly.						
3) ..makes it okay to ask questions.						
4) ..explains things that I don't understand.						
5) ..shows me how to do things.						
6) ..helps me solve problems by giving me information.						
7) ..tells me I did a good job when I've done something well.						
8) ..nicely tells me when I make mistakes.						
9) ..tells me how well I do on tasks.						
10) ..makes sure I have what I need for school.						
11) ..takes time to help me learn to do something well.						
12) .. spends time with me when I need help.						

Thinking about any of the nasty behaviours you reported experiencing earlier in the questionnaire, how helpful is the support you receive from your teacher(s) in managing these experiences? If people have not been nasty to you, think about how helpful your close friend might be if these things did happen to you.

1. Very helpful
2. Helpful
3. Not very helpful
4. Very unhelpful

If you want to tell us any more about why you think this way, please use this space:

My Close Friend...	How Often?					
	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
1) ..understands my feelings.						
2) ..sticks up for me if others are treating me badly.						
3) ..spends time with me when I'm lonely.						
4) ..gives me ideas when I don't know what to do.						
5) ..gives me good advice.						
6) ..explains things that I don't understand.						
7) ..tells me he or she likes what I do.						
8) ..nicely tells me when I make mistakes.						
9) ..nicely tells me the truth about how I don on things.						
10) ..helps me when I need it.						
11) ..shares his or her things with me.						
12) ..takes time to help me solve my problems.						

Thinking about any of the nasty behaviours you reported experiencing earlier in the questionnaire, how helpful is the support you receive from your close friend in managing these experiences? If people have not been nasty to you, think about how helpful your close friend might be if these things did happen to you.

1. Very helpful
2. Helpful
3. Not very helpful
4. Very unhelpful

If you want to tell us any more about why you think this way, please use this space:

Below is a list of the ways you might have felt or acted. Please check how *much* you have recently felt this way.

	Not at all or less than 1 day in the last week	1-2 days in the last week	3-4 days in the last week	5-7 days in the last week	Nearly every day for 2 weeks
My appetite was poor					
My sleep was restless					
I felt sad					
I felt like a bad person					
I lost interest in my usual activities					
I felt like I was moving too slowly					
I wished I were dead					
I was tired all the time					
I could not focus on the important things					
I felt irritable					

THANK YOU

Thank you for filling in this questionnaire. We know we have asked you some questions on some difficult and sometimes upsetting topics. If you are struggling at the minute, and don't know who to talk to about these feelings, we can arrange for someone at your school to talk to. We will not share your questionnaire with anyone. If you would like us to do this please tick the box below:

- Yes, please can you arrange for someone at school to talk to me.

If you don't tick this box, we won't arrange for anyone in school to talk to you.

If you have ticked this box, please check you have written your name on the first page. We will also give you a debrief sheet with more advice and guidance on the topics covered in the questionnaire.

THOUGHTS AND FEELINGS ABOUT BULLYING: PUPIL QUESTIONNAIRE 2

In this questionnaire, you will find questions about your experiences in school, and your current thoughts and feelings.

There are several answers next to each question. Each answer has either a blank circle or blank square next to it. You answer by ticking in the circle or square next to your chosen answer.

We will try to keep all your answers completely confidential, so no one will know what answers you provide. So please try to answer all the questions as truthfully as you can. We will not ask you to give your name.

Please answer carefully and think about how you really feel. Most of the questions are about your life in school in the past month, think about how you have felt for the whole of this time, not just about how you are feeling today.

Please tick in the box or column next to the answer of your choice. Remember to select the answer you think is most true for you, there are no right or wrong answers. If you do not want to answer a question, simply move onto the next one.

If you have any questions about this questionnaire please put up your hand and someone will come and help you.

School Name: _____

School Year: _____

Are you?

- d. Male (A boy)
- e. Female (A girl)
- f. Prefer not to say

How old are you?

11 12 13 14 15

What is your name? _____

As we are asking you to complete three questionnaires over the next three months, we are asking for this information so we can match your questionnaires together. We won't store this information with your answers.

In the last questionnaire you filled in, we asked you a question about your experiences of other people being nasty to you. For example we asked you whether other kids had ever ignored you on purpose, hit you, or said nasty things about you online. Thinking about when other people are nasty to you, what do you think might happen? If people have not been nasty to you, how do you think you would feel?

	Not Likely	Not Very Likely	Likely	Very Likely
1. Your friends won't like you anymore				
2. You will be hurt physically (beaten up)				
3. You will feel bad about yourself				
4. More and more people will be nasty to you				
5. You will learn to deal with bullying				
6. You will learn to be nice to others				
7. You will be a stronger, more confident person				
8. The bully will be punished				
9. Something good would end up happening				

How do you feel when these things happen to you? If you have never experienced other people being nasty to you, how do you think you would feel if you did?

	Always True	True most of the time	True some-times	Hardly ever true	Not true at all
1. If other kids pick on me, I am able to stop them					
2. If other kids took my things I would be able to get the things back					
3. If other kids hit or kick me, I can't make them stop					
4. I would be able to stop them if other children called me names					
5. When children leave me out, I can make sure they don't do it again					
6. I couldn't stop it happening if I was being teased					
7. If people said nasty things about me on the internet I wouldn't be able to make it stop					
8. It's usually my fault when I get called names.					
9. People blame me when I get left out.					
10. Even if I don't say it, I know it's my fault when I get picked on.					
11. If I get hit or kicked, I must have done something to deserve it.					
12. I'm not to blame when I get picked on.					
13. Usually it's not my fault when people say nasty things about me.					
14. I haven't done anything wrong when people send me nasty text messages.					

THANK YOU

Thank you for filling in this questionnaire. We know we have asked you some questions on some difficult and sometimes upsetting topics. If you are struggling at the minute, and don't know who to talk to about these feelings, we can arrange for someone at your school to talk to. We will not share your questionnaire with anyone. If you would like us to do this please tick the box below:

- Yes, please can you arrange for someone at school to talk to me.

If you don't tick this box, we won't arrange for anyone in school to talk to you.

If you have ticked this box, please check you have written your name on the first page. We will also give you a debrief sheet with more advice and guidance on the topics covered in the questionnaire.

THOUGHTS AND FEELINGS ABOUT BULLYING: PUPIL QUESTIONNAIRE 3

In this questionnaire, you will find questions about your experiences in school, and your current thoughts and feelings.

There are several answers next to each question. Each answer has either a blank circle or blank square next to it. You answer by ticking in the circle or square next to your chosen answer.

We will try to keep all your answers completely confidential, so no one will know what answers you provide. So please try to answer all the questions as truthfully as you can. We will not ask you to give your name.

Please answer carefully and think about how you really feel. Most of the questions are about your life in school in the past month, think about how you have felt for the whole of this time, not just about how you are feeling today.

Please tick in the box or column next to the answer of your choice. Remember to select the answer you think is most true for you, there are no right or wrong answers. If you do not want to answer a question, simply move onto the next one.

If you have any questions about this questionnaire please put up your hand and someone will come and help you.

School Name: _____

School Year: _____

Are you?

- a. Male (A boy)
- b. Female (A girl)
- c. Prefer not to say

How old are you?

11 12 13 14 15

What is your name? _____

As we are asking you to complete three questionnaires over the next three months, we are asking for this information so we can match your questionnaires together. We won't store this information with your answers.

Thinking about the last month or so at school, how often do the following things happen to you?

Please tick the best response...	Never	Rarely	Some- times	Most days	Every day
1. The other kids ignore me on purpose.					
2. The other kids make fun of my language.					
3. The other kids tease me about things that aren't true.					
4. Other kids threaten me over the phone.					
5. Other kids tell people not to hang around with me.					
6. Other kids won't talk to me because of where I'm from					
7. Other kids say nasty things to me by texting.					
8. Other kids tell people to hit me.					
9. Other kids send me nasty e-mails.					
10. Other kids say mean things behind my back.					
11. Other kids shove me.					
12. Other kids say nasty things about me on online.					
13. Other kids tell people to make fun of me.					
14. Other kids hit me.					

When other people are nasty to you, what do you think might happen? If people have not been nasty to you, how do you think you would feel?

	Not Likely	Not Very Likely	Likely	Very Likely
1. Your friends won't like you anymore				
2. You will be hurt physically (beaten up)				
3. You will feel bad about yourself				
4. More and more people will be nasty to you				
5. You will learn to deal with bullying				
6. You will learn to be nice to others				
7. You will be a stronger, more confident person				
8. The bully will be punished				
9. Something good would end up happening				

How do you feel when these things happen to you? If you have never experienced the nasty things listed on page 2, how do you think you would feel if you did?

	Always True	True most of the time	True some-times	Hardly ever true	Not true at all
1. If other kids pick on me, I am able to stop them					
2. If other kids took my things I would be able to get the things back					
3. If other kids hit or kick me, I can't make them stop					
4. I would be able to stop them if other children called me names					
5. When children leave me out, I can make sure they don't do it again					
6. I couldn't stop it happening if I was being teased					
7. If people said nasty things about me on the internet I wouldn't be able to make it stop					
8. It's usually my fault when I get called names.					
9. People blame me when I get left out.					
10. Even if I don't say it, I know it's my fault when I get picked on.					
11. If I get hit or kicked, I must have done something to deserve it.					
12. I'm not to blame when I get picked on.					
13. Usually it's not my fault when people say nasty things about me.					
14. I haven't done anything wrong when people send me nasty text messages.					

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I felt like a bad person					
I lost interest in my usual activities					
I felt like I was moving too slowly					
I wished I were dead					
I was tired all the time					
I could not focus on the important things					
I felt irritable					

THANK YOU

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Debrief Sheet for School Pupils

Name of department: School of Psychological Sciences and Health
Title of the study: Thoughts and feelings about bullying

We know that bullying can sometimes relate to sad and negative feelings. I'm interested in how experiences of bullying can affect these sad and negative feelings. The questionnaire you have just completed asks questions on some challenging topics. If you want to find out more about some of these topics, or talk to someone about these issues, you can talk to the following people or organisations:

- At school you can talk to any teacher, or any other adult in school who you know and trust.
- Outside of school if you are being bullied please talk to someone at home about what is going on.
- Outside of school you can talk to someone at Childline by telephoning 0800 1111
- Or you can visit the Childline website for more information:
 - <https://www.childline.org.uk/info-advice/bullying-abuse-safety/types-bullying/bullying/>

As part of my research, I will be looking at how these thoughts and feelings about bullying change over time. You have now completed all the questionnaires as part of this project, and this was the final time I'll be visiting your school for this project.

- If you'd like to find out more about our project you can visit our website <https://bullyingthoughtsfeelings.com>

Please keep this sheet alongside your participant information sheet as this includes lots of information on the questionnaire you have just filled in.

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