



# The emergence of cyberbullying: A survey of primary school pupils' perceptions and experiences

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## Abstract

There is little research that has examined cyberbullying among children under the age of 11 years. The current study explored the nature and extent of the phenomenon among primary school children aged 7- to 11-years-old ( $N = 220$ ; 116 boys and 104 girls) and investigated their perceptions of the distress caused to victims, how victims would feel, and their recommendations to victims for coping strategies. Participants completed a modified version of Ortega, Calmaestra, and Mora-Merchán's (2007) and Smith et al.'s (2008a) bullying and cyberbullying questionnaire. The results indicated that cyberbullying is used and experienced by some children in this age group, with some age and gender differences in these experiences. Cyberbullying is generally viewed negatively and children are aware that it may have a negative impact on the emotions of victims. There is some overlap between involvement in cyberbullying and traditional bullying; with children most likely to take the same role (i.e., traditional bully and cyberbully or traditional victim and cybervictim) across the two settings. The most commonly endorsed coping strategy for victims was to tell someone, which is in line with government guidance to schools. The findings are discussed in relation to research with secondary school pupils as well as addressing potential implications for interventions with this age group.

## Keywords

bullying, cyberbullying, primary school, victimization

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Bullying in schools has long been recognized as being a problem with the potential for serious negative consequences for the victim (Gini & Pollozi, 2009). Bullying is intentionally hurting or undermining another, involving repetitive behaviour characterized by a power imbalance (Olweus, 1993; Smith, 2011). Types of bullying have been categorized as direct, in face-to-face encounters (e.g., physical, verbal) and indirect, occurring in the absence of the victim (e.g., rumour-spreading). A further type is relational aggression, aimed at damaging the victim's relationships (Crick & Grotpeter, 1995).

Research has begun to explore the experiences of young people in relation to Information and Communication Technology (ICT). Within the education system in England and Wales, the National Curriculum identifies ICT as an essential part of education from the earliest years and an education lacking in this is seen as reducing a child's opportunities for educational attainment (Russell & Drew, 2001). Access to mobile phones and the internet is widespread among young people (Byron Review, 2008; Carphone Warehouse, 2006). However, these devices have the potential to lend themselves to inappropriate use via cyberbullying (Monks, Ortega, Robinson, & Worlidge, 2009).

Research from various countries has highlighted the issue of cyberbullying (Mora-Merchán & Jäger, 2010). A definition of the phenomenon has not been fully agreed upon, however, one of the most commonly used is the definition proposed by Smith et al. (2008a). This states that cyberbullying is 'an aggressive, intentional act carried out by a group or individual, *using electronic forms of contact*, repeatedly and over time against a victim who cannot easily defend him or herself' (p. 376). Rivers, Chesney, and Coyne (2011) note that cyberbullying can take a variety of forms including; via phone calls, text or video/picture messages, email, in chatrooms, using instant messenger, the creation of 'slambooks' (websites aimed at degrading or hurting someone), the posting of inappropriate pictures or video-clips online, abusive comments made on social network sites, abuse in blogs, harassment within virtual environments (e.g. Second Life) as well as grieving (deliberate harassment of others) in online games. Research into cyberbullying has tended to examine the modalities by which cyberbullying is carried out; either by mobile phone or by the internet (Brighi, Guarini, & Genta, 2009), although in more recent years, with the more widespread availability of smartphones (mobile phones on which one can access the internet) this distinction has become more blurred. Others distinguish between text and image use in cyberbullying (e.g. Law, Shapka, Hymel, Olson, & Waterhouse, 2012). Paul, Smith, and Blumberg (2012) note that the uses of ICT, and consequently methods of cyberbullying, are constantly developing and changing.

It has been suggested that cyberbullying may occur as an extension of traditional bullying, or exist as an entity in its own right. Cassidy, Jackson, and Brown (2009) found that most pupils thought that the problem started at school, but then became cyberbullying as the victim was harassed at home via the internet or mobile phone. Juvonen and Gross (2008) also found that most cybervictims knew their aggressor(s) from school. This implies that there may be a relationship between being a

traditional bully and cyberbully and being a traditional victim and cybervictim. Raskauskas and Stoltz (2007) and Kowalski, Morgan, and Limber (2012) confirmed this hypothesis among adolescents. Furthermore, Kowalski et al. also found that being a cyberbully was a risk factor for becoming a cybervictim.

### *Extent of cyberbullying*

To date, most cyberbullying research has focussed on young people aged 11 years and over. Estimates of prevalence among adolescents vary dependant on methodology. However, in the UK Smith et al. (2008a), reported that 6.6% of adolescents surveyed reported being cyberbullied 'often' and 15.6% 'once or twice'.

Children under the age of 11 years also use the internet and mobile phones (Byron Review, 2008; Carphone Warehouse, 2006). Monks et al. (2009) found that 72% of 7- to 11-year-olds owned a mobile and 87% had internet access at home. In the UK, two small-scale studies noted that children in primary school reported being cyberbullied. The Anti-Bullying Alliance (ABA, 2009) found that about 20% of 10- to 11-year-olds were cyberbullied. Similar levels were found among 7- to 11-year-olds; 5% aggressors and 23% victims (Monks et al., 2009). In Australia, as part of a study on a wider age-range of pupils, Sakellariou, Carroll, and Houghton (2012) found that cyberbullying was reported among 9- to 11-year-olds. More research is needed with primary school aged pupils as they are using ICT and there is some evidence that they are experiencing cyberbullying. Furthermore, research conducted in the United States (Wolak, Mitchell, & Finkelhor, 2006) suggests that cyberbullying generally may be on the increase.

### *Age and gender differences*

Research has consistently found that males are more likely than females to be traditional bullies, although there are inconsistent findings regarding the gender of victims (e.g., Monks & Smith, 2000). There are some gender differences in types of aggression, with boys being more likely than girls to use direct forms, but less pronounced gender differences for indirect aggression (Card, Stucky, Sawalani, & Little, 2008). Rivers et al. (2011) noted that some studies have found that boys are more likely than girls to be cyberaggressors (e.g., Li, 2006; Popović-Čitić, Djurić, & Cvetković, 2011) whereas others have argued that given the more indirect nature of cyberbullying, girls may be more likely than boys to be involved. Given the findings in relation to traditional bullying, it may be the case that girls and boys favour and are exposed to different forms of cyberbullying.

There are age trends in involvement in traditional bullying. Younger pupils are more at risk than older pupils of being bullied (Whitney & Smith, 1993). There are also age changes in the types of aggression used by pupils, from more direct forms among younger children, to more indirect forms during early adolescence

(Björkqvist, Lagerspetz, & Kaukiainen, 1992). Research has suggested that the age-related decline in involvement seen in traditional bullying is not found for cyberbullying and that there is a peak in cyberbullying during adolescence (Smith et al., 2008a). Sakellariou et al. (2012) found higher levels of cybervictimization by text message among junior secondary pupils (aged 11- to 14-years-old) than among primary (aged 9- to 11-years-old) or senior secondary pupils (aged 14- to 16-years-old), but found no significant differences in other forms of cybervictimization by age group. However, for cyberbullies they found that the older groups (in particular the Junior Secondary sample) reported more involvement as cyberbullies in the various types of cyberbullying compared to the primary school group.

### ***Coping strategies***

Coping strategies for 'traditional' bullying have been found to have differing levels of success and show age and gender differences (Salmivalli, Karhunen, & Lagerspetz, 1996; Skrzypiec, Slee, Murray-Harvey, & Pereira, 2011; Tenenbaum, Varjas, Meyers, & Parris, 2011). Research has also examined responses to cyberbullying, finding varied strategies used by adolescents, including stopping using that site, blocking the aggressor, or asking them to stop (e.g. Juvonen & Gross, 2008). Little is known about coping strategies among younger victims of cyberbullying.

Cyberbullying is viewed negatively and reported as being as upsetting as traditional bullying by pupils (Monks et al., 2009; Smith et al., 2008a). Ortega, Elipe and Monks (in press) found two emotional responses by adolescent victims of cyberbullying; worry and indifference. As yet, there is no research that has looked at how primary school aged pupils view the emotional impact of cyberbullying on victims.

The first aim of the current study was to examine whether there were age and gender trends in involvement in cyberbullying among primary school aged pupils and whether there was a relationship between involvement in bullying and cyberbullying. A further aim was to examine perceptions of how upsetting participants thought the different types of bullying were for victims, the perceived emotional responses of victims and their recommended solutions for victims of cyberbullying.

## **Method**

### ***Participants***

Participants (116 boys and 104 girls) aged 7 to 11 years were recruited from five primary schools in southeast England. Positive informed consent for child participation was obtained from the Head-teachers and the children's parents/guardians. Children assented. The study was approved by the relevant research ethics committee.

## Materials

Participants completed a modified version of the Ortega et al. (2007) and Smith et al. (2008a) bullying and cyberbullying questionnaire (Monks et al., 2009; the questionnaire is available on request from the first author). The wording was adapted to be more age-appropriate. The questionnaire was piloted initially with a small group of 7- to 10-year-olds who gave feedback on their understanding of the questions and adaptations were made accordingly. Within the questionnaire, participants were questioned about their use of ICT; whether they owned a mobile phone and whether they had access to the internet at home or outside of their home. Definitions of traditional bullying and cyberbullying were provided and children were asked to self-report on their involvement in these as a perpetrator and/or victim. Children responded to questions asking about the frequency of their involvement over the past school term and the types of behaviours they used and experienced. Self-reports were employed in order to find out about cyberbullying as cyberbullying can be a covert form of bullying where only the perpetrator and victim may be aware of the harassment in some cases. Furthermore, it may be more difficult for onlookers to identify behaviours as being cyberbullying without understanding the motivation for the behaviour, the relationship between the protagonists and the impact on the victim. Self-report questionnaires have been used frequently with primary school aged pupils to find out about traditional forms of bullying, e.g. Olweus Bully/Victim Questionnaire (Olweus, 1994).

A subsample of participants ( $N = 166$ ), (53.0%,  $N = 88$  boys; 47%,  $N = 78$  girls; mean age 9.25 years,  $SD = 1.29$ ) were asked about their perceptions regarding the emotions felt by victims and the particular coping strategies they would recommend to victims. In order to identify the emotions that children thought a victim of cyberbullying would feel they were presented with a list of emotions and were able to choose as many as they thought were appropriate. The emotions were those identified by Ortega et al. (2007) and Smith et al. (2008a): Not affected, embarrassed, worried, upset, afraid/scared, angry, depressed, stressed, or other. Children were also presented with several potential ways of stopping cyberbullying and were asked to identify those they thought were best; asking them to stop, fighting back, ignoring it, telling someone (parent/teacher), reporting to the police or other authorities, sticking up for myself without fighting, avoiding the bullies, staying away from school, making new friends, other (Ortega et al., 2007; Smith et al., 2008a). This subsample was selected as these schools were amenable to a slightly longer version of the questionnaire being administered.

## Procedure

Data were collected in Spring 2008. The individual anonymous questionnaire was administered within a group setting during class-time. Participants were advised of the nature of the study and assent obtained. Children were informed that there were no right or wrong answers. Participants were assured that their answers were

confidential and anonymous and that no one would get into trouble as a result of what they had written. Questions were read out by a researcher and the researcher checked that participants understood each question. Most children had no difficulty answering the questionnaire, but extra support was available for children who found it difficult.

### *Data analysis*

Data were analysed using a variety of statistical techniques including Multivariate Analysis of Variance (MANOVA), univariate analyses, chi-square tests, logistic regressions and McNemar tests.

## **Results**

### *Percentages of bullies and victims*

Children were asked about how frequently they had been bullied/cyberbullied or had carried out these behaviours. Due to very low *N*s for involvement in cyberbullying, participants were assigned to roles based on whether they had ever experienced/carried out the behaviour that term. It was found that 49.1% (*N* = 108) self-identified as victims of traditional bullying, and 20.5% (*N* = 45) self-identified as cybervictims. Regarding the perpetrators, 18.2% (*N* = 40) reported being a traditional bully and 5.0% (*N* = 11) self-reported being a cyberbully.

### *Age trends in bullying/cyberbullying*

Age groups were collapsed into older (10- to 11-year-olds, *N* = 128) and younger (7- to 9-year-olds, *N* = 91) to enable statistical comparisons to be made. There was no significant association by age with being a cybervictim,  $\chi^2$  (1, *N* = 219) = .03,  $p > 0.05$ ; a cyberbully,  $\chi^2$  (1, *N* = 220) = 0.08,  $p > 0.05$  (Fishers exact) or a traditional bully,  $\chi^2$  (1, *N* = 220) = 1.58,  $p > 0.05$ . However, significantly more younger pupils (57.1%, *N* = 52) than older pupils (43.4%, *N* = 56) self-identified as traditional victims,  $\chi^2$  (1, *N* = 220) = 4.03,  $p < 0.05$ .

The number of different types of bullying and cyberbullying used or experienced by each participant was calculated. Analyses were carried out to examine whether there were significant differences between younger and older pupils in the numbers of types of aggressive (either cyber or traditional) and victim (either cyber or traditional) behaviours they reported experiencing or using. The overall MANOVA was not significant, Wilks' Lambda,  $F(4, 213) = 2.35$ ,  $p = 0.56$ . However, one of the univariate analyses was significant. Older pupils reported experiencing significantly more types of cyberbullying behaviours as victims than younger pupils (younger pupils, Mean = 0.43, SD = 0.52; older pupils, Mean = 0.65, SD = 0.88),  $F(1, 216) = 4.71$ ,  $p < 0.05$ . No other univariate analyses reached significance.

Analyses were conducted to examine whether there were any associations with age in terms of whether children reported experiencing each of the different types of bullying/cyberbullying as a victim (see Table 1). There were two significant associations by age-group; younger children were more likely than older children to report having been hit, kicked or pushed by others, whereas older pupils were more likely than younger pupils to report having been harassed via instant messenger.

Further analyses were performed to examine whether there were any significant associations by age group in relation to children's reports of being the perpetrator of aggression (see Table 1). Only one analysis reached significance; older pupils were more likely than younger pupils to admit to calling others names.

### *Gender and involvement in bullying and cyberbullying*

The associations between gender and involvement in bullying and cyberbullying were examined. There was no significant association with gender for being a cyber-victim,  $\chi^2$  (1,  $N=219$ ) = 0.78,  $p > 0.05$ ; a cyberbully,  $\chi^2$  (1,  $N=220$ ) = 1.86,  $p > 0.05$ ; a traditional victim,  $\chi^2$  (1,  $N=220$ ) = 1.79,  $p > 0.05$ ; or traditional bully,  $\chi^2$  (1,  $N=220$ ) = 0.54,  $p > 0.05$ .

When examining whether there were any gender differences in the number of types of bullying or cyberbullying used (as an aggressor) or experienced (as a victim) it was found that the overall MANOVA was not significant, Wilks' Lambda,  $F(4, 213) = 1.95$ ,  $p > 0.05$ . Only one of the univariate analyses reached significance. Girls reported significantly more types of cyberbullying (as an aggressor) than boys, (girls, Mean = 1.48, SD = 1.47; boys, Mean = 1.39, SD = 1.68),  $F(1, 216) = 5.27$ ,  $p < 0.05$ .

Regarding the association between gender and types of bullying/cyberbullying experienced (as a victim) or used (as an aggressor), Table 2 indicates that more boys than girls self-reported receiving nasty text messages, whereas significantly more girls than boys reported having their belongings broken on purpose, receiving nasty emails and being bullied in instant messenger. Boys were more likely than girls to report bullying others physically (hitting, kicking or pushing). No other differences reached significance.

### *Links between bullying and cyberbullying*

Predictors for being a cybervictim (being a traditional victim and being a traditional bully) were entered into a logistic regression. The model was significant  $\chi^2$  (2,  $N=219$ ) = 16.09,  $p < 0.001$ . The Wald criterion indicated that being a traditional victim significantly predicted a child being a cybervictim (Wald = 9.65, 1df,  $p < 0.01$ , Exp(B) = 3.27), whereas being a traditional bully did not significantly predict a child being a cybervictim. Being a traditional victim increased the odds ratio three-fold, indicating that traditional victims are three times more likely to be cybervictims than those who are not traditional victims. Of those who were cyber-victims, 73.3% ( $N=33$ ) were also traditional victims. Predictors for being a



**Table 1.** Comparisons of the experiences of cyberbullying (as an aggressor or victim) by age

Behaviour	As a victim			As a perpetrator		
	7- to 9-year-olds N = 91	10- to 11-year-olds N = 128	$\chi^2$ 1df	7- to 9-year-olds N = 91	10- to 11-year-olds N = 128	$\chi^2$ 1df
Physical	38.5%	19.4%	9.80**	29.7%	21.1%	2.11
Rumours	26.4%	21.1%	0.83	1.1%	3.9%	1.60
Exclusion	12.1%	21.9%	3.48	4.4%	0.8%	3.08
Break your things	11.0%	10.2%	0.04	2.2%	7.1%	2.65
Name-calling	28.6%	24.2%	0.52	0%	5.5%	5.18*
Threats	20.9	23.4%	0.20	3.3%	7.1%	1.46
Other way (traditional)	11.0%	10.2%	0.04	2.2%	1.6%	0.11
Nasty texts	30.8%	30.2%	0.01	31.9%	30.5%	0.49
Nasty video/photo	2.2%	5.4%	1.42	1.1%	0.8%	0.06
Nasty phone call	0%	2.3%	2.15	1.1%	0%	1.41
Nasty email	5.5%	7.0%	0.20	1.1%	0.8%	0.06
Chatroom	2.2%	4.7%	0.92	1.1%	0.8%	0.06
Instant messenger	2.2%	10.9%	5.93*	0%	2.3%	2.16
Website	0%	3.9%	3.61	0%	0%	0.00
Other way (cyber)	0%	1.6%	1.42	0%	0.8%	0.58

$\chi^2$  Chi-square; \* $p < 0.05$ ; \*\* $p < 0.01$ .

cyberbully (being a traditional victim and being a traditional bully) were entered into a logistic regression. The model was significant,  $\chi^2$  (2,  $N = 220$ ) = 13.78,  $p = 0.001$ . The Wald criterion indicated that being a traditional bully significantly predicted a child being a cyberbully (Wald = 8.09, 1df,  $p < 0.01$ , Exp(B) = 6.93), whereas being a traditional victim did not significantly predict being a cyberbully. Being a traditional bully increased the odds ratio nearly seven-fold, indicating that traditional bullies are nearly seven times more likely to be cyberbullies than those who are not traditional bullies. Of those who were cyberbullies, 63.6% ( $N = 7$ ) were also traditional bullies.

### *Perceptions of bullying and cyberbullying*

Of those who expressed an opinion, 24.5% ( $N = 40$ ) felt cyberbullying was less upsetting for the victim than traditional bullying, 36.2% ( $N = 59$ ) felt it had the same effect as bullying, and 39.3% ( $N = 64$ ) felt it was more upsetting than bullying.

When asked whether they thought that victims felt particular emotions in response to cyberbullying, it was found that participants were most likely to



**Table 2.** Comparisons of the experiences of cyberbullying (as an aggressor or victim) by gender

Behaviour	As a victim			As a perpetrator		
	Boys N = 116	Girls N = 104	$\chi^2$ 1df	Boys N = 115	Girls N = 104	$\chi^2$ 1df
Physical	31.9%	22.1%	2.65	32.2%	16.4%	7.36**
Rumours	23.5%	23.1%	0.01	2.6%	2.9%	0.01
Exclusion	13.0%	23.1%	3.76 <sup>+</sup>	1.8%	2.9%	0.31
Break your things	6.1%	15.4%	5.02*	2.6%	7.7%	2.91
Name-calling	20.9%	31.7%	3.35	1.8%	4.8%	1.63
Threats	22.6%	22.1%	0.01	7.0%	3.8%	1.05
Other way (traditional)	10.4%	10.6%	0.00	1.8%	1.9%	0.01
Nasty texts	36.2%	24.0%	3.83*	36.5%	25.0%	3.39
Nasty video/photo	5.2%	2.9%	0.73	0.9%	1.0%	0.01 <sup>1</sup>
Nasty phone call	1.7%	1.0%	0.24 <sup>1</sup>	0.9%	0%	0.91 <sup>1</sup>
Nasty email	2.6%	10.6%	5.88*	1.7%	0%	1.83 <sup>1</sup>
Chatroom	5.2%	1.9%	1.65 <sup>1</sup>	1.7%	0%	1.83 <sup>1</sup>
Instant messenger	3.4%	11.5%	5.32*	1.7%	1.0%	0.24 <sup>1</sup>
Website	1.7%	2.9%	0.33 <sup>1</sup>	0%	0%	0.00
Other way (cyber)	0%	1.9%	2.25 <sup>1</sup>	0%	1.0%	1.11 <sup>1</sup>

$\chi^2$  Chi-square; <sup>+</sup> $p = 0.05$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; <sup>1</sup>Fisher's exact performed.

state they would feel worried (58.4%,  $N = 97$ ), afraid/scared (57.6%,  $N = 95$ ), upset (56.6%,  $N = 94$ ), stressed (48.2%,  $N = 80$ ), angry (39.8%,  $N = 66$ ), depressed (39.8%,  $N = 66$ ), embarrassed (26.5%,  $N = 44$ ), and not affected (15.7%,  $N = 26$ ). Participants could choose more than one option so the total reported here does not equal 100%.

Participants were more likely to think traditional victims (74.1%,  $N = 123$ ) would be upset than those who were cyberbullied (56.6%,  $N = 94$ ),  $\chi^2$  ( $N = 166$ ) = 12.06,  $p < 0.01$ . Participants were also more likely to think that traditional victims (39.4%,  $N = 65$ ) would be more likely to feel embarrassed than those who were cyberbullied (26.5%,  $N = 44$ ),  $\chi^2$  ( $N = 164$ ) = 6.78,  $p < 0.01$ . There were no significant differences in whether they thought that traditional victims or cyber-victims would be unaffected, feel worried, afraid/scared, angry, depressed or stressed.

### *Recommended responses for victims of cyberbullying*

For cyberbullying, the most commonly suggested responses were: Telling someone (75.2%,  $N = 125$ ), blocking messages (64.8%,  $N = 107$ ), changing email address or

phone number (57.0%,  $N=94$ ), ignoring it (47.9%,  $N=79$ ), reporting it to the police or authorities (41.8%,  $N=69$ ), asking the perpetrator(s) to stop (38.2%,  $N=63$ ), and fighting back (6.7%,  $N=11$ ).

Comparing responses given by participants for traditional and cyberbullying, participants were more likely to recommend that a victim of traditional bullying should ask the perpetrator(s) to stop than they would a cybervictim,  $\chi^2$  ( $N=164$ ) = 13.78,  $p < 0.001$  (38.41%,  $N=63$  for cybervictims vs. 51.83%,  $N=85$  for traditional victims). No other differences reached significance.

## Discussion

This study extends the previous literature by examining cyberbullying among a younger sample. It confirms findings from other investigations (ABA, 2009; Monks et al., 2009; Sakellariou et al., 2012), that children in later primary school can be involved in cyberbullying either as victim or perpetrator. Although the levels of involvement were lower than those reported for traditional bullying, involvement in cyberbullying was considerable among this age group.

There were significant associations between involvement in bullying/cyberbullying and age group. Regarding traditional bullying, younger pupils were more likely than older pupils to report being victims of traditional bullying, and were more likely to report experiencing physical bullying, confirming the predictions made by Björkqvist et al. (1992). Older pupils reported experiencing (as a victim) significantly more types of cyberbullying than younger pupils. There were no significant age differences in relation to involvement in cyberbullying as a perpetrator. This may be due to only a small number of pupils reporting cyberbullying within this sample and the fact that due to sample size it was only possible to compare across two age groups rather than across the various ages.

There were no significant gender differences in the role taken in bullying or cyberbullying. This was unexpected, particularly regarding traditional bully, as previous research has found that boys are more likely than girls to be bullies (e.g. Monks & Smith, 2000). When looking at the numbers of types of aggression used or experienced by boys and girls it was found that girls were more likely to use more types of cyberbullying (as an aggressor) than boys. This suggests that when girls cyberbully, they use more diverse forms, but not that they are overall more likely than boys to be involved in cyberbullying others; rather they have more weapons to use within their arsenal. There were gender differences in the types of cyberbullying and bullying experienced which suggest that girls may be more at risk of being bullied online (nasty emails/via instant messenger), and boys via mobile phone (text messages). It is possible that this finding relates to differential use of ICT by boys and girls. It may be the case that girls are more likely than boys to use the internet to communicate, whereas boys make more use of mobile phones. This was not examined in the current study, but it would be interesting to explore whether there are gender differences in ICT use at this age.

Children who were involved in cyberbullying (as perpetrator or victim) tended to take the same role in traditional bullying. These findings support those of Cassidy et al., (2009), Juvonen and Gross (2008), and Kowalski et al. (2012). Bullying may begin at school (via traditional bullying), but then may continue and escalate outside of school via the internet and mobile phone (cyberbullying). It is also possible that what starts online may escalate at school for some children, and Kowalski et al., also note that being a cyberbully may place individuals at heightened risk for becoming the target of cyberbullying as well.

Children had negative emotional reactions to cyberbullying; around three-quarters thought that it was as upsetting or more upsetting for the victims than traditional bullying. Most thought that victims of cyberbullying would have unpleasant emotional reactions; worried, upset, afraid/scared were frequently reported. Very few (around 16%) thought that cyberbullying would not affect the victim. Participants perceived both forms of bullying negatively and with similar emotional responses from the victims.

When asked how they thought victims of cyberbullying should respond to the harassment, children were most likely to recommend them to tell someone. Other commonly recommended responses were to block the messages, and change email address or phone number. Very few (under 7%) recommended 'fighting back'. As yet, there are no studies to examine the effectiveness of these strategies and whether children this age use them. However, they are reflective of recommendations given by intervention programmes used in schools to combat bullying generally. Pupils were less likely to suggest that a cybervictim should ask the perpetrator(s) to stop compared to a victim of traditional bullying. This may relate to the more anonymous nature of some forms of cyberbullying which could mean that it is more difficult to identify the aggressor.

There are a number of limitations to this study. Although we carried out multiple analyses, we did not apply Bonferroni correction. This was because this study was exploratory and we did not have firm predictions. When we examined the emotional responses of victims and coping strategies, we only looked at the perceptions of children of how they *thought* victims might feel and what they would recommend they do. We did not examine how victims actually feel and what they do in response to victimization, and importantly, how effective these strategies are. Furthermore, we did not focus on children's behaviour in online games or on social networking sites. Social networking sites such as Facebook have age limits (13 years), although anecdotal evidence suggests that some children under this age may be using them. In recent years there has been a growth in the number of online games available and there are an increasing number which are directly targeted at primary school aged children (children under the age of 12 years), such as Club Penguin. It would be interesting for future studies to explore children's experiences in these settings. Furthermore, the study relied on self-reports of children's behaviour. Although the questionnaires were anonymous and children were told that no one would get

into trouble as a result of what they had written on the questionnaire, there is still the issue that participants may have been providing socially desirable responses, resulting in an underestimation of the levels of involvement in traditional bullying and cyberbullying.

The findings indicate that intervention work needs to focus, not only on children in secondary school, but also those in primary school. Some pupils in the current study reported experiencing or carrying out cyberbullying behaviours. Although the levels of involvement in cyberbullying in this study are lower than those for traditional bullying, pupils had negative emotional reactions to cyberbullying and thought that victims would be negatively affected by it. Therefore, it is important that children as well as staff and parents are educated about this issue from the point when children first begin to use the internet and mobile phones. The findings of the current study also suggest that children should be taught about the negative impact that cyberbullying may have on those who experience it.

Schools in the UK are required to have an Anti-Bullying Policy, although Smith, Smith, Osborn, and Samara (2008b) found that few primary school anti-bullying policies mention cyberbullying. In 2009 National Anti-Bullying Week (an awareness raising campaign) focussed on cyberbullying, so it is possible that schools may now be more likely to include cyberbullying in their anti-bullying work, and pupils in this study endorsed a number of different ways to deal with cyberbullying (although the uptake and effectiveness of these methods have not been evaluated). Mobile phones are usually banned in school and access to the internet restricted. However, as mentioned in the introduction, much cyberbullying tends to occur outside of school, but may include children who know each other through school (e.g. Juvonen & Gross, 2008) which means that schools, in partnership with parents, have an important role to play in helping to combat cyberbullying.

The finding that those involved in cyberbullying are often involved in traditional forms of bullying at school (within the same role) within this sample supports the suggestion made by Pearce, Cross, Monks, Waters, and Falconer (2011). They propose that anti-bullying work on traditional bullying may be able to reduce cyberbullying as well. However, they also note that there are some aspects of cyberbullying (such as the potential for it to reach the victim anytime, anywhere; that the perpetrator may be anonymous and that some forms of cyberbullying make it possible for there to be a very large audience) which mean that specific, cyberbullying focussed interventions are also necessary. Although there are some similarities between cyberbullying among adolescents and upper primary school pupils, it is important that intervention and prevention work is age-appropriate. In particular, work should take into account the different forms of cyberbullying, and perhaps differing uses of electronic forms of communication by younger and older children. However, it is imperative that anti-cyberbullying work begins when children are in primary school with the aim to educate them (as well as their teachers and parents) about how to use these forms of communication appropriately.

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