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Exploring traditional and cyberbullying among Irish adolescents

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Abstract
Objectives This study aimed to explore the associations of traditional and cyberbullying victimisation with self-reported health and life satisfaction, and to examine whether involvement in risk behaviours contributes to these health outcomes.
Methods We asked questions on involvement in traditional and cyberbullying, risk behaviours, self-reported health and life satisfaction to school children. In total, 318 students aged from 15 to 18 years old in 8 post-primary schools in Ireland completed the survey.
Results Children who were victims of bullying were more likely to report poor health, low life satisfaction and engaging in risky behaviours. Although not statistically significant, we found that cyber victimisation was positively associated with increased reporting of poor health and low life satisfaction.
Conclusion Traditional bullying is the most common type of bullying among school children in Ireland, and overall, seems to have a stronger association with poor health. However, a sizable proportion of children are victims of cyberbullying or of both cyberbullying and traditional bullying. It is, therefore, important to acknowledge, identify and address all types of bullying to improve the health outcomes of children.

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Introduction

Bullying, both traditional and cyber, is a serious public health concern as it has substantial effects on children's lives (Bannink et al. 2014; Menesini et al. 2009), some of which may continue into adulthood. Traditional bullying has been described as repeated aggressive behaviour with the intention to cause harm, within the context of an asymmetrical power relationship (Olweus 1993). While its definition is debated, cyberbullying has been described as an extension to traditional bullying (Anti-Bullying Working Group 2013) and as a discrete form of bullying (Wang et al. 2009). Cyber victimisation includes such actions as harassment, humiliation or insulting behaviour towards other people using technology (Wigderson and Lynch 2013). While there are some overlaps between traditional and cyberbullying, there are also important differences which can affect the impact on victims (Smith 2012). Unlike traditional bullying, cyberbullying has no geographic boundaries and it expands beyond the school and the playground into children's own homes and bedrooms. It often reaches a much larger audience in a short period of time and perpetrators can also remain anonymous (Mishna et al. 2009). There is limited adult supervision, and direct feedback between the bully and the victim as well as decreased time and space limits (Slonje and Smith 2008).

The associations between traditional bullying and negative health outcomes are well established. Victims of traditional bullying are more likely to experience poor health, including symptoms such as headache and stomach ache (Due et al. 2005) and poorer psychological outcomes

such as anxiety and depression (Menesini et al. 2009), while bullies are more likely to report involvement in substance use such as drinking and taking drugs (Radliff et al. 2012).

However, less is known about the impacts of cyberbullying on general health and life satisfaction. Previous studies on cyberbullying suggest that those that are cyberbullied are more likely to experience a range of poorer psychological health symptoms (Menesini et al. 2009) including depression (Sweeting et al. 2006), anxiety (Storch et al. 2005) and lower self-esteem (O'Moore and Kirkham 2001). A large scale study in Sweden reported that being a victim of cyberbullying was associated with worse subjective health than those not involved in cyberbullying (Låftman et al. 2013). Victims of traditional bullying were found to be at an increased risk of also being cyberbullying victims; however, the majority of cyberbullying victims were not likely to be victims of traditional bullying (Låftman et al. 2013; Ybarra et al. 2007). The characteristics of cyberbullying are thought to result in a worse effect on the health and well-being of the victim compared to traditional bullying (Sticca and Perren 2013).

While traditional bullying has been decreasing in many countries (Molcho et al. 2009), little is known about cyberbullying rates. Overall, Ireland has relatively low traditional bullying rates when compared to other countries (Craig et al. 2009) and rates appear to have stabilised in recent years (Kelly et al. 2012). Cyberbullying is a recent phenomenon compared to traditional bullying, which has been gaining increasing interest within the past decade. The first survey on cyberbullying in Ireland took place in 2012, with 13.9 % of children reporting being cyberbullied (O'Moore 2012). Compared to traditional forms of bullying, less is known about the effects of cyberbullying and this is particularly true for Ireland where research in the area is limited.

In recent years, using online technologies to communicate and relate to others has become a central part of daily life for children and adolescents (Livingstone et al. 2011). In Ireland, access to information and communication technologies (ICT) has increased dramatically in recent years. In 2006, 57 % of households in Ireland reported that they had a PC which increased to 78 % in 2011, while 47 % of households in 2006 reported that they had access to the internet which increased to 72 % in 2011 (Central Statistics Office 2006, 2011). From 2002 to 2010, there was an increase in the percentage of young people (from 31 % in 2002 to 51 % in 2010) reporting that they use electronic communication every day with their friends in Ireland (Gavin et al. 2013). Smartphones (35 %) are the most used device for accessing the internet among children aged 9–16 years in Ireland, followed by laptops (29 %) and tablets (27 %) (O'Neill and Dinh 2014). One of the main benefits of ICT is that they allow children and adolescents to broaden the number of social networks and relationships they have. While the internet facilitates mainly positive or neutral online interactions (Wigderson and Lynch 2013), and can have many positive consequences on lives (Pénard et al. 2013), there are also risks associated with increased use including internet addiction (Adiele and Olatokun 2014) and cyberbullying (Slonje and Smith 2008).

Recognising that traditional and cyberbullying are associated with risk behaviours, poorer health and well-being, the aims of this study are to explore:

1. What is the prevalence of the different types of bullying in Ireland?
2. If traditional and cyberbullying victimisation is associated with poor self-reported health and low life satisfaction?
3. Whether involvement in risk behaviours contributes to self-reported health and life satisfaction?

Methods

Study sample

A total of 318 students (59 % boys, 41 % girls) aged 15 to 18 years who completed the Health Behaviour in School-aged Children (HBSC) pilot survey in 2012/13 were included in the analysis. Using convenience sampling, a total of 8 schools from across Ireland were invited and agreed to take part in the study. Questionnaires were distributed to students during a class period by researchers who explained the background and purpose of the study. Participants were assured that participation was voluntary, anonymous and confidential. The questionnaire took approximately 40 min, or one class period, to complete. Consent was sought from parents and students, if requested by the school. Ethical approval for the study was granted by the institutional Research Ethics Committee.

Variables

Cyberbullying index

A cyberbullying index was created based on questions regarding experiences of three behaviours related to cyberbullying. The questions were 'How often have you been bullied at school in the past couple of months in the ways listed below? Someone sent mean instant messages, wall postings, emails and text messages, or created a Web site that made fun of me; Someone took unflattering or inappropriate pictures of me without permission and posted

them online; Someone tricked me into sharing personal information in an email or text message and forwarded that'. Response options included 'I have not been bullied in this way in the past couple of months'; 'It has only happened once or twice'; '2 or 3 times a month'; 'About once a week'; and 'Several times a week.' Not being bullied in any of the three ways in the past couple of months was scored 0, and all other responses were assigned a score of 1.

Traditional bullying

Traditional bullying was measured using the question 'How often have you been bullied at school in the past couple of months?' with the response options 'I have not been bullied in this way in the past couple of months'; 'It has only happened once or twice'; '2 or 3 times a month'; 'About once a week'; and 'Several times a week'. Children who reported that they have not been bullied in the past couple of months were scored 0 and all other responses scored 1.

Risk behaviour index

A risk behaviour index was created from questions regarding engagement in four behaviours related to substance use and sexual activity. The behaviours (frequency of smoking, drinking alcohol, cannabis use and sexual behaviour) were based on questions used in a risk behaviour index by Brooks and colleagues (Brooks et al. 2012). A score of 0 was assigned to those with no engagement in any risk behaviours, a score of 1 was assigned to those who reported engaging in smoking cigarettes or drinking alcohol once or twice in the past 30 days, taking cannabis once or twice in their lifetime or reporting engaging in sexual intercourse and using a condom the last time that they did. A score of two was assigned to those who reported smoking cigarettes or drinking alcohol three or more times in the past 30 days, taking cannabis three or more times in their lifetime or reporting having sex without a condom the last time they had sexual intercourse. All scores were then added together to create a risk behaviour scale ranging from 0 to 8. A risk behaviour index was created based on this scale where a score of 0–1 indicated low risk, a score of 2–4 indicated medium risk and a score of 5–8 indicated high risk.

Life satisfaction

Life satisfaction was assessed using the Cantril Ladder of Life, which has showed good convergent validity and reliability for measuring life satisfaction among adolescents (Currie et al. 2010). Participants were presented with a picture of a ladder numbered from 0 to 10 and asked about what type of life they felt they have at the moment using the following question 'Here is a picture of a ladder. The top of the ladder '10' is the best possible life for you and the bottom '0' is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment? Tick the box next to the number that best describes where you stand.' Responses were collapsed into a binary variable where having a high life satisfaction (10–6) scored 0 and having a low life satisfaction (5-0) scored 1.

Health

Self-reported general health was measured using the standard question on global health status (Currie et al. 2010), 'Would you say your health is excellent, good, fair or poor?' A binary variable was created with excellent scored as 0 and not excellent scored as 1.

Statistical analysis

Pearson's Chi-squared test with a significance level of 0.05 was used for descriptive statistics. Associations between victimisation, involvement in risk behaviours and general health and life satisfaction were tested. Binary logistic regression analyses, with 95 % confidence levels, were used to examine the associations between bullying type, risk, life satisfaction and general health. Two statistical models stratified by gender, to investigate the associations in both boys and girls, are presented in this paper. All analyses were conducted using IBM SPSS Statistics version 20.

Results

Study sample

Overall, 66 % of the sample reported that they were never bullied, with 14 % reporting that they were bullied in a traditional way, 10 % reported that they were cyberbullied and a further 10 % reported that they were victims of both traditional and cyberbullying. Boys were more likely to report that they were bullied in a traditional way, but girls were more likely to report that they were victims of both traditional and cyberbullying (Table 1).

Children who were victims of any type of bullying, were more likely to report poor health and low life satisfaction. While the effect on reporting poor health is weak and not significant, a much stronger effect is demonstrated in relation to low life satisfaction. This effect was particularly strong in relation to traditional bullying, and was stronger among girls compared to boys (Table 1).

Table 1 Reported health and well-being by bullying and risk status, collected as part of the Health Behaviour in School-aged Children pilot study in Ireland 2012/13 % (*n*)

	All		Self rated health				Reported life satisfaction			
			Excellent		Not excellent		High		Low	
	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*
Never bullied										
All	66.3	209	73.8*	76	62.7*	133	71.6*	161	52.8*	47
Boys	67.6	125	71.0	49	65.5	76	71.1	96	56.0	28
Girls	64.6	84	79.4	27	59.4	57	72.2	65	47.5	19
Traditional only										
All	14.3	45	11.7	12	15.6	33	11.1*	25	22.5*	20
Boys	15.7	29	14.5	10	16.4	19	14.1	19	20.0	10
Girls	12.3	16	5.9	2	14.6	14	6.7	6	25.0	10
Cyber only										
All	9.8	31	8.7*	9	10.4	22	8.4	19	13.5	12
Boys	10.3	19	10.1	7	10.3	12	8.9	12	14.0	7
Girls	9.2	12	5.9	2	10.4	10	7.8	7	12.5	5
Traditional and cyber										
All	9.5	30	5.8	6	11.6	24	8.8	20	11.2	10
Boys	6.5*	12	4.3	3	7.8	9	5.9*	8	8.0*	4
Girls	13.8*	12	8.8	3	15.6	15	13.2*	12	15.0*	6
Low risk										
All	58.2	184	68.3*	71	53.3*	113	62.2*	140	48.9*	44
Boys	50.5*	94	62.9*	44	43.1*	50	53.3*	72	44.0	22
Girls	69.2*	90	79.4*	27	65.6*	63	75.6*	68	55.0	22
Medium risk										
All	27.5	87	25.0	26	28.8	61	27.1	61	27.8	25
Boys	31.2	58	30.0*	21	31.9	37	31.9*	43	28.0	14
Girls	22.3	29	14.7*	5	25.0	24	20.0*	18	27.5	11
High risk										
All	14.2	45	6.7*	7	17.9*	38	10.7*	24	23.3*	21
Boys	18.3*	34	7.1*	5	25.0*	29	14.8*	20	28.0	14
Girls	8.5*	11	5.9*	2	9.4*	9	4.4*	4	17.5	7

* $p < 0.05$

Risk behaviours

The majority of children were at low risk of involvement in risk behaviours (more girls than boys), with 28 % categorised as medium risk and 15 % categorised as high risk-takers. Boys were more likely to report involvement in risk behaviours at all levels. Those reporting risky behaviours were also much more likely to report poor health and low life satisfaction (Table 1).

Traditional and cyberbullying

Risk behaviours and engagement in bullying were associated. Children who reported they were victims of cyberbullying alone were much more likely to report risk-taking behaviours both at the middle and high point of the risk-taking behaviour index. Children reporting both cyberbullying and traditional bullying reported higher prevalence of high risk-taking behaviour ($p < 0.05$) (data not presented).

General health and life satisfaction

Table 2 presents models of logistic regressions predicting poor health and low life satisfaction. Models 1 and 3 present the separate analyses of bullying victimisation and involvement in risk behaviours in predicting the outcomes under study, while models 2 and 4 present the full models.

Table 2 Models of logistic regression predicting health and life satisfaction by gender, collected as part of the Health Behaviour in School-aged Children pilot study in Ireland 2012/13

	Poor health				Low life satisfaction			
	Model 1		Model 2		Model 3		Model 4	
	OR	CI	OR	CI	OR	CI	OR	CI
Boys								
Bullying								
Never	1	–	1	–	1	–	1	–
Traditional bullying	1.22	0.52–2.85	1.21	0.50–2.93	1.96	0.81–4.76	2.09	0.851–5.14
Cyberbullying	1.10	0.40–3.01	0.73	0.25–2.15	2.27	0.780–6.44	1.97	0.67–5.791
Traditional and cyber	1.94	0.50–7.530	1.65	0.40–6.74	1.61	0.45–5.83	1.44	0.39–5.35
N	185				184			
Risk								
Low	1	–	1	–	1	–	1	–
Mid	1.57	15.15	1.79	0.89–3.61	1.03	0.48–2.24	1.07	0.48–2.39
High	5.32**	1.87–14.32	5.76**	1.97–16.89	2.08	0.89–4.86	2.05	0.87–4.98
N	186		184		185		183	
Girls								
Bullying								
Never	1	–	1	–	1	–	1	–
Traditional bullying	3.10	0.65–14.76	3.23	0.68–15.33	5.66**	1.81–17.62	6.26**	1.94–20.20
Cyberbullying	2.42	0.49–11.82	1.90	0.37–9.93	2.46	0.70–8.65	2.09	0.54–8.11
Traditional and cyber	2.45	0.65–9.27	2.30	0.60–8.80	1.72	0.57–5.22	1.57	0.4–4.98
N	130				130			
Risk								
Low	1	–	1	–	1	–	1	–
Mid	2.11	0.73–6.15	1.78	0.587–5.44	1.89	0.78–4.63	1.62	0.61–4.33
High	1.79	0.396–8.97	1.74	0.34–8.93	5.37[a]	1.41–20.37	6.21**	1.56–24.70
N	130		130		130		130	

**$p < 0.01$

[a] All analyses are controlled for age

In predicting poor health, among boys, while being involved in high risk behaviours increases the risk for poor health by fivefold ($p < 0.01$), being a victim of both cyber and traditional bullying did not significantly predict poor health. Similarly, among girls, no significant association between victimisation and poor health was observed. The full model suggests that for boys, involvement in various risk behaviours remains the strongest predictor of poor health ($p < 0.01$).

With regards to low life satisfaction, model 3 suggests that for girls being a victim of traditional bullying (OR 5.66, $p < 0.01$) and being involved in high risk behaviours are a significant risk for low life satisfaction (OR 5.37, $p < 0.01$). The full model suggests that life satisfaction is not strongly predicted by bullying victimisation or risk behaviours among boys; however, among girls being a victim of traditional bullying, over and above the involvement in risk behaviours, increases the risk for low life satisfaction by sixfold ($p < 0.01$). Similarly, being involved in high risk behaviours, over and above being a bullying victim increases the risk of low life satisfaction (OR 6.21, $p < 0.01$).

Discussion

This study set out to explore the prevalence of the different forms of bullying, the associations of the different forms of bullying with self-reported health and life satisfaction, and whether risk behaviours can explain differences in the predicted outcome, over and above the effect of bullying.

In line with other studies, the results of this study show that traditional bullying is still the most common type of bullying victimisation (Slonje and Smith 2008). We found that traditional and cyberbullying victimisation are common occurrences in Irish post-primary schools with

one-third of the students surveyed reporting being bullied in these ways once or more in the past couple of months. This figure is slightly higher than results from other studies in Ireland where 24 % of children reported ever having been bullied in the HBSC study (Kelly et al. 2012) and slightly lower than the findings of the Growing Up in Ireland (GUI) study where 40 % of 9-year-olds reported being a victim of bullying in the past year (Williams et al. 2009). In total, 9.8 % of children reported being cyberbullied once or more in the past couple of months, which is lower than the 13.9 % reported in a previous study on cyberbullying in Ireland (O'Moore 2012). However, the age group under investigation in our study is older than that reported in these studies and bullying victimisation usually decreases with age (Craig et al. 2009; Molcho et al. 2009).

This study shows that cyber and traditional bullying differs for male and female adolescents, highlighting a need for gender-specific research on traditional and cyberbullying. As with other research, bullying was more prevalent among boys than girls but only when looking at single forms of bully victimisation (traditional or cyber). When we look at those that were both traditionally and cyberbullied, a higher proportion of girls than boys reported being victims of both. There is some evidence of a differential effect of cyberbullying between boys and girls (Iossi Silva et al. 2013), although the findings are inconsistent. Some studies report no gender differences (Hinduja and Patchin 2008), others report that girls are more likely to be cyber victims (Beckman 2013; Sourander et al. 2010) and that boys are more likely to be cyberbullies (Mishna et al. 2012). Previous research suggests that girls are more likely to engage in indirect bullying and since traditional and cyberbullying include aspects of this, this could explain why more girls reported being victims of both. Girls are also more likely to disclose themselves as victims of bullying than boys, which could also explain why they are more likely to identify themselves as victims of both types of bullying together.

Previous research has found that there are also gender differences in self-reported health and life satisfaction during adolescence, with more girls reporting fair or poor health and more boys reporting higher life satisfaction (Currie et al. 2008). Not many studies have compared the health outcomes of traditional- and cyberbullying. This study adds to this limited body of knowledge. In this current study, a higher percentage of children reported poorer health and lower life satisfaction, within the different bullying categories. Consistent with other research, victims of bullying were more likely to report poorer health (Sigurdson et al. 2014) and lower well-being (Rigby 2000). In boys, poorer health is also associated with frequent computer use (Nuutinen et al. 2014) which may explain why more boys than girls reported only being a cyberbullying victim and reported poorer health and lower life satisfaction within this category. The regression analyses show that being a victim of both cyberbullying and traditional bullying increases the risk of poor health among boys, while being a victim of cyberbullying is a risk for low life satisfaction among boys, although this was not significant. One explanation for this could be that the non-relenting nature of cyberbullying, either on its own or in conjunction with traditional bullying–cyberbullying can continue away from the school, which may contribute to poorer health outcomes. For girls, being a victim of traditional bullying was the strongest predictor of low life satisfaction. It was also the most prominent factor for poor health, but only at the sample level. Previous studies have found that traditional bullying victimisation was associated with mental health problems among girls (Bannink et al. 2014). This could be partly explained by the differences in bullying type that boys and girls are exposed to—girls more often experience relational bullying victimisation and this type of victimisation may be particularly detrimental to health but further exploration in this area is required (Bannink et al. 2014).

Although not significant, some effects of bullying on health and well-being were evident; for boys, the strongest predictor for poor health was engaging in high level risky behaviour; and for girls, engaging in medium level risky behaviour was a prominent factor in reporting low life satisfaction at the sample level. Substance use remains a threat to the health (and well-being) of adolescents. A total of 43 % of adolescents surveyed were classified as being medium to high risk-takers, which also has important implications from a public health perspective. Previous studies have indicated that males are more likely to use substances (Young et al. 2002) and engage in risky behaviour than females (Harris et al. 2006) which is consistent with the findings of this study, with more boys than girls engaging in high risk behaviour.

Limitations

This study was part of a non-randomised pilot study, with a relatively small number of participants in a non-representative sample; thus, how it may be applied to the general student population is unknown. It is also cross-sectional in its design, and therefore only associations between bullying and health can be observed, and not causality. In terms of measuring cyberbullying, there is currently no fixed definition or agreement of the method of measurement. Moreover, communication technologies are often changing making it difficult to establish a fixed definition. There are also many different aspects of cyberbullying and only some of these aspects were used in our study. The questions on cyberbullying refer to school only and not cyberbullying in

general, which is also a limitation. Health and life satisfaction were also assessed using self-reported items, which may have been influenced by social desirability.

Conclusion

Although this is a pilot study, it contributes to a broader understanding of the effects of cyberbullying victimisation on adolescent health. The findings presented here have important implications for national and international research and policy. The co-occurrence of traditional and cyberbullying suggest that those working with children should be mindful that when a child is bullied, they are likely to be bullied in more than one form, with differences in effects by gender. The need for gender-specific research is apparent. Given the implication of multi-form bullying victimisation, the need for intervention is evident. The continuing rise in ICT use in Ireland indicates a potential increase in exposure to cyberbullying, which carries risks that also need to be recognised. Since cyberbullying is an important public health issue, there is a need for it to be dealt with in time, and there is also a need for concrete tools to handle the increasing problems with cyberbullying. School anti-bullying policies should also be revised and updated in an ongoing manner, to reflect the dynamic nature of the internet and cyberbullying. More efforts are required to assess the effectiveness of existing anti-bullying policies within schools. Recognising the need to focus on cyberbullying, attention should not be detracted from risky behaviours among adolescents, given the associated negative health outcomes which should also be addressed. Further research is warranted on the risk and protective factors in relation to cyberbullying in Ireland and beyond.

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