

Cyberbullying victimisation in adolescence: relationships with loneliness and depressive mood

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Cyberbullying is deliberate, aggressive activity carried out through digital means. Cybervictimisation in adolescence may be related to negative psychosocial variables such as loneliness and depressive mood. The purpose of the present study, the first of its kind in Israel, was to examine the association between adolescent cybervictimisation and two socio-emotional variables: loneliness and depressive mood. The sample consisted of 242 Israeli adolescents, aged 13–16 years, who completed questionnaires regarding Internet use, cyberbullying, traditional bullying, loneliness and depressive mood. In total, 16.5% of the participants reported being cybervictims and 32.5% reported knowing someone who was cybervictimised. The results revealed a relationship between cybervictimisation and loneliness (social, emotional and general) as well as depressive mood. A logistic hierarchical regression found that loneliness, gender and depressive mood each explained some variance in cybervictimisation in adolescents. As an anchor for comparison, and in order to shed light on the findings, results are presented in comparison to traditional bullying. The results make a contribution to national and international cyberbullying research and broaden the knowledge about potential risk factors for cybervictimisation.

Keywords: cyberbullying; cybervictimisation; adolescents; loneliness; depressive mood

Introduction

The phenomenon of cyberbullying among children and adolescents has been on the rise in recent years. Studies in Europe, the USA and Canada indicate that approximately 20% of teenagers aged 7–18 who used the Internet reported repeated experiences of cyberbullying (Ybarra and Mitchell 2004; CyberTraining 2008; Vandebosch and Van Cleemput 2009; Cyberbullying Research Center 2010; Mishna et al. 2012). In Israel, the use of social networks is very high (75% of 16–18-year-olds, 50% of 10–12-year-olds and 25% of 7-year-olds) (Knesset–Israeli Parliament 2011). However, only a few studies (Mesch 2009; Tarabulus, Heiman, and Olenik Shemesh 2011) have examined cyberbullying in Israel, its rates, patterns and associations with socio-emotional variables. The current study, the first of its kind in Israel, aims at studying cybervictimisation in Israeli adolescents, focusing on the link between cybervictimisation and two socio-emotional variables: loneliness and depressive mood.

In episodes of cyberbullying, three kinds of participants take part: the *perpetrators*, who deliberately send verbal or visual messages (photos, video clips) in order to threaten,

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intimidate, hurt or humiliate another person; the *victims*, who suffer the harm, insult and/or injury; and the *bystanders* (Levine and Crowther 2008), who see the hurtful messages and occasionally take an active part in cyberbullying, such as forwarding the messages to others (Slonje, Smith, and Frisé 2012) or responding behind the scenes.

The *cybervictims* receive hurtful, offensive or threatening verbal messages, photos and/or video clips, and are influenced intensively by cyberbullying. Most cybervictimisation occurs during adolescence (11–17 years) (Tokunaga 2010). Studies have found a close relationship between cybervictimisation and traditional victimisation (Ybarra and Mitchell 2004; Vandebosch and Van Cleemput 2008); for example, Li (2007) found that one-third of the victims of traditional bullying are victims of cyberbullying.

Until recently, victims of traditional bullying could find sanctuary in the privacy of their home, but cyberbullying has left victims nowhere to escape to. Cybervictims may have their social network account broken into; they may fall victim to various activities such as impersonation and spreading of rumours about them (Druck and Kaplowitz 2005). Most of them feel helpless towards the hurt and do not know how to stop the attacks through the net, but do not tend to share their concerns with surrounding adults (parents, teachers). Price and Dagleish (2010) noted that adolescents who are cybervictims believe that adults are less familiar with the cyberworld and afraid that if they involve their parents, they will not allow them to use the computer.

Loneliness, depressive mood and adolescents' cybervictimisation

Aside from specific types of social difficulties (e.g. low social status, low level of social integration), the literature regarding social and emotional links with cybervictimisation points to a sense of loneliness and depressive mood as affecting the risk of being victimised (Ybarra et al. 2006; Didden et al. 2009).

A sense of *loneliness* reflects a discrepancy between an individual's expectations of interpersonal relations and his or her social situation in reality (Peplau and Perlman 1982); it arises when the universal and fundamental need for belongingness and establishing stable social bonds with caring others is not adequately satisfied (Cacioppo and Patrick 2008). The experience of loneliness may be manifested by difficulty in establishing close intimate relationships, having few friends, and experiencing frustration and dissatisfaction with existing relationships (Asher et al. 1990), less interest in developing social relationships and reduced active involvement in friendships (Nurmi and Salmela-Aro 1997). The sense of loneliness contains characteristics that may interfere with an adolescent's ability to initiate contacts with others, e.g. low social risk-taking, low perceived likability, high social anxiety and high public self-consciousness, in a period in life when all these variables are most important. As Rappoport (1972) noted, the social role of adolescents is in a sort of 'limbo', in which they are deprived of a clear sense of belonging, attachments, avenues of participation and a socially affirmed role in the society. Lonely adolescents experience this social limbo most directly through the sense of emptiness, isolation and boredom, while their main developmental task at this age is to facilitate attachments, commitments and new modes of social participation.

The distinction between *social loneliness* and *emotional loneliness* was first presented by Weiss (1973), but remained largely ignored by many studies (Clinton and Anderson 1999). *Social loneliness* is defined by an absence of companionship or a failure of social integration. *Emotional loneliness* is defined as an unsatisfied 'need for intimacy' (Weiss 1989, 8–11), an absence of psychological intimacy. It is the failure of a relationship to move beyond companionship and into a realm where private and deeply personal hopes,

confusions and failures are both shared and clarified. The absence of such intense emotional support and attachment signals loneliness that is close to the pathology of chronic anxiety and complete psychological isolation (Clinton and Anderson 1999). Emotional loneliness may be satisfied, especially in adolescence, through a best-friend relationship that becomes sufficiently unwavering to mollify these needs for intimacy and attachment.

Moods are generally defined as diffuse and long-lasting emotional states that influence rather than interrupt behaviour. *Depressive mood* is assessed through mood states of anger, confusion, depression, fatigue and tension (Russell 2003; Terry, Lane, and Fogarty 2003). Loneliness and depressive mood are usually intercorrelated. It appears that adolescents with depressive mood symptoms may have difficulties identifying social cues and interacting successfully with peers. Feelings of loneliness would be accompanied by a sense of negative mood, which may develop into depression (Kazdin and Marciano 1998).

In research on traditional bullying, loneliness and depressive mood have been found to show a strong positive correlation with victimisation. In adolescence, when social status and peer relations have great importance (Steinberg and Morris 2001), the social avoidance, lack of close peer relationships and sense of loneliness become even more crucial than in other periods of life.

It seems that these two socio-emotional variables are also associated with cybervictimisation. The research literature regarding cybervictimisation suggests that being a cybervictim might be associated with strong negative feelings, sometimes higher than those experienced in traditional victimisation (Mitchell, Ybarra, and Finkelhor 2007). Studies imply that adolescents who tend to be lonely and relatively isolated as well as suffer bad mood and sadness sometimes seek to compensate for their lack of social contacts by finding refuge on the Internet, where they do manage to develop relationships but become more prone and vulnerable to cybervictimisation (Peter, Valkenburg, and Schouten 2005; Van den Eijnden et al. 2006). Hodges, Malone, and Perry (1999) describe a vicious cycle in which lonely teenagers become targets for bullies, and as they experience more victimisation are more likely to become socially withdrawn, which in turn creates further victimisation, followed by further loneliness. Sahin (2012) claims that loneliness plus Internet use creates an ideal environment for cybervictimisation in children. However, only a few studies have focused on this specific relationship between loneliness, depressive mood and cybervictimisation in teenagers. Some studies have found a link between cybervictimisation, depressive symptoms and suicidal thoughts (Wang, Iannotti, and Nansel 2009; NIH 2010; Brighi et al. 2012), particularly for boys (Ybarra 2004). McGilvray (2009) found that cybervictimisation is more associated with suicidal thoughts than any other type of bullying.

Research objectives

This study focuses on the relationship between cybervictimisation, loneliness and depressive mood in adolescents. It investigates the role of loneliness and depressive mood in the experience of being a cybervictim. We hypothesised that cybervictimisation would be associated with loneliness and depressive mood. We first studied cybervictimisation, its prevalence and patterns in an Israeli sample, and then we studied the relationship between cybervictimisation, loneliness and depressive mood. While examining the relationship between cybervictimisation and loneliness, the study addresses general sense of loneliness as well as the two constituent components: social loneliness and emotional loneliness. As an anchor for comparison, and in order to shed light on and study the uniqueness of cybervictimisation, results are presented in comparison to traditional victimisation.

Method

Participants

The sample consisted of 242 Jewish Israeli adolescents (117 boys, 125 girls) aged 13–16 years (mean = 14.40, SD = 1.14) who completed questionnaires regarding Internet use, cyberbullying, traditional bullying, loneliness and depressive mood. Three schools took part; in each school, three or four classes participated. Data were collected between March and June 2010.

School characteristics

The three schools represented different parts of the country: the north area, the central part and near the coast. The northern and central schools were from 7th to 12th grade (junior high and high school) with 1500–2000 students each; these schools were regional schools that served the surrounding villages and towns in the area. The near-coast school was from 10th to 12th grade with 1200 students; it served a main city.

Within all schools, the student population was heterogeneous and the classes were integrative; schools offered the students a flexible schedule with various combinations of majors (subjects which the students choose to study on an advanced level); parents were involved in school life and the students were expected to carry out service for the community.

The socio-economic level of the students was reported by the school principal. According to the school criteria based on the parents' education and salary, the distribution was: 10% low, 35% low–medium, 40% medium–high and 15% high socio-economic level.

Procedure

After receiving approval from the research ethics board and the local school principal, letters were sent to parents via the class teachers, and returned to school by students. The letters explained the nature of cyberbullying and the intended study, and parents could object to their child's participation. The questionnaires were distributed to the students during one study period in their classrooms, under the supervision of one of the researchers. Students completed the questionnaires anonymously. The participation rate was high, with 95% of eligible students participating in the study.

Measures

Cyberbullying Questionnaire (Smith et al. 2008)

This 28-item self-report questionnaire examines children's and adolescents' experiences of cyberbullying and is divided into four subsections: (1) general information on Internet usage (i.e. email, ICQ/Messenger, schoolwork, games, etc.); the respondent is requested to report the location of the 'Internet usage'; (2) the participant's personal experience of being exposed to traditional bullying and cyberbullying; the questionnaire presents a definition of bullying and cyberbullying followed by questions regarding involvement in traditional bullying and cyberbullying as a victim, as a perpetrator and as a bystander; the prevalence of cybervictimisation and traditional victimisation was examined through a series of questions regarding the hurt: 'Have you ever been cyberbullied/bullied?' (yes/no), 'Do

you know of anyone who has been cyberbullied/bullied?’ (yes/no), ‘What was the frequency of harassment?’ (often, sometimes, a few times); the types of cybervictimisation (verbal abuse, offensive ICQ, offensive text messages, rude and offensive emails, offensive pictures and video clips); (3) involvement as a bystander in a bullied setting; and (4) information about the participant’s opinions and perceptions regarding cyberbullying and traditional bullying.

Evidence for construct validity has been shown in previous studies (Smith et al. 2008; Steffgen et al. 2011; Brighi et al. 2012). The questionnaire was translated from English into Hebrew and then translated back into English (back-translation) by three judges to check the accuracy of the translation.

Loneliness Questionnaire (Asher et al. 1990)

This questionnaire rates 17 primary items and eight filler items on a five-point Likert scale ranging from ‘never feel like this’ (1) to ‘always feel like this’ (5). Higher scores reflect greater loneliness, or stronger feelings of loneliness. The 16 primary school-based items (e.g. ‘It’s easy for me to make new friends at school’ or ‘I feel left out of things at school’) comprised the general loneliness measure (Cronbach’s $\alpha = 0.86$). The general scale was divided into two subscales: Social loneliness (four items, Cronbach’s $\alpha = 0.83$) and Emotional loneliness (10 items, Cronbach’s $\alpha = 0.82$).

Children’s Depression Inventory (CDI) (Kovacs and Beck 1977)

In this questionnaire, 27 statements (e.g. ‘No one really loves me’, ‘All the bad things are my own fault’ or ‘I am sad all the time’) are scored on a three-point Likert scale, never (0), sometimes (1), always (2), as the best description of the respondent’s feelings for the past two weeks. A higher score represents greater depressive mood (Cronbach’s $\alpha = 0.80$).

Data analysis

SPSS 18 was used to analyse the data. In the first phase, we studied the descriptive data related to cybervictimisation (prevalence, frequency, patterns and gender differences). In the second phase, we studied the associations between cybervictimisation and loneliness and depressive mood, by conducting two-way multivariate analyses of variance (MANOVAs) with gender and cybervictimisation, in the form of a comparison between the two groups (cybervictims and non-victims), in terms of emotional loneliness, social loneliness, general loneliness and depressive mood. In addition, a hierarchical logistic regression was performed to explain the variance and predict cybervictimisation by the independent variables: gender, loneliness and depressive mood.

Results

Prevalence of cybervictimisation and gender differences

Table 1 presents descriptive statistics regarding cybervictimisation: the prevalence of cybervictimisation, traditional victimisation and of knowing someone who was a victim, and a breakdown by gender. Altogether, 40 participants reported that they have been cybervictims; of these, none reported it ‘often’, but seven reported ‘sometimes’ and 33 as

Table 1. Prevalence and frequency of cybervictimisation compared to traditional victimisation.

	Cybervictimisation				Traditional victimisation				
	<i>n</i>	Frequency	% within gender	% within victims	<i>n</i>	Frequency	% within gender	% within victims	
Victim prevalence	Total	242	40	16.5	100	242	66	27.3	100
	Boys	113	14	12.4	35.0	112	30	26.8	45.5
	Girls	121	26	21.5	65.0	118	36	30.5	54.5
	χ^2		3.47*				0.39 <i>ns</i>		
Knows someone who was victim	Total	242	77	31.8	100	242	125	51.7	100
	Boys	114	28	24.6	36.4	116	57	46.3	49.1
	Girls	123	49	39.8	63.6	124	66	53.2	53.7
	χ^2		6.36**				0.40 <i>ns</i>		

Note: The distribution within gender includes only participants who reported their gender (*n* = 240) and answered each question. * *p* < 0.05, ** *p* < 0.01; ns: not significant.

'a few times'. More participants, 66, had been traditional victims. Of these, one reported it 'often', but 10 reported 'sometimes' and 55 as 'a few times'. Rather more participants reported that they knew someone who was a cybervictim (77) or a traditional victim (125). For both experiencing and knowing a victim, figures were lower for cybervictimisation than for traditional victimisation, but were still appreciable.

Regarding gender differences, two-thirds of the cybervictim samples were girls, a larger proportion than for traditional victims. A chi-squared test showed that significantly more girls than boys were cybervictims ($\chi^2 = 3.47$, $df = 1$, $p < 0.05$). A similar pattern, but not statistically significant ($\chi^2 = 0.39$, $df = 1$, p ns), was found for traditional victimisation. Similarly, a significantly higher rate of girls reported that they knew someone who was a cybervictim ($\chi^2 = 6.36$, $df = 1$, $p < 0.01$), whereas for knowing traditional victims this was not significant ($\chi^2 = 0.40$, $df = 1$, p ns). The types of cybervictimisation reported were also examined: verbal abuse constituted 11.2%, offensive ICQ 5.8%, offensive text messages 1.7%, rude and offensive emails 1.2%, and offensive pictures and video clips 0.8%.

Relationship between cybervictimisation, loneliness and depressive mood

A key aim was to examine the relationship between cybervictimisation and two socio-emotional factors: loneliness and depressive mood. A two-way MANOVA was run, by gender (boys, girls) and cybervictimisation (online victims and non-victims). The dependent variables were general loneliness (with two dimensions: emotional and social) and depressive mood. Table 2 shows significant differences in each variable between cybervictims ($n = 40$) and those who were not cybervictims ($n = 202$). Cybervictims reported significantly more general loneliness (and both emotional and social loneliness) than those who were not cybervictims; they also reported higher depressive mood levels. No significant differences were found by gender, nor interactions between gender, cybervictimisation, loneliness and depressive mood.

Table 3 shows corresponding analyses comparing traditional victims ($n = 66$) with those who were not traditional victims ($n = 176$). There is a similar pattern in traditional victimisation as for cybervictimisation, but not identical. Significant differences were found in general loneliness (and both emotional and social loneliness) between traditional victims and those who were not traditional victims, but not for depressive mood. No significant differences were found by gender, nor interactions between gender, traditional victimisation, loneliness and depressive mood.

Finally, a hierarchical logistic regression model was run to explain the variance and predict cybervictimisation. The question posed was to what extent can the independent variables of gender, general loneliness and depressive mood explain the variance in the dependent variable of cybervictimisation (victim/non-victim), and the unique contribution of each variable in the regression model? Because the same pattern of differences was found for general loneliness and the subscales of emotional and social loneliness, and these two forms of loneliness correlated highly ($r = 0.76$, $p < 0.01$), in the following analysis, we just used general loneliness in the hierarchical logistic regression. We put gender in at the first step and the two psychological variables at the second step in order to see the impact of psychological variables adjusted for the effect of gender. The results are presented in Table 4. The model was significant, and explains about 8% of the total variance in cybervictimisation. The most significant predicting variables were loneliness (first) followed by gender (second) and finally depressive mood.

Table 2. MANOVA of loneliness and depressive mood by cybervictimisation and gender.

Variable	Cybervictim			Not a cybervictim			F (df = 1,23)
	Total (n = 40)	Boys (n = 14)	Girls (n = 26)	Total (n = 202)	Boys (n = 103)	Girls (n = 99)	
General loneliness	30.45 (10.54)	33.50 (10.90)	28.81 (10.17)	26.66 (9.84)	26.44 (9.84)	26.89 (8.42)	26.97*
Emotional loneliness	17.9 (7.5)	19.57 (9.24)	17.00 (6.52)	15.76 (6.54)	15.76 (7.54)	15.76 (5.37)	14.29*
Social loneliness	12.55 (5.03)	13.93 (5.82)	11.81 (4.50)	10.90 (4.12)	10.68 (4.31)	11.13 (3.92)	26.41*
Depressive mood	1.74 (0.27)	1.73 (0.45)	1.79 (0.32)	1.36 (0.92)	1.32 (0.95)	1.38 (0.88)	9.67*

Note: Data are shown as mean (SD). *p < 0.05.

Table 3. MANOVA of loneliness and depressive mood by traditional victimisation and gender.

Variable	Traditional victim			Not a traditional victim			F (df = 1,224)
	Total (n = 66)	Boys (n = 30)	Girls (n = 36)	Total (n = 176)	Boys (n = 89)	Girls (n = 87)	
General loneliness	29.88 (10.00)	30.03 (10.27)	27.95 (9.92)	26.42 (9.20)	26.41 (10.04)	26.40 (8.34)	6.21*
Emotional loneliness	17.61 (6.48)	17.90 (6.83)	17.36 (6.26)	16.65 (6.89)	15.75 (8.10)	15.55 (5.46)	3.95*
Social loneliness	12.27 (4.51)	12.13 (4.54)	12.39 (4.57)	10.78 (4.17)	10.67 (4.58)	10.89 (3.74)	5.55*
Depressive mood	1.78 (0.25)	1.79 (0.19)	1.83 (0.23)	1.64 (0.41)	1.63 (0.94)	1.67 (0.31)	25.69 ns

Note: Data are shown as mean (SD). *p < 0.05; ns: not significant.

Table 4. Hierarchical logistic regression analysis explaining the variance of cybervictimisation.

	<i>B</i>	<i>SE</i>	Wald (df = 1)	Exp(<i>B</i>)
Gender	0.66	0.36	3.28	1.96*
Loneliness (general)	0.030	0.010	3.61	1.03**
Depressive mood	-0.20	0.20	0.95	0.82*

* $p < 0.05$, ** $p < 0.01$.

Discussion

The current study presents results regarding the prevalence of cybervictimisation in Israeli adolescents, but mainly focuses on the associations of cybervictimisation with loneliness and depressive mood. Altogether, 16.5% of participants reported that they had been cybervictims (at least a few times) and 31.8% reported that they knew someone who was a cybervictim. It seems that the scope of the phenomenon in Israel is similar to that in other countries, as referred to in the Introduction. The results suggest that more teenagers suffer traditional victimisation (27.3%) than cybervictimisation (16.5%); however, a significant proportion of teenagers are cybervictims. Other studies have also indicated lower rates of cybervictimisation compared to traditional victimisation (Smith et al. 2008; Ybarra 2004). One explanation could be that in cyberbullying, the perpetrator's strength stems mostly from an ability to handle and control electronic media (Patchin and Hinduja 2006), and occurs only in digital media, whereas traditional bullying occurs everywhere and includes all means. Future longitudinal research is needed to follow this direction along time, as well as studying the overlap of these two kinds of victimisation.

As for gender differences, more girls than boys were cybervictims, similar to the pattern of traditional bullying. These findings correspond to those of Agatston, Kowalski, and Limber (2007); however, the literature is not unequivocal on this issue. There are studies stating that girls are more likely to be victims on the net (Smith et al. 2008; Li 2006), while other studies (Hinduja and Patchin 2008) show that in cyberbullying, more boys are victims compared to girls and compared to traditional bullying. Agatston, Kowalski, and Limber (2007) interviewed middle-school and high-school students in a focus group format and found that girls, more than boys, viewed cyberbullying as a serious problem. The fact that girls view cyberbullying as more serious may influence their answers and may explain the higher rates of girls reporting cybervictimisation. We recommend that future studies investigate boys and girls separately to broaden the understanding of the role of gender in cybervictimisation.

The main goal of this study was to study the relationship between adolescent cybervictimisation and socio-emotional variables. As expected, an association between cybervictimisation, loneliness and depressive mood was found. Depressive mood and more loneliness were found to be associated with cybervictimisation, as compared with non-victimisation. Adolescents who were cybervictims expressed a higher sense of loneliness and higher feelings of depressive mood than those who were not cybervictims. Findings indicate that this is true for both dimensions of loneliness: the emotional facet – the feelings of loneliness as a result of a lack of intimate friend; and also the social facet – the distress feelings of loneliness experienced as a result of the lack of a wider social network, when youngsters feel that they do not belong to any community, or that they do not have friends or allies that they can rely on.

A logistic hierarchical regression analysis found that loneliness, gender and depressive mood may explain the variance and predict cybervictimisation in adolescents. The results of the study are consistent with previous studies that suggest that cybervictimisation may be associated with depression symptoms and depressive mood aside from other socio-emotional difficulties (Patchin and Hinduja 2006; Ybarra 2004; Ybarra and Mitchell 2004). These findings may be explained in one of two ways. The first is that adolescents with a more intense sense of loneliness (emotional as well as social) and depressive mood may have difficulties in developing useful social networks, have limited social experiences and seek more for social connections on the Internet, and may become more vulnerable to cybervictimisation. The second is that low peer acceptance may be an indication of limited social skills, resulting in the lack of friends, which then adversely affects and intensifies students' sense of loneliness.

The study raises the question of cause and effect in the relationship between cybervictimisation, loneliness and depressive mood. The social isolation and depressive mood may be the reasons for increased Internet use. It is possible that it is particularly the depressive mood and solitude that lead teenagers to look for anonymous relationships on the Internet, which then may trigger the vulnerability to cybervictimisation. Adolescents who are cybervictims experience increased solitude and depression and suffer from low self-esteem, loneliness and depression (Van den Eijnden et al. 2006), which in turn create a vicious circle. A similar question is raised by Ybarra (2004) regarding the link between depressive symptomatology and Internet harassment. Ybarra suggests that future studies should focus on establishing the temporality of events, 'that is, whether depressive symptoms confer risks for later negative online incidents or whether young people report depressive symptoms in response to the negative internet experiences' (Ybarra 2004, 247).

Longitudinal research is required to examine cause and effect issues. In addition, the possibility that a mutually underlying factor is confounding the relationship between cybervictimisation and depressive mood, such as lack of social support or lower social skills, should be considered. Moreover, in order to gain a better understanding of these associations between cybervictimisation, loneliness and depressive mood, we propose that further research should examine a mediation model that will consider Internet use as a mediating variable in the relationship between loneliness/depressive mood and cybervictimisation, and also other variables such as lack of social support (peers, family) and low self-esteem.

Since many studies report a high positive correlation between cybervictimisation and traditional victimisation (Ybarra and Mitchell 2004; Vandebosch and Van Cleemput 2009), we compared the associations with traditional victimisation and found a similar pattern with a slight difference for depressive mood. While research regarding traditional victimisation indicates strong associations with socio-emotional maladjustment, it was not known whether a similar association is also applicable to cybervictimisation. The present study has shown association between cybervictimisation and two specific socio-emotional difficulties: loneliness and depressive mood. Further research is needed to enlarge the scope of associations of cybervictimisation with other variables that manifest socio-emotional maladjustment and give a more complete picture regarding the uniqueness and distinctiveness of cybervictimisation. It should be noted that the research literature has yet to come to a definitive answer to the question as to whether cyberbullying is 'old wine in a new bottle' or an entirely new phenomenon (Li 2007).

Some limitations of this study should be noted. Regarding prevalence rates, it should be borne in mind that the sample was not very large. The measures used were self-reported, and some of the observed relationships may be accounted for by common method variance.

Adding external information sources that are not based only on self-reporting to the data could validate the results. Further research should draw on more external measures to further our understanding of the links of cybervictimisation to socio-emotional aspects. Although the data support the hypothesised relationship between loneliness, depressive mood and cybervictimisation, this relationship should be explored on a broader spectrum, taking into account more emotional and social variables and examining the relative contribution of diverse socio-emotional variables, preferably in a large-sample longitudinal study, in order to gain a deeper understanding of the sources of cyberbullying in adolescents.

In summary, the present study contributes to the field of cyberbullying research and practice in detecting two socio-emotional variables that are associated with cybervictimisation and, more speculatively, have a causal role. Detecting these variables is of great importance when planning and conducting programmes for cyberbullying prevention and intervention. The results suggest that such programmes for adolescents should focus on strengthening social networks, social skills and peer support, in order to prevent a sense of loneliness and depressive mood, and to help build a 'social protection layer' against becoming cybervictims. Programmes of this kind should focus on developing adolescents' ability to establish close, intimate relationships, and promote abilities to gain one or two good friends, in order to diminish the frustration and dissatisfaction of being lonely and becoming more vulnerable to cyberbullying. Since loneliness, in both dimensions (social and emotional) was found to be significantly associated with cybervictimisation, it is important to ensure that such programmes address the need to develop both the ability for social integration and the ability to generate close relationships and psychological intimacy.

References

- Agatston, P.W., R. Kowalski, and S. Limber. 2007. Students' perspectives of cyberbullying. Brief report. *Journal of Adolescent Health* 41: 59–60.
- Asher, S.R., J.T. Parkhurst, S. Hymel, and G.A. Williams. 1990. Peer rejection and loneliness in childhood. In *Peer rejection in childhood*, ed. S.R. Asher and J.D. Coie, 253–73. New York: Cambridge University Press.
- Brighi, A., G. Melotti, A. Guarini, M.L. Genta, R. Ortega, J. Mora-Merchan, P.K. Smith, and F. Thompson. 2012. Self esteem and loneliness in relation to cyberbullying in three European countries. In *Cyberbullying in the global playground: Research from international perspectives*, ed. Q. Li, D. Cross and P. K. Smith, 32–56. Chichester: Wiley-Blackwell.
- Cacioppo, J.T., and B. Patrick. 2008. *Loneliness: Human nature and the need for social connection*. New York: W.W. Norton & Co.
- Clinton, M., and L. Anderson. 1999. Social and emotional loneliness: Gender differences and relationships with self-monitoring and perceived control. *Journal of Black Psychology* 25: 61–77.
- Cyberbullying Research Center – USA. 2010. http://webcache.googleusercontent.com/search?client=gmail&rls=gm&hl=iw&q=cache:_x2D35DhB_4J:http://www.cyberbullying.us/research.php+cyberbullying+in+USA+percentage&ct=clnk (accessed August 31, 2011).
- CyberTraining – A research-based training manual on cyberbullying. 2008. Project 142237-LLP-1-2008-1-DE-LEONARDO-LMP. <http://www.adam-europe.eu/adam/project/view.htm?prj=4306> (accessed August 31, 2011).
- Didden, R., R. Scholte, H. Korzilius, M.H. Jan, A. Vermeulen, M. O'Reilly, R. Lang, and G.E. Lancioni. 2009. Cyberbullying among students with intellectual and developmental disability in special education settings. *Developmental Neurorehabilitation* 12: 146–51.
- Druck, K., and M. Kaplowitz. 2005. Setting up a no-bully zone. *Virginia Journal of Education* 98: 11–13.
- Hinduja, S., and J.W. Patchin. 2008. Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior* 29: 129–56.

- Hodges, E., M.J. Malone, and D.G. Perry. 1999. Individual risk and social risk as interacting determinant of victimization in the peer group. *Developmental Psychology* 33: 1032–9.
- Kazdin, A.E., and P.L. Marciano. 1998. Childhood and adolescent depression. In *Treatment of childhood disorders*. 2nd ed., ed. R.A. Barkley and E. J. Mash, 211–48. New York: Guilford Press.
- Knesset–Israeli Parliament. 2011. *Children in social nets on the internet* (written by E. Weisbali). The Knesset, Center for Research and Information. (In Hebrew.)
- Kovacs, M., and A. Beck. 1977. An empirical clinical approach toward a definition of childhood depression. In *Depression in childhood: Diagnosis, treatment and conceptual models*, ed. J. Schlterbrant and A. Raskin, 1–25. New York: Raven Press.
- Kowalski, R.M., and S.P. Limber. 2007. Electronic bullying among middle school students. *Journal of Adolescent Health* 41: 22–30.
- Levine, M., and S. Crowther. 2008. The responsive bystander: How social group membership and group size can encourage as well as inhibit bystander intervention. *Journal of Personality and Social Psychology* 95: 1429–39.
- Li, Q. 2006. Cyberbullying in schools: A research of gender differences. *Schools Psychology International* 27: 157–70.
- Li, Q. 2007. Bullying in the new playground: Research into cyberbullying and cyber victimization. *Australasian Journal of Educational Technology* 23: 435–54.
- McGilvray, A. 2009. *Cyberbullying: A challenge in the digital age*. ABC Health News, ABC Health & Wellbeing. <http://www.abc.net.au/health/thepulse/stories/2009/09/17/2679508.htm>
- Mesch, G.S. 2009. Parental mediation, online activities, and cyberbullying. *CyberPsychology & Behavior* 12: 387–93.
- Mishna, F., M. Khoury-Kassabri, T. Gadalla, and J. Daciuk. 2012. Risk factors for involvement in cyber bullying: Victims, bullies and bully–victims. *Children and Youth Services Review* 34: 63–70.
- Mitchell, K.J., M. Ybarra, and D. Finkelhor. 2007. The relative importance of online victimization in understanding depression, delinquency and substance use. *Child Maltreatment* 12: 314–24.
- NIH. 2010. *Depression high among youth victims of school cyber bullying*. NIH researchers' report. Washington, DC: National Institutes of Health, US Department of Health and Human Services.
- Nurmi, J., and K. Salmela-Aro. 1997. Social strategies and loneliness: A prospective study. *Personal and Individual Differences* 23: 205–15.
- Patchin, J.W., and S. Hinduja. 2006. Bullies move beyond the schoolyard. A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice* 4: 148–69.
- Peplau, L.A., and D. Perlman. 1982. Perspectives on loneliness. In *Loneliness: A sourcebook of current theory, research and therapy*, ed. L.A. Peplau and D. Perlman, 1–18. New York: Wiley.
- Peter, J., P. Valkenburg, and A. Schouten. 2005. Developing a model of adolescent friendship formation on the internet. *Cyber Psychology & Behavior* 8: 423–30.
- Price, M., and J. Dalgleish. 2010. Cyberbullying experiences, impacts and coping strategies as describes by Australian young people. *Youth Studies Australia*, 29, no. 2: 51–9.
- Rappoport, L. 1972. *Personality development: The chronology of experience*. Glenview, IL: Scott & Foresman.
- Russell, J.A. 2003. Core affect and the psychological instruction of emotion. *Psychological Review* 110: 145–72.
- Sahin, M. 2012. The relationship between cyberbullying/cybervictimization and loneliness. *Children and Youth Services Review* 34: 834–7.
- Slonje, R., P.K. Smith, and A. Frisén. 2012. Processes of cyberbullying, and feelings of remorse by bullies: A pilot study. *European Journal of Developmental Psychology* 9: 244–59.
- Smith, P.K., J. Mahdavi, M. Carvalho, S. Fisher, S. Russell, and N. Tippett. 2008. Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry* 49: 376–85.
- Steffgen, G., A. Kowing, J. Pfetsch, and A. Melzer. 2011. Are cyberbullies less empathic? Adolescents' cyberbullying behavior and empathic responsiveness. *Cyberpsychology, Behavior, and Social Networking* 14: 643–48.
- Steinberg, L., and A. Morris. 2001. Adolescent development. *Annual Review of Psychology* 52: 111–39.

- Tarabulus, T., T. Heiman, and D. Olenik Shemesh. 2011. *Cyber-bullying vs. face to face bullying among adolescents*. Research Center for Innovation in Learning Technologies Proceedings, Open University of Israel, 287.
- Terry, P., A. Lane, and G. Fogarty. 2003. Construct validity of the Profile of Mood States–A for use with adults. *Psychology of Sport and Exercise* 4: 125–39.
- Tokunaga, R.S. 2010. Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior* 26: 277–87.
- Van den Eijnden, E.R., A. Vermulst, T. Van Rooy, and G. Meerkkerk. 2006. *Bullying on internet and psychosocial well-being of youth*. Rotterdam: IVO.
- Vandebosch, H., and K. Van Cleemput. 2009. Cyberbullying among youngsters: Profiles of bullies and victims. *New Media & Society* 11: 1349–71.
- Wang, J., R.J. Iannotti, and T.R. Nansel. 2009. School bullying among adolescents in the United States: Physical, verbal, relational and cyber. *Journal of Adolescent Health* 45: 368–75.
- Weiss, R.S. 1973. *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.
- Weiss, R.S. 1989. Reflections on the present state of loneliness research. In *Loneliness: Theory, research, and applications*, ed. M. Hojat and R. Crandall, 1–16. Newbury Park, CA: Sage.
- Ybarra, M.L. 2004. Linkage between depressive symptomatology and Internet harassment among young regular Internet users. *Cyberpsychology and Behavior* 7: 247–57.
- Ybarra, M.L., and K.J. Mitchell. 2004. Youth engaging in online harassment: Associations with caregiver–child relationships, Internet use, and personal characteristics. *Journal of Adolescence* 27: 319–36.
- Ybarra, M.L., K.J. Mitchell, J. Wolak, and D. Finkelhor. 2006. Examining characteristics and associated distress related to Internet harassment: Findings from second youth Internet safety survey. *Pediatrics* 118: 1169–77.

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