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Research Article

Emotion-Focused Coping Worsens Depressive Feelings and Health Complaints in Cyberbullied Children

T. Völlink, C. A. W. Bolman, A. Eppingbroek, and F. Dehue

Department of Psychology, Open University of the Netherlands, Valkenburgerweg 177, 6419 AT Heerlen, The Netherlands

Correspondence should be addressed to T. Völlink; trijntje.vollink@ou.nl

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Coping may explain why being cyberbullied affects children's well-being differently, though previous studies are inconclusive. This survey among 325 children focused on the role coping strategies may play in the relationship between cyberbullying and depressive feelings and health complaints. Being cyberbullied was measured with the Cyberbullying Questionnaire, general coping with the Utrecht Coping List, and cyberbullying-specific coping with a questionnaire developed for this study. Health complaints were measured with the Short Questionnaire for Experienced Health and depressive feelings with the shortened Children's Depression Inventory. The results showed that 18.8% of the children were bullied by mobile phone and 24.1% through the internet. Correlation analyses showed strong relationships between victimization, coping, depressive feelings, and health complaints. In the regression analyses conducted in all children, victimization, general emotion-focused, and problem-focused copings had main effects on depressive feelings and health complaints; emotion-focused coping interacted with victimization in health complaints. Simple slope analyses of children with high scores on emotion-focused general coping showed a stronger positive relationship between victimization and health complaints. Regression analyses of only cyberbullied children showed that only emotion-focused cyber-specific coping was associated with more health complaints and depressive feelings.

1. Introduction

Most children and adolescents make use of the internet and mobile phone. For example, 90% of European youth [1] and 93% of the youth in the US are online [2]. Although the internet and mobile phones provide numerous benefits to youngsters, they also have disadvantages such as Cyberbullying [3, 4]. The definition of Smith et al. (2008) is mostly used to describe the features of Cyberbullying: "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/herself" [5]. This definition is based on the definition for traditional bullying [6]. However, the aspects of repetition and power imbalance are under debate among Cyberbullying researchers [7]. A child does not need to be approached several times to be labelled as bullied, because one threatening message or a single humiliating picture is often online for a long time, accessible to a large group and can be easily forwarded by others [7–10]. However, a child that has been insulted once in a chatroom or by mail may not have the feeling to be cyberbullied. Therefore, in this study, we choose to maintain the aspect of repeating incidence over time. Further, the difference in power of the bully and the victim concerning Cyberbullying is not always about physical power. The power imbalance that is mentioned as one of the features of traditional bullying will not disappear if the same perpetrator is continuing bullying online. If, however, a victim is bullied solely online then the power imbalance that might exist between a victim and a perpetrator is about the power gained by knowledge of computers and the internet [8, 11].

However, Slonje and colleagues (2013) point out that there are many easy ways to cyberbully (like for instance sending offending text, photo's, or video clips by smart phone) that does not take more technological expertise from the bully [7].

There are other differences between traditional bullying and Cyberbullying that is not captured in the definition for Cyberbullying. Specific to Cyberbullying is that there is often no face-to-face contact and that it can happen anonymously

[9, 10, 12–14]. This implies that there is often lack of supervision of the bully, which may worsen the bullying [10]. As a consequence the impact of bullying cannot be seen and the victim can easily misinterpret messages. Not knowing who the bully is may leave a child wondering if each person they meet could be the perpetrator [15]. Traditional bullying often takes place among peers from the same school or same school class. In line with traditional bullying, Cyberbullying also often concerns online bullying among peers. However, online communication (through social media, online games, you tube, etc.) makes attacking people outside your peer group (like for instance celebrities, teachers, or totally unknown individuals) very easy and is also a phenomenon that more often occurs [16]. The latter refers to the more broader concept of online aggression that, however, is beyond the scope of this paper.

Finally, Cyberbullying has found its way into the private environment of children, so even at home children are not safe from their teasing peers.

Many studies have shown that Cyberbullying is a prevalent problem among children and adolescents. Among this group 11% to 26% bullied and 10% to 58% had been bullied through the internet [8, 12, 17–21]. Research furthermore revealed that the children and adolescents who were traditionally bullied also more often became a victim of Cyberbullying [4, 5, 19, 22]. Sticca et al. (2013) [23] found that global self-esteem and emphatic concern were not significantly related to repeated Cyberbullying behaviour over and above traditional bullying, rule-breaking behaviour, and frequency of online communication.

Cyberbullying often results in health complaints and poor well-being [13, 19, 24, 25]. For example, the study from Ybarra and Mitchell (2004) showed that children who have been cyberbullied have symptoms of depression three times as often as nonvictims [13]. Cyberbullying also often results in learning difficulties and hostile behaviour [9, 17, 21]. A study of Perren and colleagues revealed that victims of Cyberbullying have higher levels of depressive symptoms than bullies and noninvolved children, even when victimization of traditional bullying is controlled for [22].

Other studies found that especially the combination of online and offline bullying is most painful: van den Eijnden and colleagues (2008) showed that adolescents who have been cyberbullied and traditionally bullied experience the most mental and social problems compared with adolescents who have only been bullied in one way [26]. These findings were more thoroughly explored in a qualitative study among 16 cyber-bully victims by Sevcikova et al. (2012). Victims explained that perpetration that took place in the online environment and was transferred offline or interfered with their offline relationships was perceived as most painful [27].

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Although it is clear that being cyberbullied affects the (mental) health of children and adolescents, its impact may depend on their ability to react adequately. The importance of coping in the relationship between victimization and health is derived from research in traditional bullying. The study of Cassidy and Taylor (2005) [28] showed that the stress and coping theory (Lazarus and Folkman, 1984) [29] provides a good framework for explaining the effects of victimization of traditional bullying on health and well-being. According to their study, victimization in terms of bullying was associated with less use of a problem-solving coping style and subsequently with more psychological distress. Because of the similarities between traditional and Cyberbullying, the theory is expected to be useful for explaining the health-related effects of Cyberbullying. Lazarus and Folkman define coping as "constantly changing cognitive and behavioural efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person" (1984, page 141). They consider it to be a two-dimensional construct, one of emotion-focused coping and one of problem-focused coping. In emotion-focused coping, one attempts to control one's emotional response to a stressful situation, for example, redefining the situation by focusing on its positive aspects. In problem-focused coping, one attempts to handle the stressful situation by tackling the problem that causes the stressful situation. An example of a problem-focused approach is when one seeks out others with whom one discusses how to cope with the problem (social support). The theory assumes that people who use problem-focused coping strategies adapt better to stressful situations than people using passive, emotion-focused coping strategies [30]. People tend to use emotional-focused coping when they believe that they can do little to change the stressful situation and problem-focused coping when they believe their resources or the demands of the situation are changeable [29].

Coping strategies that are recommended by victims of Cyberbullying in the study of Smith and colleagues (2008) are blocking or avoiding Cyberbullying messages (avoidance coping) and telling someone about the bullying (problem-based coping) [5]. Although the latter was recommended by the victims, they did not apply it themselves [5]. Unfortunately, these researchers only described but did not study the effects of different coping strategies on (mental) health.

Smith and colleagues (2001) concluded in their literature overview that seeking social support is an effective coping strategy to stop Cyberbullying [31]. This conclusion was confirmed in a longitudinal study by Ybarra et al. (2007) [21]. They found that support seeking from peers and family had a buffering effect on the relation between cybervictimization at $t1$ and depressive symptoms at $t2$.

Kochenderfer-Ladd and Skinner (2002) found that emotional ways of coping like crying or acting out of anger, shame, fear, or being upset worsen victimization [32]. Lodge and Frydenberg (2007) [33] and Völlink et al. (2013) [34]

studied how coping influenced the relationship between Cyberbullying and health. Lodge and Frydenberg found poor well-being in cyberbullied girls (11–17 year olds) who use an apprehensive (i.e., excessive worry, tension reduction, and self-blame) and avoidant style of coping (i.e., ignoring, keeping it from others, and not seeking help).

Völlink et al. found that coping through coping behaviour that a child is used to perform in general in stress situations, especially emotional expression, avoidance and depressive coping like self blaming will lead to more cyber-specific depressive coping when confronted with Cyberbullying [34]. This in turn will lead to more depressive feelings and health complaints.

Other studies of victimized children who use problem-focused strategies like advice seeking, seeking social support, and problem solving showed lower risk of loneliness and depression [28, 31, 35–37]. Those studies report that victims of bullying who use problem-focused coping strategies that tackle the stressor directly, for example, trying to do things in a different way so that the bullying will not happen again, experience fewer health complaints than those who use coping strategies aiming at avoiding the stressor, like trying to forget about what happened or acting as if the bullying never happened.

Another study revealed that cyberbullied children tend to use the same coping strategies as traditionally bullied ones [38]. That study, however, did not assess the impact of coping on the relationship between bullying and (mental) health. To our knowledge, so far only Lodge and Frydenberg (2007) [33], Völlink et al. (2013) [34], and Machmutow et al. (2012) [37] studied how coping influenced the relationship between Cyberbullying and health. In the study of Völlink et al., it was found that general avoidance coping and coping through emotional expression to deal with stressors in daily life lead to more cyber-specific depressive coping when confronted with Cyberbullying which in turn results in more depressive feelings and health complaints.

Based on these findings, it was expected that victims of Cyberbullying would report more depressive feelings and health complaints (H.1) compared to noninvolved children. It was also hypothesized that victimization results in more depressive feelings and health complaints when children use few problem-based coping strategies (H.2) and many emotion-based coping strategies (H.3). In an additional exploratory research question, the relative importance of general and cyber-specific coping strategies in affecting victimized children's health complaints and depression was studied. Duration of Cyberbullying and gender were included in the study as covariates. Duration was relevant because the definition of Cyberbullying includes the fact that the bullying is repeated and takes place over time [5]. Gender was taken into account because previous research reported that bullied girls more frequently complain of depression than boys [39, 40].

2. Method

2.1. Design, Participants, and Procedure. We conducted a cross-sectional mail-out survey among 325 year 7 students from three state schools in a city in the south of England. All children filled in the questionnaire plenary in the classroom after instructions of their teacher. For this reason the response rate was 100%. One hundred and sixty-three children (50.2%) were 11 years old and 162 children (49.8%) were 12 years old. Slightly more girls (53%) than boys (47.7%) were included.

The school board or school management of all the secondary state schools in a city in the south of England (n = 21) received a letter in which they were asked to participate in the study. The letter included a short description of the research, its aim, and its importance. After a week, all the schools were invited by phone to participate. The most usual reason for not participating was that the school was already participating in other research projects and were therefore too busy. The schools who were willing to cooperate (15%) received the questionnaires, including instructions for the children and the teachers (i.e., how to supervise the completion of the questionnaires in the classroom). Teachers were asked to handle the situation discreetly because children can be very upset by Cyberbullying. Children were reminded by the teachers that they could fill out the questionnaire anonymously, that their participation was voluntary, and that there were no wrong answers. The study was approved by the Ethical Committee of the Faculty of Psychology of the Open University of the Netherlands.

2.2. Measurements. The scales that were used and their reliability are shown in Table 1 (Cronbach's alpha ranged between 59–85). In addition, age and gender were assessed. The existing questionnaires or scales that were used were translated from their original language into English. The questionnaire was subsequently pretested in 17 children of the target group (these children were excluded from the final study). They were asked to evaluate its clarity, completeness and correctness.

Victimization of Cyberbullying. The direct measurement of victimization of Cyberbullying was measured by the direct two-item measurement scale of the Cyberbullying Questionnaire [41]. Items were "Have you been cyberbullied through text messages in the past couple of months? (receiving nasty SMS, pictures, video clips or calls on your mobile phone)" and "Have you been cyberbullied through the internet in the past couple of months? (receiving abusive emails, bullied through websites, in chat rooms, or on Messenger services like MSN)." The items were scored by four answering options: have not (been) cyberbullied (1); only once or twice (2); several times (3); very often (4). The sum scale was formed by adding up the answers. A higher score meant the Cyberbullying was more present. Duration of Cyberbullying was also measured because Smith's definition of Cyberbullying is an act that repeated over time. The question was formulated as "How long has the bullying lasted" (answering options: one or two weeks (1); about a month (2); six months (3); a year or longer (4). This question could be skipped when the child was not cyberbullied.

2.2.1. Coping Strategies. Two types of coping strategies were assessed: coping strategies that children use in general and coping strategies that children use when being cyberbullied.

Table 1: Scales and their Cronbach's alpha.

Scale	Total items, range	α	M	SD
Victim of cyberbullying	(2, 2–8)	.68	2.6	1.2
Problem-focused general coping	(13, 13–52)	.79	26.3	6.5
Emotion-focused general coping	(31, 31–124)	.80	63.3	11.0
Problem-focused cyberspecific coping	(5, 5–20)	.59	9.8	3.1
Emotion-focused cyberspecific coping	(19, 19–76)	.85	39.2	10.6
Depressive feelings	(10, 0–20)	.82	5.6	3.9
Health complaints	(18, 0–18)	.85	6.5	4.3

The general coping strategies were measured by (the English version of) the validated Utrecht Coping List for Adolescents (UCL-A) [42], which is based on the validated UCL for adults [43]. The UCL-A measures the dimensions of problem-based coping and emotion-based coping with 47 items. Children are asked to indicate how they generally react to problem situations. For each of the 47 reaction strategies, they need to indicate how often they perform that strategy in a problem situation. An example of an item is "Try to stay calm." All items were scored on a four-point scale with the following answer categories: rarely or never (1), sometimes (2), often (3), and very often (4). This test is often used with good reliability and validity [44]. The sum scale of problem-focused general coping was composed by adding up the items about confronting coping, and social support coping. The sum scale of emotion-focused general coping was composed by adding the items about palliative coping, avoidance coping, optimistic coping and expressive emotion coping. Higher scores on these subscales demonstrated greater use of this type of coping. In accordance with the instruction manual [42], three items were not included in one of the two sum scales. They were extra and left out of the analyses.

To measure cyber-specific coping, a questionnaire measuring the dimensions of problem-based coping and emotion-based coping was developed for this study. In line with the UCL-A, the questionnaire included reaction strategy items on confronting coping, social support coping, palliative coping, avoidance coping, optimistic coping. and expressive emotions coping. The items were, however, specifically formulated for Cyberbullying situations. Prior to the study, the items were judged by two experts in the area of Cyberbullying and by the youngsters who took part in the pretest ($n = 17$). For each of the 24 reaction strategies, respondents needed to indicate how often they perform that strategy when they are a victim of Cyberbullying. One item for example is "I pretend that the bullying did not happen." In line with the UCL-A, the items were scored on the four-point scale with the following answer categories: rarely or never (1), sometimes (2), often (3), and very often (4). The sum scales for emotion-focused Cyberbullying coping and problem-focused Cyberbullying coping were formed in line with the UCL-A categorization which we verified by a principal component analysis. The emotion-focused cyber-specific coping scale consisted of 19 items; the problem-focused cyber-specific coping scale was formed by adding up four items. That scale initially consisted of five items, though one item (i.e., "Fighting back on the internet or mobile phone") was left out to increase the Cronbach's alpha. In both scales, a higher score indicated greater use of the coping strategy.

2.2.2. Health Complaints. The scale health complaints were measured with the English version of the short Questionnaire on Experienced Health Complaints [45], a checklist for the presence of physical or psychological health complaints. In this checklist, respondents were asked to indicate for each presented complaint whether or not they had suffered from it in the previous couple of months. The VOEG originally consisted of 21 dichotomous items, but because of the young age of the children, the question on tightness of the chest was left out, as were two of the three similar questions on stomach upsets (only one of these three questions was listed in our questionnaire). The remaining 18 items added up to total list of health complaints, and a higher score indicated more health complaints.

2.2.3. Depression. Depression was assessed by using the 10-item short version of the Children's Depression Inventory [46]. An example of an item is "I am sometimes sad; I am often sad; I am always sad." The scoring format of the CDI is absence of symptoms (0), mild symptoms (1), or clear symptoms (2). A higher score meant greater suffering from depressive symptoms.

2.3. Statistical Analyses. Chi-square analyses and ANOVA analyses were used to determine if there were any significant gender differences in victimization of Cyberbullying and, respectively, depressive feelings and health complaints.

To examine the hypotheses, four hierarchical multiple regression analyses (MRA) were performed. For each of the dependent variables (i.e., depressive feelings, health complaints) we conducted two MRAs: one among the total sample ($n = 243$ for depressive feelings; $n = 255$ for health complaints) (H.1) and one only in children who were victims of Cyberbullying ($n = 67$ for depressive feelings; $n = 69$ for health complaints). Independent variables in all MRAs were gender, victimization, coping, and duration of Cyberbullying (all standardized scores because of the interaction terms that were included). Four coping scales were considered: general problem-focused coping, general emotion-focused coping,

Table 2: Frequency (in %) of being bullied compared to gender and age.

Way of bullying or being bullied	Total	♂	♀	11 years	12 years
Being bullied by mobile phone	18.8	12.3	24.7**	16.6	21.0
Being bullied on the internet	24.1	11.7	35.3**	19.1	29.0*

Note: chi-square analyses. *$P < .05$, **$P < .01$.

Table 3: Pearson correlations of the central variables ($n = 325$).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Victim of cyberbullying		−.03	.07	−.06	.23*	.46**	.34**	.28**	.54**
(2) Problem-focused general coping			.44**	.74**	.14	−.18**	−.04	.08	.03
(3) Emotion-focused general coping				.33**	.49**	.17*	.23**	.12*	−.00
(4) Problem-focused cyberspecific coping[1]					.25*	−.13	−.08	.04	−.01
(5) Emotion-focused cyberspecific coping[1]						.59**	.58**	.16	.15
(6) Depressive feelings							.59**	.11	.33**
(7) Health complaints								.12*	.21*
(8) Gender[2]									.01
(9) Duration of cyberbullying[3]									

Note. [1]Less children were involved in the correlations of problem-focused and emotion-focused cyber-specific copings because only children who actually got cyber-bullied filled out a score on these variables. [2]Gender: 1 = boy; 2 = girl. [3]Duration of the cyberbullying: 1 = 1-2 weeks; 2 = about a month; 3 = about six months; 4 = about a year or longer. **$P < .01$, *$P < .05$ (2-tailed).

Cyberbullying-related problem-focused coping, and Cyberbullying emotion-focused coping. To test (H.2) and (H.3) interaction terms were calculated (four interaction terms, the products of general problem-focused coping ∗ victimization, general emotion-focused coping ∗ victimization, Cyberbullying related problem-focused coping ∗ victimization, and Cyberbullying emotion-focused coping ∗ victimization). The regression models were built in step one by entering the main effect "victimization" into the model, in step 2 by entering "coping" in the model, in step 3 by adding "gender", and in step 4 by adding the interaction terms described previuosly.

3. Results

3.1. Prevalence of Being Cyberbullied. Table 2 shows that almost a quarter of the children were bullied by means of the internet and a little less by mobile phone. Most of the children in the bullied group (58.5%) were bullied for only a few weeks, 22.3% had been cyberbullied for a month, a minority (7.4%) stated that the Cyberbullying lasted six months, and for 11.7% of the children, the Cyberbullying had already lasted at least a year (not in table). About two-thirds of the children stated that they were upset by the Cyberbullying. Of this number, 32.6% were a little upset, 29.8% were quite upset, and 9.8% were very upset. Comparing the total numbers of, respectively, girls and boys, girls were significantly more frequently a victim of Cyberbullying than boys. Girls also cyberbullied significantly more than boys. Table 2 also shows that 12 year olds were cyberbullied on the internet significantly more often.

3.2. Correlations between the Main Variables of the Study. In Table 3, the Pearson correlations between the main variables are presented. It shows that being a victim of Cyberbullying correlated significantly and positively with emotion-focused cyber-specific coping, depression, health complaints, gender and duration of the Cyberbullying. Problem-focused general coping correlated positively with emotion-focused general coping and problem-focused cyber-specific coping. It correlated negatively with depression, which means that a high score on problem-focused general coping relates to fewer depressive complaints. Emotion-focused general coping correlated positively with all the coping scales, depression, health complaints, and gender. Also, emotion-focused cyber-specific coping correlated positively with depression and health complaints, which means that a high score on both ways of emotion-focused coping relates to more negative health outcomes. Problem-focused cyber-specific coping did not correlate with depression and health complaints, however. It was only positively correlated with emotion-focused cyber-specific coping. Depression correlated positively with health complaints and both correlated positively with the duration of the Cyberbullying, which means that the duration of Cyberbullying is related to more depression and health complaints.

3.3. Effects of Victimization and Coping on Health in the Total Sample. In the first regression analyses, we determined the extent to which victimization explained the health complaints and depressive feelings in the total sample (H.1) and whether general problem-focused coping (H.2) and/or general emotion-focused coping strategies (H.3) moderated this relationship. Hierarchical regression analyses were carried out separately for health complaints and depressive feelings, respectively. Duration of Cyberbullying and cyber-specific coping were not included in the analyses, because the

Table 4: Summary of the hierarchical regression analyses of general coping strategies on depressive feelings ($N = 243$) and health complaints ($N = 255$).

Predicting variables	Depression[1]			Health complaints		
	B	SE B	β	B	SE B	β
Step 1						
Victim of cyberbullying	.42	.06	$.43^{***}$	.33	.06	$.33^{***}$
Step 2						
Victim of cyberbullying	.37	.06	$.38^{***}$	.29	.06	$.29^{***}$
Problem-focused general coping	−.29	.06	$-.30^{***}$	−.18	.06	$-.18^{**}$
Emotion-focused general coping	.28	.06	$.29^{***}$	.27	.06	$.27^{***}$
Step 3						
Victim of cyberbullying	.36	.06	$.37^{***}$	.28	.06	$.27^{***}$
Problem-focused general coping	−.30	.06	$-.30^{***}$	−.19	.07	$-.19^{**}$
Emotion-focused general coping	.28	.06	$.29^{***}$	.27	.06	$.27^{***}$
Gender	.04	.06	.04	.04	.06	.04
Step 4						
Victim of cyberbullying × problem-focused general coping	−.02	.07	−.02	−.10	.07	−.09
Victim of cyberbullying × emotion-focused general coping	.08	.07	.07	.17	.08	$.15^{*}$

Note. [1]Depression: $R^2 = .17^{***}$ for Step 1; $\Delta R^2 = .12^{***}$ for Step 2; $\Delta R^2 = .00$ for Step 3; $\Delta R^2 = .01$ for Step 4. Health complaints: $R^2 = .11^{***}$ for Step 1; $\Delta R^2 = .06^{***}$ for Step 2; $\Delta R^2 = .00$ for Step 3; $\Delta R^2 = .02$ for Step 4. $^{***}P < .001$, $^{**}P < .01$, $^{*}P < .05$.

analyses were conducted on the whole sample and only the cyberbullied children were asked to respond to these factors.

With respect to depressive feelings, regression analyses (Table 4) showed an explained variance of 17% for the variable victim of Cyberbullying ($F(1, 242) = 54.36$, $P = 0.00$). The coping strategies added 12% to the variation in the second step ($F_{\text{change}}(2, 240) = 15.52$, $P = 0.00$). Gender did not add any variation in the third step ($F_{\text{change}}(1, 239) = 0.57$, $P = 0.45$) and the explained variation rose by only 1% when the interaction terms were added ($F_{\text{change}}(2, 237) = 0.64$, $P = 0.53$). Regarding health complaints, victims of Cyberbullying explained 11% of the variation ($F(1, 254) = 30.38$, $P = 0.00$). This rose by 6% in the coping strategies ($F_{\text{change}}(2, 252) = 9.43$, $P = 0.00$). Gender did not add any variation ($F_{\text{change}}(1, 251) = 0.50$, $P = 0.48$), whereas the variation rose by 2% when the interaction terms were added ($F_{\text{change}}(2, 249) = 2.38$, $P = 0.10$). Hypothesis one was confirmed: victimization resulted in more health complaints and depressive feelings. Furthermore, problem-focused coping proved to be negatively associated with depressive feelings and health complaints and positively with emotion-focused coping. This means that more problem-focused coping was associated with fewer depressive feelings and fewer health complaints, whereas more emotion-focused coping, was associated with more depressive feelings and more health complaints. The analyses demonstrated furthermore a significant effect of the interaction variable victim of Cyberbullying ∗ emotion-focused general coping in the outcome health complaints. Simple slope analyses (Table 5) showed significant positive regression coefficients, which means that in both low and high scores on emotion-focused coping, more victimization results in more health complaints. In the case of high scores this relationship is, however, much stronger. Additional T-tests were conducted to test whether the use of coping strategies differed between victims and nonvictims. The results showed that nonvictims made significantly less use of emotional coping strategies compared with victims (Table 6).

3.4. Effects of Coping on Health in Victimized Children. In the subsample of victimized children regression analyses were also conducted to assess specifically for the subgroup the effect of general and cyber-specific coping strategies on health complaints and depressive feelings. In these analyses, the factor frequency of being cyberbullied (in the past couple of months only once or twice; several times; very often) was taken into account as covariate and therefore entered first. Next, the coping variables (general coping strategies and cyber specific) were entered into the model. In the third step the variables gender and duration of bullying were entered.

Table 7 shows that there was a significant relationship between the frequency of victimization in the past couple of months and the two outcome variables. Though the explained variance by this factor was low in health complaints (11%) and even lower in depressive feelings (8%), both were significant ($F(1, 66) = 6.02$, $P = 0.02$). Step 2 showed that the explained variance increased substantially when the general and cyber-specific problem-focused and emotion-focused copings were added and had risen to 43% for depression ($F_{\text{change}}(4, 62) = 13.72$, $P = 0.00$) and to 31% for health complaints ($F_{\text{change}}(4, 64) = 8.72$, $P = 0.00$). Emotion-focused cyber-specific coping was strongly related to depressive feelings and health complaints: the greater the use of emotion-focused coping, the higher the perceived health complaints and depressive feelings. After addition of the coping factors into the regression, the effect of frequency of victimization disappeared for health complaints and decreased substantially for the outcome depressive feelings. Adding gender and duration of Cyberbullying in step 3 increased the explained variation in depression significantly by 5% ($F_{\text{change}}(2, 60) = 3.71$,

Table 5: Summary of simple slope analyses of the effect of general emotion-focused coping on the relationship between being bullied and health complaints ($N = 271$).

	Low score			High score		
	B	SE B	β	B	SE B	β
Emotion-focused general coping						
Victim of cyberbullying	.214	.087	.215*	.403	.084	.405***

*$P < .005$, **$P < .001$.

Table 6: Differences between victims and nonvictims in general problem-focused coping and general emotion-focused coping.

	Victims[a]		Nonvictims		t-tests
	Mean	SD	Mean	SD	
General problem-focused coping	($n = 90$)		($n = 216$)		
	26.24	6.78	26.34	6.45	.12
General emotion-focused coping	($n = 84$)		($n = 198$)		
	65.56	11.11	62.45	10.87	−2.18*

Note. [a]Victims. This group also includes children who got cyberbullied once or twice. *$P < .05$.

Table 7: Summary of the hierarchical regression analyses of bullied children for the predicted values of depression ($N = 67$) and health complaints ($N = 69$).

Predicting variables	Depressive feeling[1]			Health complaints		
	B	SE B	β	B	SE B	β
Step 1						
Frequency of cyberbullying	.31	.13	.29*	.32	.11	.33**
Step 2						
Frequency of cyberbullying	.05*	.11	.05*	.19	.10	.19
Problem focused general coping	−.18	.16	−.16	.15	.15	.15
Emotion focused general coping	−.09	.12	−.08	.08	.12	.08
Problem focused cyberspecific coping	−.09	.17	−.07	−.22	.16	−.20
Emotion focused cyberspecific coping	.82	.13	.71***	.56	.12	.54**
Step 3						
Frequency of cyberbullying	−.06	.11	−.06	.13	.11	.13
Problem focused general coping	−.19	.15	−.17	.14	.15	.14
Emotion focused general coping	−.07	.12	−.07	.08	.12	.08
Problem focused cyberspecific coping	−.06	.16	−.05	−.20	.16	−.18
Emotion focused cyberspecific coping	.82	.12	.71**	.56	.12	.54***
Gender	−.12	.11	−.10	.04	.11	.03
Duration of the cyberbullying	.31	.12	.25*	.14	.13	.12

Note: [1]Depressive feelings: $R^2 = .08$* for Step 1; $\Delta R^2 = .43$*** for Step 2; $\Delta R^2 = .05$* for Step 3; $\Delta R^2 = .04$ for Step 4. Health complaints: $R^2 = .11$** for Step 1; $\Delta R^2 = .31$*** for Step 2; $\Delta R^2 = .01$ for Step 3.

$P = 0.03$). The betas of emotion-focused cyber-specific coping remained unchanged, whereas the factor frequency of victimization became insignificant. The increase in explained variation in health complaints in Step 3 was insignificant ($F_{\text{change}}(2, 62) = 0.68$, $P = 0.51$).

4. Discussion

This study examined the effects of Cyberbullying on depressive feelings and health complaints among children of the lowest grade of secondary school and the influence of coping on this relationship. In line with most of the previous findings [8, 10, 47], our results show that almost a quarter of the 11- and 12-year-old children are victims of Cyberbullying. Only some US and Canadian studies found higher rates [4, 20]. The present study also revealed that girls were more often victims of Cyberbullying than boys. Findings of other studies so far on this matter were ambivalent.

As in most of the other studies, our research that showed that victimization increases with age [3, 4, 13, 15, 48] found, however, that younger children were more often involved in Cyberbullying. We studied limited age groups that were not totally comparable with those of the other studies.

Findings with regard to the first hypothesis (H.1) showed that victims of Cyberbullying have more health and depressive complaints compared with nonvictims, which is in line with earlier findings [13, 24, 26, 33, 49]. Although

our study showed that problem-focused coping resulted in fewer health complaints and depressive feelings and that emotion-focused coping led to more health complaints and depressive feelings, it did not confirm (H.2) that problem-focused coping buffers the negative effects of victimization on health outcomes. Hence there was no interaction between victimization and problem-based coping and victims did not show less problem-focused coping than non-victims. This is contrary to the findings of others on traditional bullying [28, 31, 35, 36] and the longitudinal study of Machmutow et al. (2012) [37] who found that close emotional support from peers and parents had a buffering effect on the relation between cybervictimization and depressive symptoms. However, more distal informative support had no effect. In line with these findings, Matsunaga (2011) [50] found that especially emotional social support (i.e., showing care and concern) helps victims to reevaluate their experience of bullying more positively. Both previous studies show that it is important to separate different forms of social support. This might explain why we did not find positive buffering results for the broad concept of "problem-based coping" (which includes social support seeking).

Emotion-focused coping, however, was consequently related to more health complaints and depressive feelings in the whole sample and in the subsample of victims of Cyberbullying. The interaction that was found with regard to emotion-focused coping also confirmed our expectation (H.3). We found that victimization was more strongly associated with reporting health complaints in cases of high scores on emotion-focused coping compared with the situation of low scores on emotion-focused coping. For traditional bullying, others reported comparable findings. Children who used coping strategies aimed at avoiding the stressor, such as trying to forget about what happened or acting as if the bullying never happened, experience more health complaints than those who used problem-focused coping strategies [28, 31, 35, 36]. Comparing cyber-specific coping with general coping as predictors of health outcomes shows cyber-specific coping to be by far the stronger predictor.

Although the study showed new, interesting, and relevant findings concerning the negative effect of emotion-focused cyber-specific coping (like begging the bully to stop or getting angry) on the well-being of cyberbullied children, the study also had limitations.

One limitation is the number of cyberbullied children included in the study ($n = 90$), which might have affected the predictive power of variables taken into account in the regression analyses. Another shortcoming concerns the measurement of coping strategies. Cyber-specific coping was measured with a new instrument developed for this study. It was not validated and was only tested on bullied children. Furthermore, this study focused on secondary appraisal, whereas the personal interpretation of the stressful situation can also be very important [30]. A third shortcoming is the cross-sectional character of the study, which implies that no causal connections can be drawn from it. A fourth shortcoming is that the information is gained by self-reports by the children, which could have led to response bias owing to socially desirable answering [51]. The lack of method variation might have distorted the results. The representativeness of this study also deserves some criticism. Because a selective group of schools were involved, the results cannot be generalized to a larger scale. Also, only state schools were asked to cooperate, so it is not known if Cyberbullying occurs to the same degree in private schools, including those with boarding facilities, as in state schools.

Given the results, the research—preferably longitudinal—should be continued. Because it appeared that cyber-specific emotional coping affects the well-being of cyberbullied children to a large extent; there should be more emphasis on further development of a valid instrument to measure this factor. As this study only found that cyber-specific emotion coping negatively affects victimized children's well-being and, contrary to the literature on traditional bullying, did not confirm the importance of problem-focused coping, future studies should emphasize this unexpected finding. It is also important to study coping strategies that are effective in preventing and reducing Cyberbullying, which has not received attention in this study. A future study should also consider using multiple sources of information, such as parents, peers, or teachers, to gain more information about the victims of Cyberbullying. As we only asked for Cyberbullying frequency, additionally it is recommended for future studies to ask for the severity of the Cyberbullying experience among the victims. It can be expected that perceived severity of Cyberbullying may influence the coping strategies that children use as well as their well-being. Additionally, it is recommended to differentiate between distinctive subgroups when discussing the seriousness of Cyberbullying. In line with Pyżalski (2012), it is recommended to distinguish at least four important subgroups: close friends, young people known from offline environment but not labelled as close friends, young people known only from online groups, and former romantic partners [16]. In school practice and at home in the family, it would seem useful to pay explicit attention to Cyberbullying, to prevent its occurrence and to prevent existing bullying from becoming worse as this is important for the well-being of cyberbullied children. Children should be informed that emotion-focussed coping is not effective in case of Cyberbullying. It is also helpful to inform them about more effective coping strategies and to let them practice these coping strategies.

References

[1] H. Seybert and A. Loof, *Internet Usage in 2010—Households and Individuals*, Eurostat, Brussels, Belgium, 2011.

[2] P. Taylor and S. Keeter, "Millennials, a portrait of generation next: Confident, Connected, Open to Change," Tech. Rep., Pew Research Center, Washington, DC, USA, 2010.

[3] J. Wolak, K. J. Mitchell, and D. Finkelhor, *Online Victimization of Youth: Five Years Later*, National Center for Missing & Exploited Children, Alexandria, Va, USA, 2006.

[4] J. Raskauskas and A. D. Stoltz, "Involvement in traditional and electronic bullying among adolescents," *Developmental Psychology*, vol. 43, no. 3, pp. 564–575, 2007.

[5] P. K. Smith, J. Mahdavi, M. Carvalho, S. Fisher, S. Russell, and N. Tippett, "Cyberbullying: its nature and impact in secondary

school pupils," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 49, no. 4, pp. 376–385, 2008.

[6] D. Olweus, *Treiteren op school: omgaan met pestkoppen en zondebokken in de klas*, Academische Uitgeverij Amersfoort, Amersfoort, The Netherlands, 1992.

[7] R. Slonje, P. Smith, and A. Frisen, "The nature of cyberbullying and strategies for prevention," *Computers in Human Behavior*, vol. 29, pp. 26–32, 2013.

[8] H. Vandebosch, Cleemput, K. van, D. Mortelmans, and M. Walrave, *Cyber-Bullying among Younsters in Flanders*, Vlaams Instituut voor Wetenschappelijk en Technologisch Aspectenonderzoek, Brussel, Belgium, 2006.

[9] S. Shariff, *Cyber-Bulling. Issues and Solutions For the School, the Classroom and the Home*, Routledge, New York, NY, USA, 2008.

[10] R. Slonje and P. K. Smith, "Cyberbullying: another main type of bullying?: personality and Social Sciences," *Scandinavian Journal of Psychology*, vol. 49, no. 2, pp. 147–154, 2008.

[11] T. Jordan, *Cyberpower. The Culture and Politics of Cyberspace and the Internet*, Routledge, London, UK, 1999.

[12] F. Dehue, C. Bolman, and T. Völlink, "Cyberbullying: Youngsters' experiences and parental perception," *Cyberpsychology and Behavior*, vol. 11, no. 2, pp. 217–223, 2008.

[13] M. L. Ybarra and K. J. Mitchell, "Online aggressor/targets, aggressors, and targets: a comparison of associated youth characteristics," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 45, no. 7, pp. 1308–1316, 2004.

[14] J. Wolak, K. J. Mitchell, and D. Finkelhor, "Does online harrassment constitute bullying? An exploration of online harassment by known peers and online-only contacts," *Journal of Adolescent Health*, vol. 41, no. 6, pp. S51–S58, 2007.

[15] R. M. Kowalski and S. P. Limber, "Electronic bullying among middle school students," *Journal of Adolescent Health*, vol. 41, no. 6, pp. S22–S30, 2007.

[16] J. Pyżalski, "From cyberbullying to electronic aggression: typology of the phenomenon," *Emotional and Behavioural Difficulties*, vol. 17, pp. 305–317, 2012.

[17] T. Beran and Q. Li, "The relationship between cyberbullying and school bullying," *Journal of Student Wellbeing*, vol. 1, no. 2, pp. 15–33, 2007.

[18] M. A. Campbell, "Cyber bullying: an old problem in a new guise?" *Australian Journal of Guidance and Counselling*, vol. 15, no. 1, pp. 68–76, 2005.

[19] Q. Li, "New bottle but old wine: a research of cyberbullying in schools," *Computers in Human Behavior*, vol. 23, no. 4, pp. 1777–1791, 2007.

[20] J. Kerstens and W. Ph. Stol, *Jeugd en Cybersafety. Online slachtoffer- en daderschap onder Nederlandse jongeren*, Boom Lemma uitgevers, Den Haag, The Netherlands, 2012.

[21] M. L. Ybarra, M. Diener-West, and P. J. Leaf, "Examining the overlap in internet harassment and school bullying: implications for school intervention," *Journal of Adolescent Health*, vol. 41, no. 6, pp. S42–S50, 2007.

[22] S. Perren, J. Dooley, T. Shaw, and D. Cross, "Bullying in school and cyberspace: associations with depressive symptoms in Swiss and Australian adolescents," *Child and Adolescent Psychiatry and Mental Health*, vol. 4, article 28, 2010.

[23] F. Sticca, S. Ruggieri, F. Alasker, and S. Perren, "Longitudinal risk factors for cyberbullying," *Journal of Community and Applied Social Psychology*, vol. 23, pp. 52–67, 2013.

[24] D. Finkelhor, K. Mitchell, and J. Wolak, *Online Victimization of Youth*, Crimes against Children Research Centre University of New Hampshire, 2000.

[25] M. L. Ybarra, "Linkages between depressive symptmatology and internet harassment among young regular internet users," *Cyberpsychology and Behavior*, vol. 7, no. 2, pp. 247–257, 2004.

[26] R. J. J. M. van den Eijnden, G.-J. Meerkerk, A. A. Vermulst, R. Spijkerman, and R. C. M. E. Engels, "Online communication, compulsive internet use, and psychosocial wellbeing among adolescents: a longitudinal study," *Developmental Psychology*, vol. 44, no. 3, pp. 655–665, 2008.

[27] A. Sevcikova, D. Smahel, and M. Otavova, "The perception of cyberbullying in adolescent victims," *Emotional and Behavioural Difficulties*, vol. 17, no. 3-4, pp. 319–328, 2012.

[28] T. Cassidy and L. Taylor, "Coping and psychological distress as a function of the bully victim dichotomy in older children," *Social Psychology of Education*, vol. 8, no. 3, pp. 249–262, 2005.

[29] R. S. Lazarus and S. Folkman, *Stress, Appraisal and Coping*, Springer, New York, NY, USA, 1984.

[30] R. S. Lazarus, *Stress and Emotion: a New Synthesis*, Free Association Books, London, UK, 1999.

[31] P. K. Smith, S. Shu, and K. Madsen, "Characteristics of victims of schoolbullying: developmental changes in copingstrategies ands skills," in *Peer Harassment at School: the Plight of the Vulnerable and Victimised*, J. Juoven and S. Graham, Eds., pp. 332–352, Guilford Press, New York, NY, USA, 2001.

[32] B. Kochenderfer-Ladd and K. Skinner, "Children's coping strategies: moderators of the effects of peer victimization?" *Developmental Psychology*, vol. 38, no. 2, pp. 267–278, 2002.

[33] J. Lodge and E. Frydenberg, "Cyber-bullying in Australian schools: profils of adolescent coping and insights," *The Australian Educational and Developmental Psychologist*, vol. 24, no. 1, pp. 45–58, 2007.

[34] T. Völlink, C. A. W. Bolman, F. Dehue, and N. Jacobs, "Coping with cyberbullying: differences between victims, bully-victims and children not involved in bullying," *Journal of Community and Applied Social Psychology*, vol. 23, pp. 7–24, 2013.

[35] E. Burton, E. Stice, and J. R. Seeley, "A prospective test of the stress-buffering model of depression in adolescent girls: no support once again," *Journal of Consulting and Clinical Psychology*, vol. 72, no. 4, pp. 689–697, 2004.

[36] S. C. Hunter, J. Mora-Merchan, and R. Ortega, "The long-term effects of coping strategy use in victims of bullying," *Spanish Journal of Psychology*, vol. 7, no. 1, pp. 3–12, 2004.

[37] K. Machmutow, S. Perren, F. Sticca, and F. D. Alsaker, "Peer victimisation and depressive symptoms: can specific coping strategies buffer the negative impact of cybervictimisation?" *Emotional and Behavioural Difficulties*, vol. 17, pp. 403–420, 2012.

[38] J. Riebel, R. S. Jäger, and U. C. Fischer, "Cyberbullying in Germany—an exploration of prevalence, overlapping with real life bullying and coping strategies," *Psychology Science Quarterly*, vol. 51, no. 3, pp. 298–314, 2009.

[39] D. S. J. Hawker and M. J. Boulton, "Twenty years' research on peer victimization and psychosocial maladjustment: a meta-analytic review of cross-sectional studies," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 41, no. 4, pp. 441–455, 2000.

[40] M. F. Van der Wal, C. A. M. De Wit, and R. A. Hirasing, "Psychosocial health among young victims and offenders of direct and indirect bullying," *Pediatrics*, vol. 111, no. 6 I, pp. 1312–1317, 2003.

[41] P. K. Smith, J. Mahdavi, M. Carvalho, and N. Tippett, "An investigation into cyberbullying, its forms, awareness and impact,

and the relationship between age and gender in cyberbullying," Research Brief no. RBX03.06, DPES, London, UK, 2006.

[42] J. O. Bijstra, S. Jackson, and H. A. Bosma, "Utrecht copinglist for adolescents," *Kind en Adolescent*, vol. 15, pp. 98–109, 1994.

[43] P. J. G. Schreurs, B. van de Tellegen, and J. F. Brosschot, *De Utrechtse Copinglijst (UCL)*, Swets & Zeitlinger, Lisse, The Netherlands, 1993.

[44] A. Evers, J. C. Van Vliet-Mulder, and C. J. Groot, *Documentation of Tests and Testresearch in the Netherlands*, Van Gorcum, Assen, The Netherlands, 2000.

[45] J. Joosten and M. J. Drop, "The reliability and comparability of three versions of the VOEG," *Gezondheid en Samenleving*, vol. 8, pp. 251–265, 1987.

[46] M. Kovacs, *Children's Depression Inventory, Short Version (CDI:S)*, Multi Health Systems, New York, NY, USA, 2004.

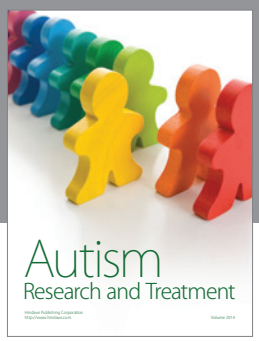
[47] F. Dehue, C. Bolman, and T. Völlink, "Cyber-bullying: what do children do and do parents know?" Tech. Rep., Open University of the Netherlands, Heerlen, The Netherlands, 2008.

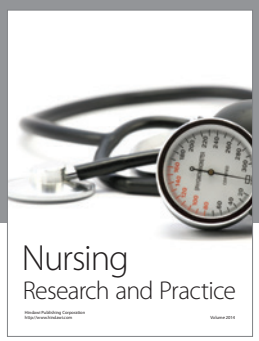
[48] H. van den Akker, *Online Bullying: Joke of Offensive*, Qrius: Persrapport Planet Internet, 2005.

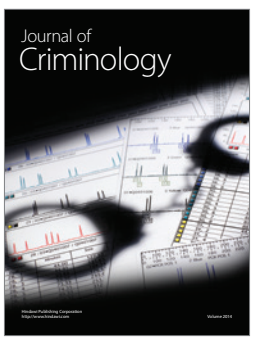
[49] M. L. Ybarra, K. J. Mitchell, J. Wolak, and D. Finkelhor, "Examining characteristics and associated distress related to Internet harassment: findings from the Second Youth Internet Safety Survey," *Pediatrics*, vol. 118, no. 4, pp. e1169–e1177, 2006.

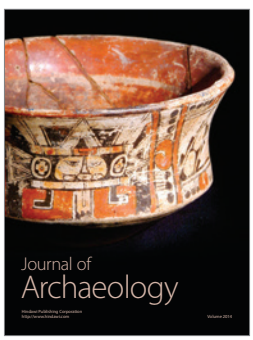
[50] M. Matsunaga, "Underlying circuits of social support for bullied victims: an appraisal-based perspective on supportive communication and postbullying adjustment," *Human Communication Research*, vol. 37, no. 2, pp. 174–206, 2011.

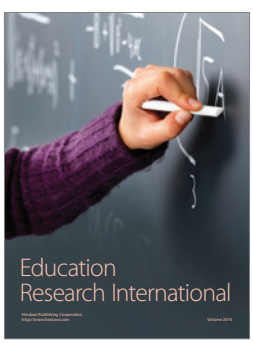
[51] A. C. Baldry and D. P. Farrington, "Ullies and delinquents: personal characteristics and parental styles," *Journal of Community and Applied Social Psychology*, vol. 10, no. 1, pp. 17–31, 2000.

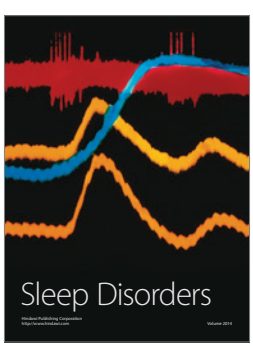


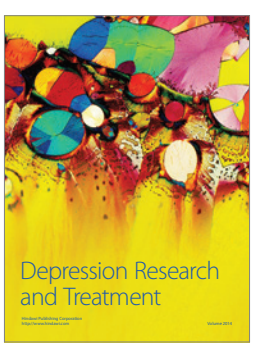


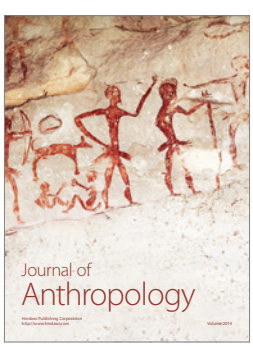


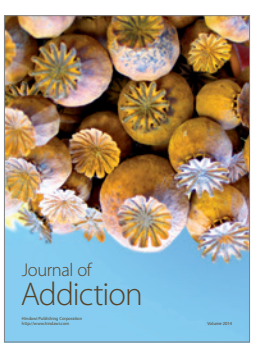


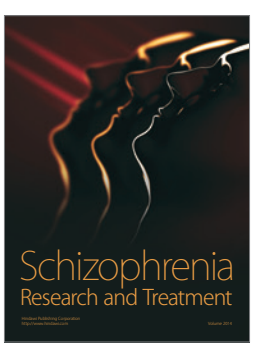


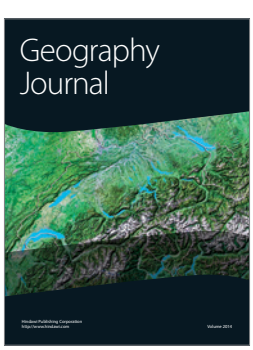


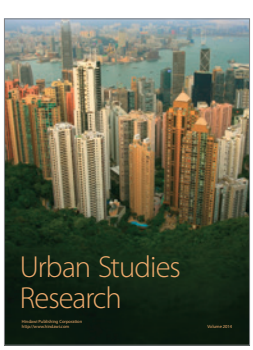












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