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EMPIRICAL RESEARCH

How do Adolescents Learn Cyber-victimization Coping Skills? An Examination of Parent and Peer Coping Socialization

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Abstract
Recently, cyber-victimization has become an ever increasing concern for adolescents. Given the negative consequences of cyber-victimization, it is important to understand how adolescents learn strategies to cope (i.e., "coping socialization") with cyber-victimization. The purpose of this study is to understand common coping strategies reported by adolescents, identify from whom youth learn cyber-victimization coping strategies (coaching), and explore how coaching is associated with adolescents' self-reported use of coping. In a sample of 329 adolescents (49% male; 70% white), we found that positive coping strategies (e.g., problem solving, seeking social support) are used most frequently, and adolescents' perceptions of both parent and peer coping socialization is associated with self-reported use of coping. Interventionists can use this information to adapt interventions to include influential positive socializers.

Keywords Adolescence · Cyber-victimization · Socialization · Coping

Introduction

Electronic media and mobile devices have changed the way adolescents communicate. The Pew Research Center identified that 88% of American adolescents aged 13–17 had access to a cellular phone (73% of those phones were smart phones), 87% of adolescents had access to a desktop or laptop, and 58% had access to a tablet computer. A large majority of adolescents use the internet daily and 71% use more than one social networking site. In addition, 91% of adolescents who have their own cell phone either text directly through their mobile phones or use an app or website (Lenhart 2015). Adolescent smartphone access/ownership dramatically increased between 2012 (23% of 12–17 year olds; Lenhart 2012) and 2015 (75% of 13–17 year olds; see Lenhart et al. 2015) likely making cyber-victimization more common.

Generally, most peer-to-peer cyber-exchanges are positive (and can even facilitate closeness within an already established friendship; Valkenburg and Peter 2007); however, cyber-victimization is a growing problem that has been associated with a variety of mental health outcomes. Given that cyberbullying and cyber-victimization constructs are conflated (i.e., "bullying" typically refers to repeated victimizations in power-imbalanced relationships), we attempted to identify the impact of cyber-victimization separate from cyberbullying in the literature. Fisher et al. (2016) completed a meta-analysis evaluating the associated internalizing and externalizing problems experienced by adolescents who experienced cyber-victimization, specifically. The authors' results were comparable to those in the literature evaluating the impact of cyberbullying (see Landoll et al. 2015; Pabian and Vandebosch 2016a). Adolescents reported internalizing problems such as anxiety, depression, low self-esteem and suicidal ideation and externalizing problems such as self-harm, aggression and social problems. In addition, cyber-victimized adolescents also report more problems with attendance and academic achievement (Gardella et al. 2017). Further research is needed to evaluate the specific effects of cyber-victimization on physical health.

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A recent review found online "cyberbullying" victimization rates to be between 3–72% in 81 manuscripts assessing prevalence (Selkie et al. 2016). This wide range likely has to do with the way researchers conceptualize the terms "bullying" and "victimization." Within the peer victimization literature, where most research has focused on in-person victimization, the terms "bullying" and "victimization" are often used interchangeably despite conceptual differences within each construct. As defined by the Centers for Disease Control and Prevention (CDC) (Gladden et al. 2014), bullying is any unwanted aggressive behavior(s) by another individual that involves a real or perceived power imbalance and is repeated or has a high likelihood of being repeated. This is contrasted with the term victimization, which Finkelhor (2008) defined as any behavior by another individual that is outside the limits of appropriate behavior and which causes harm. These definitions suggest that for an aggressive act to be considered "bullying," there must be a power differential between the individuals involved and the behavior must be repeated over time. Without these qualifiers, an aggressive act is then considered to be "victimization," not "bullying."

These definitions are also applicable within the context of electronic interactions. Often, particularly regarding reports in the media, aggression that occurs over the internet (e.g., Facebook) or through text messaging probably does not meet the criteria necessary to be labeled "cyberbullying" as there may be no power differential between the perpetrator and victim and the aggressive act may not be repetitive. Therefore, despite the use of the term "cyberbullying" in the popular media, the more appropriate term for many such acts to identify single episodes of aggression that are not repeated is "cyber-victimization." It is important to note that some of the high-profile media stories are in fact about cyberbullying (e.g., acts where a popular group of youths repeatedly victimize a socially isolated youth, sometimes leading to devastating consequences). Still, for the purposes of this study, we refer to single acts of aggression that do not include a power differential as "cyber-victimization." Given the wide range of prevalence rates noted in Selkie et al. (2016), it is important to select the prevalence rates in studies that use a similar definition of cyber-victimization to that of the present study. In comparable studies (i.e., with a similar definition, time frame, and sample), past-year cyber-victimization rates range from 24 to 56% (e.g., Korchmaros, Roberto et al. 2014; Sontag et al. 2011), again providing further evidence that the cyber-victimization is a relatively common problem.

To understand how to reduce the consequences of negative online interactions, researchers have begun the process of understanding the various ways in which adolescents cope with cyber-victimization and the frequency with which adolescents use these strategies (see Cerna et al. 2016; Dehue 2016; Machackova et al. 2013; Machmutow et al. 2012; Tokunaga 2010; Wadian et al. 2016; Weinstein et al. 2016). Well-studied coping strategies include seeking social support, problem solving, distancing, distraction, and retaliation. There are various factors that may influence youths' choice of coping strategies as they relate to cyber- or in-person victimization. For example, Bradbury et al. (under review) identified gender differences in coping strategies; specifically, female adolescents used more problem solving for in-person compared to cyber-victimization whereas male adolescents used more distraction and family support for in-person victimization (compared to cyber-victimization). Further, the authors also found that having experienced a cyber-victimization event in the last year was associated with the use of distancing and social support-family strategies. Thus, having experienced a recent cyber-victimization event in the last year appears to be related to coping strategy selection in the near-future. No other studies evaluating this construct have been conducted to our knowledge. The same study also evaluated differences in coping by race and grade and found no significant differences for either variable suggesting that race and grade were not related to coping strategy selection. Overall, Bradbury et al. (under review) found that adolescents used a wider variety of coping strategies to manage experiences of in-person victimization compared to cyber-victimization. Importantly, that study supported the use of what the researchers termed "positive coping strategies" (i.e., problem solving, social support, distraction strategies), showing that adolescents who used those strategies felt more efficacious in handling cyber-victimization stressors. In addition, research has shown that these strategies are related to more positive adjustment when used in response to other stressors (e.g., academic, family).

Although research suggests that there are gender differences in strategies used to cope with cyber-victimization, and that adolescents perceive that certain strategies work better than others, the ways in which adolescents learn these coping strategies is still unknown. One way to understand how adolescents learn ways to cope with stressful life tasks is through the "socialization of coping" model. Socialization of coping is defined as the messages that are sent by parents, teachers, and peers either verbally or behaviorally that communicate how to cope with stress (Abaied and Rudolph 2010). The coping socialization model consists of three parts: Coaching, Modeling, and Context (Kliewer et al. 1994). In the current study, we seek to investigate the ways in which peers and parents coach youth to use coping strategies for cyber-victimization. Coaching, within this framework, is conceptualized as any verbal suggestion of specific coping strategies used to influence a youth's coping repertoire and strategy selection in specific situations. This strategy would likely be effective when children's own

coping strategy repertoire becomes exhausted (Kliewer et al. 1996), or in novel situations. Coaches are then able to provide youth with appropriate scaffolding, suggest new strategies altogether, or offer suggestions on how to alter an already applied coping strategy in a different way (e.g., using social support from a teacher rather than from a friend).

Developmentally, there is a significant decline in adolescents' perceptions of parental legitimacy and obligation to obey parental suggestions (Darling et al. 2008), thus possibly leading to less compliance with parental suggestions and coaching. This research is consistent with theories that suggest adolescents are beginning to rely more on their peers for support than their parents (Collins et al. 2006; Furman and Buhrmester 1992). To our knowledge, there are no studies evaluating the comparative role of parent and peer socialization *of coping*. However, other studies have evaluated parent and peer influences on other behaviors such as alcohol and drug use. These studies suggest that peer substance use tends to be more strongly related to adolescent use than parent alcohol use (Chassin et al. 1993; Wills et al. 1998; Windle 2000). We suspect that a similar pattern will emerge when it comes to the influence of parent and peer socialization of coping with cyber-victimization. Understanding how adolescents are socialized to cope with cyber-victimization is important for informing the development of cyber-victimization prevention programs and guidance provided to parents and other important adults in children's lives who are concerned about how to respond to cyber-victimization.

Current Study

In this study, we seek to identify the frequency of cyber-victimization events in our sample of 7th and 8th graders. It is our aim to compare the data collected in the current study to a comparable sample from the same school from 2012 (i.e., 3 years prior), in order to evaluate trends in prevalence of cyber-victimization. In addition, we seek to examine demographic differences in the use of coping strategies, and whether parents' and/or peers' socialization of coping with cyber-victimization is related to adolescents' use of six different coping strategies. Because smartphone access has dramatically increased between 2012 and 2015, we expect that adolescents will report greater cyber-victimization history in 2015, compared to adolescents reporting on cyber-victimization history in 2012 (Hypothesis 1). Because the literature supports more cyber-victimization coping efforts by females, we expect that females will report the use of more coping overall than males in our sample (Hypothesis 2). Consistent with Bradbury et al. (under review), we expect that having experienced a cyber-victimization event will be related to adolescent coping (Hypothesis 3). We believe that coping will not differ based on race (Hypothesis 4) given the findings of Bradbury et al. (under review), nor do we expect that there will be significant differences in coping based on grade because there is minimal development between 7th and 8th graders (consistent with Bradbury et al. under review; Hypothesis 5). Finally, the socialization of coping theory supports that the types of coping strategies that are coached to adolescents will be related to the types of coping strategies they reported using to cope with cyber-victimization, with stronger main effects for peer coaching than parent coaching (Hypothesis 6). We expect that peers' socialization will be more predicative of parent socialization based on the literature suggesting that peer influences are more predictive of adolescent substance use than parent influences.

Method

Participants and Procedures

The analysis sample included 329 (49% male; 70% white) 7th and 8th grade students in one public junior high school in a suburban area in the Midwest region of the United States (Bradbury et al. under review; see Table 1 for demographic information). Research suggests that cyber-victimization peaks around 8th grade (Williams and Guerra 2007), which provided the rationale for recruiting participants in middle school. This school was chosen because cyber-victimization was studied 3 years prior (in 2012; to evaluate trends in cyber-victimization within the same school), and the school includes students in the 6th, 7th, and 8th grades. We chose to study 7th and 8th graders because older students tend to have more access to smartphones and the internet. In total, including all grades (6th–8th), there are

Table 1 Demographic characteristics of the sample

	N	%
Gender		
Male	161	49%
Female	167	51%
Grade		
7th	162	49%
8th	167	51%
Race		
White	228	70%
Asian American	25	8%
Bi-racial	21	7%
African American	24	6%
Other	15	5%
Hispanic	12	4%

Table 2 Experiences of cyber-victimization in the last year by sex

Another kid…	% females who experienced	% males who experienced	X^2	p
said mean things or did mean things to me on the internet, though text-messaging, or on a cell phone.	41%	32%	3.28	.05
made a rude or mean comment about me online or on a cell phone.	42%	35%	1.85	.11
spread rumors about me online or on a cell phone, whether they were true or not.	23%	21%	.31	.34
made a threatening or aggressive comment to me online or on a cell phone.	18%	16%	.16	.40
posted a video or picture online, I did not want him/her to post, that showed me being hurt (by things like being hit or kicked) or embarrassed (by things like having my pants pulled down) for other people to see.	7%	6%	.02	.54
took me off his/her friend list or other online group because he/she was mad at me.	38%*	24%*	7.50	.00
used the internet or texting to get others to be mean to me.	21%*	10%*	7.59	.00
set up an account under my name and used it to say upsetting things to or about others.	2%	4%	.97	.25

*$p < .05$

over 500 enrolled students each year. At this school, 19% of students at the junior high school are eligible for free and reduced lunches which is lower than the county average in which the school exists (53%), according to propublica.org. Approximately 80% of the student population at this school is White, 7% are Asian or Pacific Islander, and 5% are African American. There are also roughly equal percentages of male and female students (52% male, 48% female). This sample's sociodemographic characteristics are comparable to those of the school as a whole, and therefore we believe that our results can be generalized to schools with similar demographic compositions.

A waiver of active parental consent was granted by the first author's institutional review board (IRB); the IRB granted the waiver because youth were not being asked to report on illegal or sensitive behavior, and this process ensured a larger and more representative sample than if active parental consent were required from each parent. A letter describing the study was sent home to the parents of 356 adolescents (the entire 7th and 8th grade population). This letter indicated the importance of studying how children cope with cyber-victimization as well as how we planned to protect the confidentiality of the data collected from the students who participated. Parents were given the opportunity to have their child opt out of participation. If parents did not decline to participate, the students were allowed to participate in the study; students also were given the option to opt out. Eight parents opted their adolescent out of the study and five students declined participation on the day of the survey. The remainder of the adolescents who did not participate were either absent on the day of the survey administration or had moved and were no longer attending the school. Thus, 92% of the 7th and 8th grade students at this school participated in this study. Regarding the 2012 cohort (utilizing identical methodology), 91% ($N = 330$) of the 7th and 8th grade students participated in that year of data collection.

The measures were administered in several class sessions at the school during a 45-min period. Each classroom survey administration was led by either the first author or a trained graduate-level research assistant. Assistants remained in classrooms for the duration of the survey administration to answer any questions. Before starting the survey, students were read the youth assent form by the survey administrator. The first section of the survey contained demographic items. Next, all participants answered questions about their experiences with cyber-victimization in the past year and were then asked how they coped with the most stressful of these experiences (see Table 2 for frequencies of cyber-victimization experiences). If they had not experienced a cyber-victimization event, they were asked to report on how they thought they would cope with cyber-victimization if it happened to them in the future. We collected data on students who had and had not experienced cyber-victimization to examine whether there were differences in the students' preferred coping based on whether they had been recently victimized. At this point, the surveys were counterbalanced to account for any potential order effects: a randomly selected subset of the students answered questions about their friends' coaching first (order 1) and the other subset answered questions about their parents' coaching first (order 2). However, each student answered all of the same items about their friends and their parents. Students assigned to order 1 were then asked to think of a close friend who they would likely talk to about cyber-victimization. Students answered questions rating how often their friends would suggest certain strategies in response to cyber-victimization. Next, the adolescents were asked to

nominate the parent they would most likely talk to about cyber-victimization problems. Adolescents answered questions rating how often their parent would suggests certain strategies in response to cyber-victimization. Students who completed order 2 of the survey answered questions about their parents first followed by questions about their friends.

Measures

Experiences with cyber-victimization

The introduction to the coping survey about cyber-victimization contained a list of eight stressors that prompted the participant to think about various stressful encounters he or she had experienced during the previous year. Bradbury et al. (under review) adapted items from the Internet Experiences Questionnaire (Raskauskas and Stoltz 2007) to assess experiences with cyber-victimization. Examples of items on the list include, "Another kid said mean things or did mean thing to me on the internet, through text messaging, or on a cell phone"; and "Another kid made a threatening or aggressive comment to me online or on a cell phone" (see Table 2). Each participant was assigned a sum score of problems he or she experienced for in-person and cyber problems. The coefficient alpha for the cyber-victimization score was .79 in the current sample.

Coping with cyber-victimization

Adolescents responded to how often they used 27 coping strategies in response to the most distressing cyber-victimization event they reported experiencing in the past year (based on the *Experiences with cyber-victimization* measure). If adolescents did not experience a cyber-victimization event in the past year, they were asked to indicate how often *they think* they would use each coping strategy *if* a stressful cyber-victimization event happened to them.

The coping strategy items were adapted from several subscales from Causey and Dubow's (1992) Self-report Coping Measure for youth: Seeking Social Support, Self-Reliance/Problem Solving, Distancing, and Externalizing. Distraction was adapted from The Responses to Stress Questionnaire (Connor-Smith et al. 2000). The participants rated how often they used, or would use, the specific coping strategy to respond to the stressor along a 4-point scale: 1 (Not at all), 2(A little), 3 (Sometimes), and 4 (A lot) using the stem "If a [cyber-victimization experience] happened to me, I would…"

The coping items were validated by Bradbury et al. (under review), and the scale resulted in six domains derived through principal components factor analysis (i.e., social support-friend, social support-family/adult, problem solving, distraction, distancing, retaliation). Prior research supports the reliability of the self-report coping subscales, α's ranging from .80 to .87. In the current sample, coefficient alphas were acceptable: .78 for social support-friend, .86 for social support-family/adult, .76 for problem solving, .78 for distancing, .79 for retaliation, and .76 for distraction.

Perceived peer coping coaching

The items on the perceived peer coping socialization measure were the same 27 strategies described above on the Coping with Cyber-Victimization measure (Causey and Dubow 1992; Connor-Smith et al. 2000), with the exception that adolescents were asked to think about the advice he/she received from his/her close friend (i.e., "If I have a cyber-victimization experience, my friend would tell me to…"). Coefficient alphas for the current sample were as follows: .78 for social support-friend, .89 for social support-family/adult, .81 for problem solving, .86 for distancing, .86 for retaliation, and .83 for distraction.

Perceived parent coping coaching

The items on the perceived parent coping socialization measure were the same 27 strategies described above on the Coping with Cyber-Victimization measure (Causey and Dubow 1992; Connor-Smith et al. 2000), with the exception that adolescents were asked to think about the advice he/she received from his/her parent (i.e., "If I have a cyber-victimization experience, my parent would tell me to…"). Coefficient alphas for the current sample were as follows: .82 for social support-friend, .87 for social support-family/adult, .81 for problem solving, .88 for distancing, .77 for retaliation, and .85 for distraction.

Analysis

First, we explored the rate of cyber-victimization in our sample of 7th and 8th graders. To do this, we computed frequencies to identify the percentage of students who self-reported having experienced at least one or more cyber-victimization events in the last year. Furthermore, we investigated any gender differences in the experience of cyber-victimization by computing a Chi-square analysis. Second, to identify demographic differences (e.g., race, sex, grade, experienced a cyber-victimization event) in the use of coping strategies, we conducted a repeated measures ANOVA. Demographic variables were included as grouping variables in the repeated measures ANOVA (the coping strategies were the within-subjects factor) to assess for any significant differences in coping strategy use. Third, to explore whether parents' and/or peers' socialization of coping with cyber-victimization predicts adolescents' use of

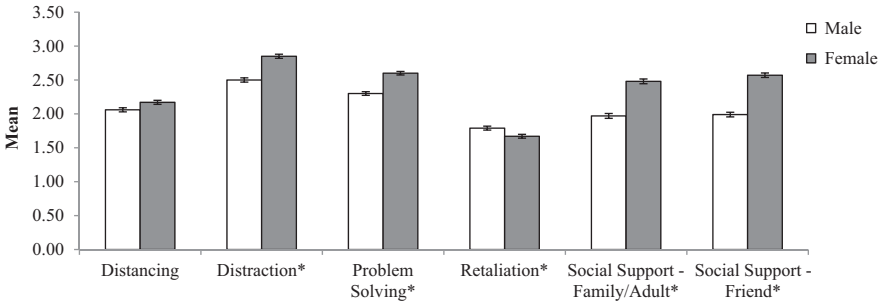

Fig. 1 Means for coping strategies by sex. *Note*. Coping items were rated on a 4-point scale from Not at all (1), A little (2), Sometimes (3), A lot (4). *$p < .05$

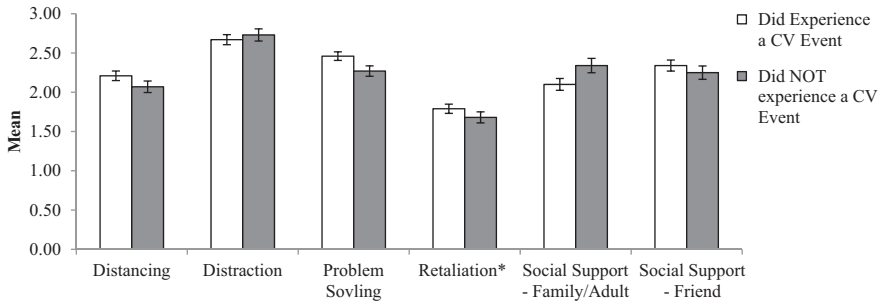

Fig. 2 Means for coping strategies by cyber-victimization experience. *Note*. Coping items were rated on a 4-point scale from Not at all (1), A little (2), Sometimes (3), A lot (4). *$p < .05$

the six different coping strategies, we computed six hierarchical linear regressions, one for each adolescent self-reported coping strategy (i.e., problem solving, distraction, social support-friend, social support-family/adult, distancing, retaliation). In step one, the background variables shown to be related to self-reported coping were entered to control statistically for these variables. In step two, the scores for a given coping strategy socialized by the parent and the peer were entered to test for the main effects of those variables on the same coping strategy the adolescent reported using. To assess for significant differences between parent and peer regression coefficients where both parent and peer socialization were predictive of self-reported coping, the betas were compared using z-score formulas (Clogg et al. 1995).

Results

Rates of Self-reported Cyber-victimization

Of the 329 students who completed the survey in 2015, 138 (42%) did not experience a cyber-victimization event in the previous year. Overall, 64% of females and 53% of males (58% total) experienced *at least one* cyber-victimization event in the past year. Chi-square analysis indicated that females were more likely to experience at least one cyber-victimization event in the last year compared to males; $X^2(1, 328) = 3.84$, $p < .05$). Between 2012 and 2015, rates of cyber-victimization remained fairly stable (54–58%).

Demographic Differences in which Strategies Are Used

A repeated measures ANOVA was used to determine if there were any group differences (i.e., sex; whether the adolescent did or did not experience cyber-victimization in the past year; race) in the coping strategies used. There was a significant interaction between sex and coping strategies, $F(5, 307) = 9.04$, $p < .05$, suggesting that adolescents reported using different coping strategies depending on their sex. A series of paired *t*-tests showed that females used significantly more distraction, problem solving, social support-family/adult, and social support-friend than males. Males reported using more retaliation than females. There was no difference in the reported use of distancing between males and females. See Fig. 1 for a graphic display of coping strategy means across the two sexes.

In addition, there was a significant interaction between having experienced a cyber-victimization event in the last year and coping strategies, $F(5, 307) = 5.38$, $p < .05$. A series of paired *t*-tests showed that those who had experienced a cyber-victimization event in the last year used significantly more retaliation compared to what students who did not experience an event said they would do. There was no difference in the reported use (or perceived use) of all other coping strategies (i.e., distancing, distraction, problem solving, social support-friend, social support-family/adult) between those who had and had not experienced a cyber-victimization event in the last year. See Fig. 2 for a graphic display of coping strategy means by having experienced a cyber-victimization event.

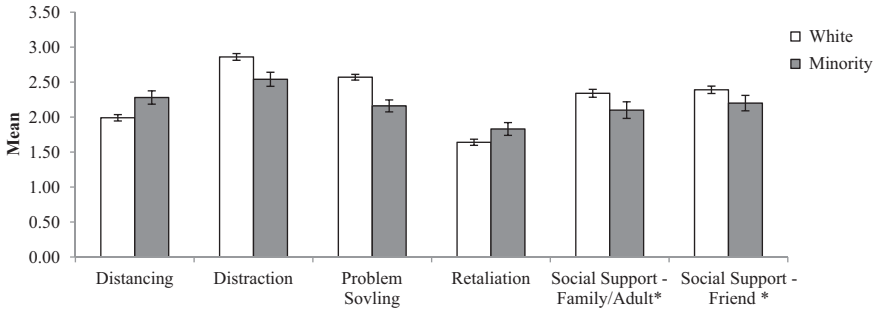

Fig. 3 Means for coping strategies by race. *Note*. Coping items were rated on a 4-point scale from Not at all (1), A little (2), Sometimes (3), A lot (4). *$p < .05$

Table 3 Means and standard deviations of coping strategies

Coping strategy	Mean	Standard deviation
Distraction	2.68_a	.80
Problem solving	2.46_b	.68
Social support-friend	2.29_c	.90
Social support-family/Adult	2.23_{cd}	.93
Distancing	2.11_d	.76
Retaliation	1.73_e	.72

Note. Means with the same subscript are not significantly different from each other in Fisher's LSD *t*-tests. Coping items were rated on a 4-point scale from Not at all (1), A little (2), Sometimes (3), A lot (4)

There was also a significant interaction between race and coping strategies, $F(5, 307) = 2.28$, $p < .05$. A series of paired *t*-tests showed that white students used significantly more social support-family/adult and social support-friend than minority students. There was no difference in the reported use of all other coping strategies (i.e., distancing, distraction, problem solving, retaliation) between white students and minority students. See Fig. 3 for a graphic display of coping strategy means by race (Table 3).

Perceived Parent and Peer Coping Socialization as Predictors of Adolescents' Use of Coping Strategies

Distancing

In Step one, none of the background variables significantly predicted the self-reported use of distancing (see Table 4). In Step two, peer coaching of distancing and parent coaching of distancing accounted for 35% of the variance in self-reported use of distancing: peer coaching ($\beta = .37$, $p < .05$) and parent coaching ($\beta = .27$, $p < .05$) both predicted greater self-reported use of distancing (Table 4). There was no statistically significant difference in the effects of peer- or parent-coaching on self-reported distancing ($z = 1.30$, $p > .05$).

Distraction

In step one, the background variables accounted for 6% of the variance in the self-reported use of distraction, with sex positively predicting the self-reported use of distraction ($\beta = .37$, $p < .05$), indicating that being female was associated with more use of distraction coping. In step two, peer coaching of distraction ($\beta = .49$, $p < .05$) and parent coaching of distraction ($\beta = .18$, $p < .05$) accounted for an additional, and significant, 44% of the variance in self-reported distraction. In other words, peer coaching and parent coaching both positively predicted self-reported use of distraction (Table 4). Peer coaching was more strongly related to one's own coping than parent coaching ($z = 3.92$, $p < .05$).

Problem solving

In step one, the background variables accounted for 6% of the variance in the self-reported use of problem solving, with sex significantly predicting the self-reported use of problem solving ($\beta = .30$, $p < .05$), indicating that being female positively predicts the use of problem solving. In step two, peer coaching of problem solving and parent coaching of problem solving accounted for an additional, and significant, 40% of the variance in self-reported use of problem solving: peer coaching ($\beta = .38$, $p < .05$) and parent coaching ($\beta = .30$, $p < .05$) of problem solving both positively predicted self-reported use of problem solving (Table 4). There was no statistically significant difference in the effects of peer- or parent-coaching on self-reported coaching ($z = 1.01$, $p > .05$).

Retaliation

In step one, the background variables accounted for 11% of the variance in the self-reported use of retaliation, with sex and having had experienced a cyber-problem in the last year significantly predicting the self-reported use of retaliation ($\beta = -.23$, $p < .05$; $\beta = .46$, $p < .05$). Being female is associated with less use of retaliation, while having experienced a cyber-problem in the last year is associated with more use of retaliation. In step two, peer coaching of retaliation and parent coaching of retaliation accounted for an additional, and significant, 36% of the variance in self-reported use of retaliation: peer coaching ($\beta = .47$, $p < .05$)

Table 4 Results of hierarchical linear regressions: predicting self-reported use of coping strategies by demographic/background variables, and self-reported parent and peer coaching of the strategies

Self-reported use of coping strategy		*t*	*p*	*β*	*F*	*df*	*p*	Adj. R^2
Distancing	*Model 1*				1.33	4, 295	.26	.02
	Sex	.45	.65	.04				
	Race	−.27	.79	−.03				
	Cyber-problem	.88	.38	.08				
	Order	1.79	.07	.17				
	Model 2				27.33	6, 295	.00	.34
	Sex	1.67	.10	.12				
	Race	−.88	.38	−.07				
	Cyber-problem	.72	.47	.06				
	Order	.94	.35	.07				
	Peer coaching	6.25	.00	.37				
	Parent coaching	4.56	.00	.26				
Distraction	*Model 1*				6.40	4, 294	.00	.07
	Sex	3.80	.00	.35				
	Race	−1.48	.14	−.15				
	Cyber-problem	−.06	.95	−.01				
	Order	2.50	.01	.23				
	Model 2				48.96	6, 294	.00	.50
	Sex	1.03	.31	.07				
	Race	−1.69	.09	−.12				
	Cyber-problem	−.34	.74	−.02				
	Order	1.38	.17	.10				
	Peer coaching	8.89	.00	.48				
	Parent coaching	3.70	.00	.19				
Problem solving	*Model 1*				4.82	4, 296	.00	.06
	Sex	3.89	.00	.30				
	Race	−1.38	.17	−.12				
	Cyber-problem	1.18	.24	.09				
	Order	−.10	.92	−.01				
	Model 2				41.08	6, 296	.00	.45
	Sex	2.70	.01	.16				
	Race	−.08	.94	−.01				
	Cyber-problem	.09	.93	.01				
	Order	−.51	.61	−.03				
	Peer coaching	6.39	.00	.38				
	Parent coaching	5.38	.00	.30				
Retaliation	*Model 1*				9.18	4, 292	.00	.10
	Sex	−2.74	.01	−.23				
	Race	.56	.58	.05				
	Cyber-problem	5.61	.00	.47				
	Order	−.71	.48	−.06				
	Model 2				43.22	6, 292	.00	.47
	Sex	−.28	.78	−.02				
	Race	−.80	.42	−.06				
	Cyber-problem	2.89	.00	.20				
	Order	−1.88	.06	−.12				

Table 4 (continued)

Self-reported use of coping strategy		*t*	*p*	*β*	*F*	*df*	*p*	Adj. R^2
	Peer coaching	9.11	.00	.48				
	Parent coaching	4.30	.00	.30				
Social support-family/adult	*Model 1*				8.29	4, 297	.00	.09
	Sex	5.52	.00	.57				
	Race	−1.76	.08	−.20				
	Cyber-problem	−1.46	.15	−.16				
	Order	−.32	.75	−.03				
	Model 2				60.02	6, 297	.00	.55
	Sex	.67	.50	.05				
	Race	.18	.86	.02				
	Cyber-problem	−.28	.78	−.02				
	Order	−1.02	.31	−.08				
	Peer coaching	12.46	.00	.61				
	Parent coaching	1.72	.09	.08				
Social support-friend	*Model 1*				11.48	4, 290	.00	.13
	Sex	5.58	.00	.55				
	Race	−3.14	.00	−.34				
	Cyber-problem	1.03	.30	.10				
	Order	.93	.35	.09				
	Model 2				50.44	6, 290	.00	.51
	Sex	3.62	.00	.28				
	Race	−3.72	.00	−.30				
	Cyber-problem	.82	.42	.06				
	Order	−.10	.32	−.08				
	Peer coaching	8.25	.00	.48				
	Parent coaching	3.40	.00	.19				

Note. Sex = 0(male), 1(female); Race = 1(white), 2(minority); Cyber-problem = 0(never experienced), 1(experienced at least); Order = 0(friend survey then parent survey), 1(parent survey then friend survey)

and parent coaching ($\beta = .29$, $p < .05$) of retaliation, both positively predicted self-reported use of retaliation (Table 4). Peer coaching was more strongly related to one's own coping than parent coaching ($z = 2.08$, $p < .05$).

Social support-friend

In step one, the background variables accounted for 14% of the variance in the self-reported use of social support-friend, with sex and race significantly predicting self-reported use of social support-friend ($\beta = .56$, $p < .05$; $\beta = -.35$, $p < .05$). Being female is associated with higher self-reported use of social support-friend, while being a minority is associated with lower use of social support-friend. In step two, peer coaching of social support-friend and parent coaching of social support-friend accounted for an additional, and significant, 38% of the variance in self-reported use of social support-friend: peer coaching ($\beta = .47$, $p < .05$) and parent coaching ($\beta = .19$, $p < .05$) both positively predicted self-reported use of social support-friend (Table 4). Peer coaching was more strongly related to one's own coping than parent coaching ($z = 3.67$, $p < .05$).

Social support-family/adult

In step one, the background variables accounted for 10% of the variance in the self-reported use of social support-family/adult, with sex significantly positively predicting the self-reported use of social support-family/adult ($\beta = .57$, $p < .05$). Being female was associated with more use of social support-family/adult. In step two, peer coaching of social support-family/adult was a positive predictor of self-reported use of social support-family/adult ($\beta = .61$, $p < .05$) and accounted for an additional and significant 45% of the variance; however, parent coaching of social support-family/adult was not a significant predictor of self-reported use of social support-family/adult (Table 4).

In summary, the results of the hierarchical linear regressions indicated that there were significant main effects for both parent and peer coaching for all coping strategies

except social support-family/adult parent coaching. Post-hoc analyses comparing regression coefficients in equations predicting one's own coping strategy use from both parents' and peers' coaching of that strategy revealed that peer coaching was more strongly related to one's own coping than parent coaching for the following coping strategies: distraction, retaliation, and social support-friend.

Discussion

Cyber-victimization is a major problem facing adolescents today. It is important for adolescents to cope effectively with these events because of its prevalence and associated negative mental health and educational outcomes. While adolescents do use a variety of coping strategies both helpful (e.g., social support, problem solving) and unhelpful (e.g., distancing, retaliation), it is still unclear how adolescents learn to cope with these kinds of situations. The socialization of coping model (Kliewer et al. 1994) is one way to better understand those who coach these coping strategies and if adolescents are using the strategies that are coached to them. Our study attempts to fill this gap by investigating the role parents and peers play in coaching specific coping strategies, and if those strategies are then used by adolescents when coping with a cyber-victimization event.

This study first identified that 58% of our sample of 7th and 8th graders reported having experienced at least one cyber-victimization event in the last year. In 2012, the authors surveyed 7th and 8th graders at the same school using the same methodology and 54% of the 7th and 8th graders reported at least one instance of cyber-victimization (Bradbury et al. under review), suggesting that rates of cyber-victimization at the school have remained somewhat stable over time. These rates fall within the upper end of the range of cyber-victimization prevalence rates (24–56%) reported by other studies that use a similar cyber-victimization definition (e.g., Korchmaros et al. 2014; Roberto et al. 2014; Sontag et al. 2011). It is possible that a majority of the students at this school already had access to smartphones in 2012 and smartphone ownership at this school did not reflect the national average. We also did not ask adolescents to identify the devices that they use to access social media specifically. Therefore, adolescents may have endorsed cyber-victimization events that occurred through a device other than a smartphone (e.g., laptop, desktop, tablet), thus resulting in little increase in prevalence rates between 2012 and 2015. These rates suggest the common nature of electronic victimization and the need for interventions that can bring prevalence rates down given the potentially negative consequences of cyber-victimization (Fahy et al. 2016; Fletcher et al. 2014; Pabian and Vandebosch 2016b; Van Geel et al. 2014).

Consistent with past research, adolescent females in the current study tended to use significantly more distraction, problem solving, and social support friend and family strategies while males tended to use more retaliation strategies to cope with cyber-victimization (Bird and Harris 1990; Chan and Wong 2017; Connor-Smith et al. 2000; Silk et al. 2003). In addition, coping strategy selection for cyber-victimization stressors was largely unrelated to race, with the exception of social support. It is important for researchers to continue exploring demographic differences in coping with cyber-victimization given that there is little research investigating these differences. A richer understanding based on studies conducted with highly diverse populations will allow specific conclusions to be drawn in terms of race/ethnic propensities towards coping. We may also be able to identify mechanisms playing a role in minority coping strategy selection that are nuanced for cyber-victimization specifically.

It is notable that, in general, individuals who experienced a cyber-victimization event in the past year did not markedly differ in choice of coping strategies from those who did not report recent victimization. However, having experienced a cyber-victimization event in the past was associated with increased self-reported use of unhelpful coping (i.e., retaliation). Research suggests that when adolescents use retaliation as a coping strategy for cyber-victimization events it is associated with lower coping efficacy, suggesting that adolescents feel less positive about how they handled the situation and how the situation turned out (Bradbury et al. under review). The reliance on unhelpful coping likely creates a cycle of re-victimization.

The study also began to address an area of the literature still needing attention -- from whom adolescents learn these cyber-victimization coping strategies. Results of the current study show that adolescents' perceptions of parent and peer socialization predicts adolescent use of all coping strategies except parent socialization of social support-family/adult. We suspect that adolescents do not use social support from family or other adults when it is coached by parents because of the potential perceived consequences of talking to a parent or adult when a cyber-problem occurs (see Agatston et al. 2007; Li 2007). Research on in-person and cyber-victimization suggest that adolescents who are victimized often have strained relationships with their parents, making communication difficult (Bjereld et al. 2017; Larrañaga et al. 2016). Other reasons adolescents may not go to parents or other adults for help with cyber-problems may include: they did not want to bother their parents, they felt that talking to their teacher wasn't always useful, and that it is their own problem so they should solve it on their own (Jacobs et al. 2015). However, adolescents tend to feel better about the outcome when they do seek out social

support from family/adults (Bradbury et al. under review) among other positive coping strategies.

Peer coaching was more strongly related to one's own coping than parent socialization for distraction, retaliation, and social support-friend. During this stage of development (early adolescence), there begins a significant decline in adolescents' perceptions of parental legitimacy and obligation to obey parental suggestions (Darling et al. 2008), thus possibly leading to less compliance with parental suggestions and coaching and more reliance on their peers for support (Collins et al. 2006; Furman and Buhrmester 1992). This pattern is consistent with a longitudinal study investigating socialization of emotion regulation strategies among best friends where best friends' adaptive strategies positively affected adolescents' adaptive strategies (Reindl et al. 2016). Still, it is important to stress that *both* parent and adolescent coaching positively relate to predicting adolescents' use of coping. Research exploring adolescent receptivity found that parent emotional climate moderated the interaction between coaching and adolescent receptivity suggesting that parents, indeed, still have influence over their adolescents' behaviors and choices during adolescence (Gregson et al. 2015) despite the growing influence of peers at this developmental stage.

Limitations and Future Directions

Our findings should be considered in the context of several limitations. First, due to confidentiality concerns about adolescents identifying and reporting on peers, we were unable to assess peer reports of how they coach a friend to cope with cyber-victimization. Being able to question peers about the strategies they suggest to their friends would have allowed us to identify associations that existed between self-reported coaching of coping strategies by peers and actual peers' reports of how they socialize their friends to cope with cyber-victimization. Therefore, researchers may consider collecting data from multiple sources in future data collection. Second, we did not have adolescents generate their own cyber-victimization situations; rather adolescents were provided with a list of common victimization situations used in Bradbury et al. (under review). However, the listed cyber-victimization problems are quite common in the literature, so we can be reasonably confident the situations are a good representation of the most frequent ones that adolescents are experiencing. Third, the study design required adolescents to recall events that happened to them in the past year, and report on their coping retrospectively. Because this can introduce biases (e.g., reports of coping could be colored by the way the problem turned out), another option would be to design a longitudinal study that would examine how adolescents cope immediately after encountering a specific cyber-stressor through ecological momentary assessment (EMA).

Given the co-occurrence of both peer and parent coaching, it may be helpful for future research to examine how both types of socialization interact with one another and work together. In addition, further information about the efficacy of parent socialization may come from evaluations of the parenting-adolescent relationship (e.g., context, quality of communication, involvement, structure) and how that dynamic affects what coached strategies adolescents choose to use when coping with cyber-stressors. For example, adolescents may respond in a more positive way to parents' suggestions about coping when parents are able to encourage their adolescents to form their own opinions and beliefs about cyber-situations to help scaffold their ability to work through the problems on their own (see Steinberg 1990). This type of parenting, particularly with adolescents, creates a sense that parents trust their adolescents and are confident that they are able to come up with their own positive and successful strategies to manage specific adolescent stressors, creating a stronger and more positive adolescent-parent relationship.

Implications

The present study may have several practical implications for the implementation of prevention programs designed to help adolescents effectively cope with cyber-victimization stressors. First, it is important for school personnel to know that females are at increased risk for experiencing a cyber-victimization event compared to males. Second, because cyber-victimization is not as visible as in-person victimization, it is important for adults to be vigilant and ask questions when there is a possibility of online victimization, to help identify problematic situations. Third, given that peers are more influential than parents in socializing youth on how to cope with cyber-victimization, it will likely be helpful for interventions to strategically include members of peer groups. Interventions could focus on teaching peers how to be "good" coaches and which strategies should be encouraged and why. Educating potential peer mentors on why they should coach certain strategies may help adolescents understand the benefits of coaching specific strategies (e.g., social support vs. retaliation). Cyber and in-person peer-led interventions have shown promising results as shown in an evaluation study on the No Trap! program (Palladino et al. 2016). Their research showed a decrease in bullying, victimization, and cyber-victimization for those students in the experimental group (i.e., received the peer-led intervention) compared to those in the control group (i.e., no intervention). In addition, there was also a significant increase in the utilization of problem solving and a significant decrease in the utilization of avoidance for those

students in the experimental group. Parents are also important to include in intervention programs as they, too, influence adolescent coping. A primary focus should be on helping adolescents and parents engage in positive and effective communication to ensure that adolescents understand what coping strategies their parents are socializing them to use. Fourth, to increase the likelihood that adolescents will seek adult support when necessary, interventionists should highlight that cyber-victimization is not necessarily a situation that can be handled without adult assistance, hopefully modifying adolescents' thoughts that they can handle these situations on their own.

Conclusion

Adolescence is a developmental period that can bring many challenges. One of those challenges includes managing electronically-based interactions with peers. While many of those interactions will be positive, negative electronic interactions are common. With greater vulnerability to cyber-victimization, it is important to better understand how adolescents cope with such situations and who is coaching them to cope (i.e., socialization of coping). This study gives deeper insight into the types of cyber-victimization coping strategies that adolescents report using and the influence parents and peers have on adolescent coping with such stressors. Our findings highlight the importance of including key socializers in cyber-victimization intervention programs. The evidence obtained from this study suggests that both peers and parents are key socializers; however, peer coaching may be more strongly related to adolescent coping. Our results may also be of significance to school staff, faculty, and parents to be vigilant about the types of coping strategies that students with a history of cyber-victimization are using. Our results may be informative in bringing awareness cyber-victimized students' increased likelihood of relying on less effective strategies such as retaliation. This kind of vigilance may help stop the cycle of re-victimization by encouraging cyber-victimized adolescents to use other, more helpful, coping strategies (e.g., social support, problem solving). Our study highlights ways in which peers, parents, and academic faculty and staff can support effective adolescent coping in order to decrease the negative effects that cyber-victimization can have on youth, and increase adolescents' ability to successfully navigate online social interactions.

Authors' Contributions S.B. conceived of the study, participated in its design and data collection, performed statistical analyses, interpreted data, and engaged in and coordinated and drafted the manuscript; E.D. assisted in the conception of the study, participated in the design, statistical analyses, interpretation of the data, and participated in the drafting of the manuscript; S.D. participated in statistical analyses, data interpretation, and helped to draft the manuscript. All authors read and approved the final manuscript.

Data Sharing Declaration The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research. This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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