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Correlates of mono- and dual-victims of cybergrooming and cyberbullying:

Evidence from four countries

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Abstract

Today's adolescents grow up using information and communication technologies as an integral part of their everyday life. This affords them with extensive opportunities, but also exposes them to online risks, such as cybergrooming and cyberbullying victimisation. The aims of this study were to investigate correlates of cybergrooming and cyberbullying victimisation and to examine whether victims of both cybergrooming *and* cyberbullying (dual-cybervictims) show higher involvement in compulsive Internet use (CIU) and troubled offline behaviour (TOB) as compared to victims of *either* cybergrooming *or* cyberbullying (mono-cybervictims). The sample consisted of 2,042 Dutch, German, Thai, and U.S. adolescents (age=11-17 years; *M*=14.2; SD=1.4). About every ninth adolescent (10.9%) reported either mono- or dual-cybervictimisation. Second, both CIU and TOB were associated with all three types of cybervictimisation, and finally, both CIU and TOB were more strongly linked to dual-cybervictimisation than to both forms of mono-cybervictimisation. These findings contribute to a better understanding of the associations between different forms of cybervictimisation and psychological health and behaviour problems among adolescents.

Introduction

Research consistently documents how the globally pervasive use of information and communication technologies (ICT) among youth.[1,2] This affords both extensive opportunities, but also exposes them to sexual and aggressive online risks, including cybergrooming and abuse as well as the potential extension of school bullying into the online environment. However, while the research interest in cybervictimisation has grown over the past decade, most work has focused on individual forms of either aggressive or sexual cybervictimisation. Hence, it has failed often to simultaneously consider different forms of cybervictimisation. Therefore, the aim of this research was to consider similarities and differences in mono- and dual-victims of cybergrooming and cyberbullying, with a goal of contributing to the development of more comprehensive prevention measures to protect youth.

Dual-Victimisation through Cybergrooming and Cyberbullying

Cybergrooming (or online grooming) can be defined as "establishing a trust-based relationship between minors and usually adults using ICTs to systematically solicit and exploit the minors for sexual purposes" ([3], p. 628). The process can include one or several of the following: flattery, force, threats, bribery and sexualisation.[4–7] The heterogeneity of offenders and victims should, however, not be overlooked, and thus the process of cybergrooming can vary considerably.[8–11] Cyberbullying has been defined as any repeated aggressive behaviour performed through ICT against a person that cannot readily defend him- or herself.[12] Although cybergrooming and cyberbullying are two different online risks, a potential similarity includes the overlap of victims.

Theoretically, two main processes can be discussed to explain dual-victimisation through cybergrooming and cyberbullying. Firstly, the flag approach stipulates that some victims are more attractive than others, and accordingly, are at greater risk. They have 'flags' that signal their attractiveness and/or vulnerability to potential cybergroomers and

cyberbullies and are consequently easily victimised.[13] Secondly, the boost approach claims

that outcomes from one kind of victimisation might boost the risk for further victimisation.[13]

For example, victims of cybergrooming and abuse might display sexualised behaviour online

(e.g., posting specific texts, pictures or videos online) as a consequence of the abuse, which

may increase the risk of cyberbullying, further cybergrooming or online abuse. Finally,

victims of cybergrooming might develop a generalised victim status characterised by loss of

self-worth and increased self-blame, and therefore, do not intervene or seek help when facing

further victimisation. Indeed, recent findings indicate associations between cybergrooming

and cyberbullying victimisation in adolescents.[3,14,15]

Investigating adolescents who experience dual-victimisation (or poly-victimisation

when more than two forms of victimisation are experienced) is pertinent since research

suggests that the experience of more than one kind of victimisation can lead to more harmful

victim consequences than a single form of victimisation.[16–18] For example, dual-victimisation

can include victimisation by different people (peers/adults) in different settings

(home/school), which reduces the likelihood of having support and increases the chances of

viewing the world as inherently dangerous.[19] As each subsequent victimisation occurs, it

increases the likelihood that a person will internalise negative messages about their self-

worth, value to others, and cognitive distortions about why others may want to abuse them.

Therefore, the greater the number of perpetrators, the harder it is to externally locate the

blame with the offender, and the easier it is to place blame on oneself.

Online and Offline Correlates of Cybervictimisation

Research to date has identified a number of factors that correlate with single forms of

cybervictimisation, including compulsive internet use, troubled behaviours offline (e.g., binge

drinking, truancy), and socio-demographic factors. For example, most research currently

indicates that adolescents, compared to children or adults, experience greater risk of

cybergrooming and cyberbullying victimisation,[6,20–22] with girls being at elevated risk of cybergrooming.[3,15,21,23,24] However, boys are often underrepresented in prevalence estimates due to lower disclosure rates.[25] Results of gender differences in cyberbullying are mixed, with some showing higher prevalence for girls,[26,27] boys[28] or no difference.[29]

In terms of cultural variations, the study of *cybergrooming* in Western countries remains in its infancy, and the evidence from Asian countries is even more limited. Since South-East Asia (e.g., Thailand, Cambodia) has become associated with 'sex tourism,' it is reasonable to consider the extent to which cybergrooming is an issue among adolescents in these regions[30] as well as others.[31] The situation is very similar for *cyberbullying,* with limited research in South-East Asian countries.[32] Yet, cyberbullying seems to be an emergent issue among Asian countries,[14,22] and therefore, there is a great need for studies that investigate cyberbullying in adolescents from these regions.[33]

Compulsive Internet Use. Compulsive Internet Use (CIU) can be defined as a behavioural addiction and can include: a user experiencing unpleasant emotions when Internet use is impossible; continuing to stay online despite intentions to stop; use as a means of escaping negative feelings; use dominates feelings and behaviours; and use results in conflict.[34] In terms of vulnerability for cybervictimisation, however, this increased use of the internet provides potential cybergroomers and cyberbullies increased opportunities for contact.[20,35] It also reduces the opportunity for building an offline peer network or of being socially connected.[36,37] Hence prioritising online life can *decrease protective* factors through conflicts within offline relationships (increasing social isolation and a reduction in social support) and *increase* risk factors, such as vulnerability to attention from strangers online.[11] Notably, compulsive internet users often find it easier to make friends and relate to others online[38] which can make them more vulnerable to both cybergroomers and cyberbullies who fake personal interest and friendship.

Initial research suggest that higher levels of Internet use are associated with cybergrooming victimisation.[3,20] However, high levels of internet use is only one aspect of CIU. Research addressing further aspects of CIU (e.g., intra- and interpersonal conflicts due to CIU), is non-existent. In cyberbullying research, findings concerning associations between CIU and cyberbullying victimisation are inconclusive. Some studies suggest no association,[39,40] whilst others do.[26,41,42]

Troubled Offline Behaviour. Another possible correlate of cybergrooming and cyberbullying victimisation might be troubled offline behaviour (TOB). There is some evidence to suggest that getting into trouble at school with teachers, truancy and alcohol consumption, may all be correlates of cybergrooming[43–45] and cyberbullying victimisation.[22,27,46,47]

Such troubled behaviour may lead to adolescents being stigmatised as problematic,[48] socially isolated from teachers and peers at school, and vulnerable to both offline and cybervictimisation. Hence, whilst initial TOB often results from victimisation, it can also further increase risk of victimisation. For example, results from an interview study suggest that the associations between problems in schools with teachers and cybergrooming,[49] whilst other research has shown cyberbullying victims have higher levels of TOB, including difficulties with teacher.[50] This latter may occur because victims of cyberbullying are often also victims of school bullying; emotional reactions during school time may be misinterpreted by teachers and classmates as unjustified aggressive behaviour.[51]

Cybergrooming victims reported low school satisfaction and frequent truanting,[52] but it is unclear whether it is cause or effect. Truant adolescents might be at increased *risk* of cybergrooming victimisation due to fewer possibilities to communicate with peers, but truancy can also be a *consequence* following cybergrooming and abuse. Similarly, victims of cyberbullying are often also victims of school bullying, which may lead to increased school

avoidance; thus, some research has shown an association with cyberbullying victimisation.[26,53]

Whilst research has linked substances abuse to cybergrooming[20,49] and cyberbullying victimisation,[41,47,50] again whether it is initial risk of, consequence from or both, remains to be seen. Binge drinking impairs vigilance, self-control, and the ability of self-defence and risk assessment, all of which can increase vulnerability to cybergroomers and cyberbullies. In addition, both cybergrooming and cyberbullying victimisation can lead to high distress, emotional and behavioural disorders. Hence, substance abuse can be a form of self-medication or negative coping mechanism. It is important to note, however, that (as with the impact of the abuse) there is likely to be a cumulative effect by risk factors.[17] For example, in the Optimus Study boys with little Internet use, no prior victimisation, and no drug use had a cybervictimisation risk of 6%, compared to 64.1% for girls with high internet use, previous victimisation, and substance use.[20]

In summary, the ability to identify adolescents at risk of mono- or dual-cybervictimisation may have valuable implications for prevention and educational campaigns. Only a few studies have simultaneously considered sexual and aggressive cybervictimisation, and it remains unclear whether there are different risk factors for, and correlates with, mono- and dual-cybervictimisation. Furthermore, cross-cultural studies remain limited. Therefore, the aims of this study were (1) to investigate correlates of cybergrooming and cyberbullying victimisation in a cross-national sample; and (2) to examine whether dual-victims show higher involvement in CIU and TOB compared with mono-cybervictims. In all analyses, age, sex, and country of origin were included as control variables.

More specifically, it was hypothesised that:

H1: Compared with non-cybervictimised adolescents, adolescents who are victims of

cybergrooming, cyberbullying or both will report

- higher rates of CIU

- higher engagement in TOB

H2: Compared with mono-cybervictims (i.e., cybergrooming or cyberbullying alone), dual-

cybervictims will report

- higher rates of CIU

- higher engagement in TOB

Methods

Participants

The study sample included 2,042 Dutch, German, Thai, and U.S. adolescents (age 11-

17 years, M=14.2, SD=1.4). Table 1 reports demographic characteristics of the participants,

with breakdowns by age, sex and country.[1] Despite the fact that sexual consent may be at age

16 in a number of the study countries, due to the known vulnerability of adolescents between

the ages of 16 and 17 years and the fact that they are legally minors, we decided to retain

these youth in the final study sample.

 [TABLE 1]

Procedure

The study received ethical permission from the data protection officer and educational

authority of the federal state of Lower Saxony, Germany (R.24-0541/2N) as well as

University Institutional Review Board approval (13-0962-P4J) in the United States.

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[1] This sample has been used in two studies before. In one study (Wachs, Jiskrova Ksinan, Vazsonyi, Wolf & Junger, 2016), it was investigated if the association between cybergrooming and cyberbullying victimisation is mediated by low self-esteem. In the other study (Wachs, Junger & Sittichai, 2015), associations between risky offline and online activities and traditional and cyber bullying were investigated.

Schools were approached. When schools consented to participate, written information was sent to parents via the students and multiple school announcements were made. Parents then had the option to opt their child from the study by contacting the school or the researchers prior to administration. Students who had parental approval also completed an informed assent process prior to completing the anonymous survey. Adolescents were informed that participation was optional, they could choose not to answer questions, and that participation could be stopped at any time without giving a reason and with no consequence. In total, about 95% of eligible students participated in the study. Data were collected over a three-month period in 2013 via an online survey using school computers (Germany and the Netherlands) or paper-pencil-questionnaires (Thailand and the U.S.), which took approximately 30-45 minutes.

Measures

Dependent measures

Cybergrooming Victimisation. Participants were given a definition of cybergrooming taken from an earlier study,[3] which describes cybergrooming as repeated online contact with an older person who is interested in sexual topics and in the exchange of sexual fantasies and/or nude material. Participants were then asked '*How many times did you have contact with a cybergroomer in the last twelve months?*', with responses on a five-point ordinal scale ('*Never*', '*Once or twice*', '*Two or three times a month*', '*About once a week*' or '*Several times a week*').

Cyberbullying Victimisation. Participants were given a definition of cyberbullying that considered ICT use, intention to hurt, imbalance of power and repetition of attacks, then asked four related items such as *'How many times has someone sent you threats, defamations or other aggravating messages via the Internet/cell phone in the last twelve months?'*.[54]

Response options were as for cybergrooming. Reliabilities were acceptable, (α=.72; N=2,042), Western (α=.72; N=1,439), and South-East Asian (α=.72; N=600).

Independent Measures

Compulsive Internet Use. This was assessed using the Internet-Related Experiences Questionnaire,[38] a 10-item scale. Items include '*Do you get angry or irritated when someone distracts you while you are connected?*' (*never/rarely/sometimes/often)*. The reliabilities were good, total sample (*α=.81*; *N*=2,042), Western (α=.83; *N*=1431), South-East Asian (α=.80; *N*=600). A high score showed high CIU.

Troubled Offline Behaviour. One item for trouble with teachers, school refusal and binge drinking were adapted from HBSC-Study;[55] such as '*Been in trouble with my teacher for bad behaviour' (never/sometimes/often*). The reliabilities were acceptable, total sample (*α=.65*; *N*=2,014), Western (α=.67; *N*=1414), South-East Asian (α=.74; *N*=600). In order to disprove unequal weighting of the three items a Principal Component Analysis was carried out and revealed that an unequal weighting of the individual items was not indicated.

Treatment of Data

To categorise victims of cyberbullying, a lower-bound cut-off point of at least '*two or three times a month'* was used, as recommended to identify cyberbullying victims.[12] In cybergrooming research, there is currently neither a validated instrument nor validated information about the most appropriate means of measurement. Hence, the same cut-off criterion for cybergrooming was applied.

The cyberbullying and cybergrooming variables were recoded into one multinomial variable with four mutually distinctive groups:

    a) Cybergrooming mono-victims: scored '*two or three times a month'* or more on the cybergrooming variable only

b) Cyberbullying mono-victims: scored '*two or three times a month*' or more for cyberbullying only

c) Dual-cybervictims: scored '*two or three times a month*' or more on both variables

d) Non-cybervictimised: scored less than '*two or three times a month*' on both variables.

Due to the categorical nature of the dependent variable, multinomial logistic regression models were estimated. A correlation analysis indicated that multicollinearity was not a concern with respect to the independent variables used in this analysis. Due to the non-independence of the data, confidence intervals were calculated for the parameter estimates using bootstrapping. In the present study, 1,000 bootstrapping samples were selected using 95% confidence intervals

Results

Using the stringent criteria (*two or three times a month),* 5.8% (n=118) of participants could be classified as cybergrooming mono-victims, 3.9% (n=79) as cyberbullying mono-victims, 1.2% (n=25) as dual cybervictims and 89.1% (n=1,811) non-cybervictimised. Overall, 10.9% (n=222) of participants were affected by some kind of cybervictimisation.

Table 2 includes descriptive statistics as well as correlations of the main study variables, broken down by Western and South-East Asian participants.

[TABLE 2]

As Table 3 illustrates, there were statistically significant correlates of cybergrooming, cyberbullying or both. The model was significant (Log likelihood (null)=891.36; LR (full)=586.17; LR χ^2=627.12, df=15, *p*≤0.001, Nagelkerke's R^2=0.210).

Cybergrooming Mono-Victims. CIU (*B*=0.413, p=0.013), TOB (*B* =0.691, p≤0.001), and nationality defined as South-East Asian/Thai versus Western participants were

significant. CIU increased the odds of cybergrooming mono-victimisation by 1.51 times (OR=1.51 CI 95%[1.09–2.09]), while TOB by 1.99 times (OR=1.99 CI 95%[1.35–2.94]); Western youth showed lowered odds of cybergromming mono-victimisation (OR=0.080 CI 95%[0.049–0.133]. No statistically significant associations were found with age and sex (Table 3).

Cyberbullying Mono-Victims. Both CIU and TOB were significant predictors of cyberbullying mono-victimisation (*B*=0.512, p=0.007; *B*=0.991, p≤0.001, respectively). CIU increased the odds of cyberbullying mono-victimisation by 1.66 (OR=1.66 CI 95% [1.14–2.42]), and TOB by 2.74 (OR=2.74 CI 95% [1.84–4.08]). Age was negatively associated and decreased the odds of victimisation (OR=0.847 CI 95%[0.715–0.998]); also, boys were less likely compared to girls to be a victim (OR=0.575 CI 95%[0.350–0.943]). No significant associations were found for nationality (Table 3).

Dual-Cybervictims. CIU significantly predicted dual-cybervictimisation (*B*=1.65, p≤0.001), with increased odds of 5.25 (OR=5.25 CI 95% [2.50–11]). TOB was also associated with dual-cybervictimisation (*B*=1.74, p≤0.001), with increased odds of 5.69 (OR=5.69 CI 95% [2.98–10.86]); Western participants had 0.234 *lower* odds of being dual-cybervictims (OR=0.234 CI 95% [0.094–0.580]). No significant associations were found for age or sex (Table 3).

[TABLE 3]

Discussion

This study investigated correlates of cybergrooming and cyberbullying victimisation among adolescents from four countries. Notably, approximately one in nine adolescents (10.9%) reported either mono- or dual-cybervictimisation. Therefore, cybervictimisation is a prevalent issue among adolescents. Interestingly, reports of cybergrooming mono-

victimisation were higher, suggesting that more research on this topic is needed.

A second finding was that both CIU and TOB were associated with all three forms of cybervictimisation, which provided support for the first hypothesis; both CIU and TOB positively predicted victimised adolescents. These results extend our knowledge on correlates of cybergrooming and are largely consistent with previous evidence on cyberbullying. [3,14,15,26,41,42,46,47,49,52,53] Since mutually exclusive groups were used, this finding also indicates that both cybergrooming and cyberbullying share common correlates.

A third finding was that CIU and TOB were more strongly linked to dual-victimisation than mono-victimisation, raising awareness for dual-cybervictims as a special risk group. This finding supports the second hypothesis that, as compared to mono-cybervictims, adolescents who were identified as dual-cybervictims reported both higher CIU and TOB. Therefore, as has been found in offline poly-victimisation studies, increased cybervictimisation experiences appear to be associated with increased emotional and behavioural problems. [16–18]

There were several limitations requiring some discussion. The cross-sectional nature of the survey limits the ability to draw any causal conclusions; it does also not permit an understanding of the temporal ordering of the main study constructs. Cybergrooming is a complex phenomenon that, when conducted 'successfully,' is hard to observe. In many cases, even after the perpetrator has been convicted, the victim fails to recognise the manipulation and misuse of power, continuing to believe in the existence of a romantic relationship. [52] These circumstances make it hard to identify cybergrooming victims in research. In the present study, a quantitative approach was used to provide an overview, but it is acknowledged that cybergrooming is a complex phenomenon, and the definition used might not capture all instances of cybergrooming. In addition, self-reports rely on the individual recognising that they have been cybergroomed.

The current study was novel in its efforts to uncover psychological and behavioural problems associated with dual-victimisation in comparison with mono-victimisation through cybergrooming or cyberbullying. Whilst controversial in some ways, providing a definition of cybergrooming and cyberbullying to participants does have the potential to increase response validity. Similarly, the strict cut-off removes one-off cases, which may create some issues (e.g., loss of severe one-off incidents), but does increase the likelihood of including clearer, repetitive cases of cybergrooming or cyberbullying.

Finally, although the group of dual-cybervictims is small compared with either group of mono-cybervictims in this study, the strong association with CIU and TOB *across cultures* indicates the need to focus on dual-victimisation more intensively. Thus, this could be extended to consider distinguishing factors both online and offline.

Implications

The findings of the present study have important implications for practice. Firstly, since cybervictimisation is highly prevalent among adolescents and associated with behavioural difficulties, it is important to inform and educate adolescents about possible risks. This includes emphasising the benefits of offline activities and engagement with peers. It is interesting to note that the American Academy of Paediatrics makes no precise recommendation about screen time for school-aged children, but suggests to balance ICT use with other healthy offline activities.[56] Making these guidelines and their rationale more explicit might encourage parents to set realistic limits for screen time and feel enabled to enforce them.

Approaches to protection must acknowledge the positives of ICT use, but simultaneously argue for balance so that technology is used in a responsible, appropriate way. As in daily life, it is not possible to protect children and young people from every risk – but it is possible to try to equip them with the age-appropriate information they need to make

sensible, informed choices about their internet use. These approaches must also feed into

educational settings, where the use of screen time is becoming more prevalent across the

entire curriculum. Thus, education for parents and teachers should focus on the balance

between allowing children freedom and exercising age-appropriate parental/teacher guidance

and monitoring, as early research is indicating that that is a crucial factor in keeping children

safe online

Author Disclosure Statement

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Table 1

Frequencies of background variables (N = 2,042).

Variable	*Frequencies* (%)
11 – 12	272 (13.3)
13	412 (20.2)
14	429 (21.0)
15	485 (23.8)
16	278 (13.6)
17	166 (8.1)
Sex	
Girls	1096 (53.7)
Boys	946 (46.3)
Nationality	
Western	1442 (70.6)
American	224 (11.0)
Dutch	371 (18.2)
German	847 (41.4)
South-East Asian	
Thai	600 (29.4)

Table 2

Descriptive statistics and correlations of study variables.

	1.	2.	3.	4.	5.	6.	Total M (SD)	Western M (SD)	South-East Asian M (SD)
1. Age		.004	.057*	.040	.103**	.257**	14.27 (1.49)	14.17 (1.38)	14.50 (1.70)
2. Sex	.037		.093**	.089**	.087**	-.083**	1.54 (0.49)	1.49 (0.50)	1.66 (0.47)
3. Cyberbullying	-.084*	-.086*		.356**	.200**	.234**	1.35 (0.64)	1.34 (0.65)	1.36 (0.65)
4. Cybergrooming	-.023	-.091*	.194**		.102**	.165**	1.32 (0.83)	1.15 (0.52)	1.74 (1.19)
5. CIU	.169**	.070	.193**	.140**		.227**	2.23 (0.66)	2.18 (0.64)	2.41 (0.63)
6. TOB	.198**	-.130**	.132**	.095*	.189**		1.23 (0.50)	1.32 (0.52)	1.21 (0.44)

Note. Correlations below the diagonal are for South-East Asian participants, above for Western ones. * p < .05 ** p < .01

Table 3

Correlates of being victimised through cybergrooming, cyberbullying or both.

		B [*]	SE	p	Exp (B)	CI 95%	
						Lower	Upper
Cybergrooming-Victim [a]	*Intercept*	-3.12 [-4.99 – -1.96]	0.956	0.001			
(n=118)	CIU	0.413 [0.140 – 0.786]	0.166	0.013	1.51	1.09	2.09
	TOB	0.691 [0.376 – 1.09]	0.199	0.001	1.99	1.35	2.94
	Age	-0.024 [-0.110 – 0.083]	0.064	0.701	.976	0.862	1.10
	Being a boy [b]	0.048 [-0.401 – 0.503]	0.211	0.818	1.05	0.694	1.58
	Western [c]	-2.52 [-3.07 – -2.12]	0.256	0.000	0.080	0.049	0.133
Cyberbullying-Victim [a]	*Intercept*	-3.23 [-6.06 – -0.894]	1.28	0.012			
(n=79)	CIU	0.512 [0.107 - 0.858]	0.190	0.007	1.66	1.14	2.42
	TOB	0.991 [0.639 – 1.31]	0.203	0.000	2.74	1.84	4.08
	Age	-0.167 [-0.330 – -0.016]	0.087	0.001	0.847	0.715	0.998
	Being a boy [b]	-0.554 [-1.07 – -0.048]	0.252	0.028	0.575	0.350	0.943

	Western [c]	0.113 [-0.398 – 0.779]	0.290	0.696	1.12	0.635	1.97
Dual-Cybervictim [a]	*Intercept*	-9.19	2.49	0.000			
(n=25)	CIU	1.65 [0.749 – 2.60]	0.377	0.000	5.25	2.50	11
	TOB	1.74 [0.916 – 2.61]	0.329	0.000	5.69	2.98	10.86
	Age	-0.111 [-0.477 – 0.096]	0.154	0.471	0.895	0.661	1.21
	Being a boy [b]	0.539 [-0.581 – 1.39]	0.448	0.229	1.71	0.713	4.12
	Western [c]	-1.45 [-2.65 – -0.330]	0.463	0.002	0.234	0.094	0.580

Note. Reference categories: [a] non-cybervictimised (n=1,811) [b] being a girl, [c] being a South-East Asian participant. * BCa bootstrap confidence intervals based on 1,000 samples.