

Victimization and Exposure to Pro-Self-Harm and Pro-Suicide Websites: A Cross-National Study

The study of websites displaying methods of both physical self-harm and suicide has become an important aspect of deliberate self-injury and suicide research. Risk factors of websites are central to the focus of much of the past research, though the potential for support and enhanced self-help online has also been highlighted (Haw, Hawton, Niedzwiedz, & Platt, 2013; Gilat, Tobin, & Shahar, 2011; Daine et al., 2013). However, little attention has been directed at factors linked to entering pro-self-harm and pro-suicide sites. The present study focused on the association between victimization and exposure to pro-self-harm and pro-suicide websites, namely sites that include ways of physical self-harm and committing suicide.

Current research indicates that previous offline victimization might precede both self-harm and suicidal behavior among internet users. Notably, being a victim of offline violence has been shown to be a precursor to suicide attempts in adolescence (Evans, Marte, Betts, & Silliman, 2001; Liang, Flisher & Chalton, 2003). In addition, a wealth of research has established the association between peer victimization at school and detrimental outcomes in young adulthood, including self-harm (De Leo & Heller, 2004; O'Connor, Rasmussen, & Hawton, 2009) and suicide risk (Hinduja & Patchin, 2010; Kaminski & Fang, 2009; Klomek et al., 2009). Furthermore, victimization in intimate relationships has been shown to be a risk factor, particularly for females in predicting bodily self-harm (Sansone, Chu, & Wiederman, 2007) and suicidal ideation and attempts (Howard & Wang, 2003).

Social media and the other interactive communication possibilities of the Internet have created a potential channel for online harassment and bullying whose effects on psychiatric and psychosomatic health, especially among adolescents and young adults, has raised concerns (Brack & Caltabiano, 2014; Hinduja & Patchin, 2010; Sourander et al., 2010).

Current research indicates that victims of cyberbullying are more likely to deliberately self-harm and have a greater risk for suicidal ideation and attempts (Hinduja & Patchin, 2010; Messias, Kindrick, & Castro, 2014; Schenk & Fremouw, 2012). Additionally, victimization online is related to depressive symptoms among youth (Ybarra, 2004). Furthermore, victims of Internet harassment are more prone to be victimized in other contexts as well (Ybarra, Mitchell, Wolak, & Finkelhor, 2006).

Although a large body of literature has identified victimization as a significant risk factor of self-harm and suicidal behavior among young people in a variety of contexts, little information is available concerning the association between victimization and online self-harm and suicidal behavior. Noll and colleagues (2013) found that prior maltreatment exposed adolescent girls to high-risk behaviors online, such as looking at sexually explicit content and provocative social profiles, and entertaining online sexual proposals. Moreover, Harris and colleagues (2009) found that those who went online for suicide-related purposes were more likely to be unemployed, live alone, have a lower education, spend more time online, reported greater history of psychiatric diagnosis and institutionalization, were less likely to seek help and perceived less social support in comparison to online users without suicidal online behavior.

Benefits of social belonging have been recognized widely in empirical research on well-being (Baumeister & Leary, 1995). Social belonging here refers to experiencing acceptance and inclusion by other group members, while a low sense of belonging emerges from alienation from others in a valued group such as family and friends (Joiner, Van Orden, Witte et al., 2009). Joiner's (2005) interpersonal-psychological theory of suicidal behavior suggests that thwarted belongingness is a precursor in suicidal ideation (You, Van Orden, & Conner, 2011). Moreover, previous research has found that suicide-related online users reported less support from family and friends compared to other online users (Harris,

McLean, & Sheffield, 2009). Thus, we presume that a higher level of belonging to primary groups could shield young people against pro-self-harm and pro-suicide site exposure.

Given previous research, we also controlled self-esteem in the analysis. Self-esteem is one of main personal factors contributing to the general subjective well-being of individuals. It has been associated with depression and other psychological problems (Orth & Robins, 2013; Sowislo & Orth, 2013; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Previous studies have indicated an adverse link between self-esteem and deliberate self-harm (O'Connor et al., 2009; Plutchik, Botsis, & Van Praag, 1995; Rotolone & Martin, 2012). Furthermore, low self-esteem has been associated with suicidal behavior among suicide attempters (Dieserud, Roysamb, Ekeberg, & Kraft, 2001). We hypothesize that low self-esteem could form a psychological risk factor with entering pro-self-harm and pro-suicide sites.

To summarize, our study was based on following two research questions: *Does being a victim of violence and online victimization correlate with exposure to pro-self-harm and pro-suicide websites? Is the association of victimization different among those individuals who had been exposed to either pro-self-harm or pro-suicide sites and those who had been exposed to both of them?*

Method

Participants

The participants of the present cross-sectional survey were aged 15 to 30 years from the US, UK, Germany, and Finland. The selection of participants was balanced using key socio-demographic variables (e.g. age, gender) and geographical areas in each of the four countries. (see Lorch, 2012; “blinded”). The survey was a computer-based questionnaire that took approximately 10 minutes to fill out. The survey was carried out on both computers and mobile devices and was tested before data collection in each country. Participation in the

survey was voluntary and respondents were not paid for their participation. The total number of participants was 3,567. However, we included only complete questionnaires as part of the variables of victims of violence and online victimization in the statistical analysis. Thus, the present study included 3,513 respondents: 1,002 from the US (49.8% men), 999 from the UK (51.0% men), 978 from German (49.9% men), and 534 from Finland (50.0% men). The mean age of the respondents in the final sample was 24.12, 23.18, 23.20, and 23.68, respectively. There were no missing values in any variable analyzed in the multinomial logistic regression analyses.

Measures

Pro-self-harm and pro-suicide site exposure was answered by two-option questions formulated in the following manner: 'In the past 12 months, have you seen any of the following types of websites? 1. Sites about ways of physically harming or hurting yourself? 2. Sites about ways of committing suicide?'. Yes was coded as 1, no as 0. Descriptive statistics for the variables by country can be viewed in Table 1.

Violence and online victimization experiences were asked with multi-option questions and subsequently dichotomized for further analysis. The measurement of prior offline violence victimization was comprised of three items with two options (yes/no): 'In the past three years, has someone bumped into you or touched you in a way that felt insulting to you? / has someone you did not know attacked or threatened you in a way that really scared you? / has someone you knew attacked or threatened you in a way that really scared you?'. The composite variable was dichotomized, with 1 indicating that the respondent had confronted violence in at least one way in the past three years and 0 indicating that the respondent had no such experiences (Vuori, Oksanen, & Räsänen, 2013). Online victimization was asked with two questions: 'The following statements are about the targeting of hateful or degrading material online. Please answer yes or no based on your experiences. I

have personally been the target of hateful or degrading material online?’ (yes/no) and ‘In your own opinion, have you been a target of harassment online, for example where people have spread private or groundless information about you or shared pictures of you without your permission?’ (yes/no). The questions were merged to a sum variable which was further dichotomized with 1 indicating that the respondent has been victimized online in one way or another (see Table 1 for further information).

Socio-demographics and relational measures were included in the analysis as confounding background variables. The measures include gender, age, education, occupation, and living arrangement. Females were coded as 1, male as 0. The variable of age had a range of 15–30. Education, main occupation, and living arrangement were asked with the multi-option questions and subsequently dichotomized for further analysis. Education level was asked with the question: ‘Which is the highest level of education you have achieved?’. Education level of at least a high school diploma was coded as 1, less than a high school diploma was coded as 0. As main occupation items of ‘employed’, ‘entrepreneur’ and ‘student’ were coded as 1, other options as 0. Living alone was coded as 1, other options as 0. Activity in social media was a sum variable which was asked with the question ‘In the past 3 months, which of the following services have you used? Check any that apply.’ (Options were for example: Facebook, YouTube and Twitter). Scale of social media activity was determined from 0–21. (See Table 1 for further information.)

Further, belonging to primary groups was included in the multinomial analyses as we presumed it could shield young people against pro-self-harm and pro-suicide sites exposure. Belonging to primary groups was measured by two items on five-partite scales: ‘How close do you feel to family/ friends? Please indicate on a scale of 1–5 where 1 = not at all important and 5 = very important.’ These two indicators were combined to form a composite variable, whose scale was coded from 0 to 8, with a higher value indicating a stronger belonging to

primary groups. The alpha reliability of the composite variable was .639, .621, .610, .602 in US, UK, Germany, Finland, respectively.

In addition, we controlled self-esteem as a potential risk factor of pro-self-harm and pro-suicide site exposure in the statistical analysis. Self-esteem was measured with one question, as current research has pointed out that using the single item measure is a valid approach to assessing self-esteem (Robins, Hendin, & Trzesniewski, 2001). Respondents were asked to indicate on a 10-point scale whether they agreed with the statement 'I have high self-esteem' (1 = not very true of me, and 10 = very true of me). (See Table 1 for further information.)

Statistical Analysis

Chi-square and correlation analyses were performed to investigate differences in exposure to pro-self-harm and pro-suicide websites and offline and online victimization. A multinomial regression analysis was carried out to examine the association between our independent variables and the exposure to either pro-self-harm or pro-suicide websites or to both of them (no exposure at all was used as the reference category). Subsamples of the US, the UK, Germany, and Finland were analyzed separately using the Statistical Package for the Social Sciences (SPSS, version 23.0). The probability of the Wald chi-square statistic was used to assess the statistical significance of the model's parameter estimates. The fit of the multinomial model was adequate in the US, the UK, Germany, Finland (-2 Log likelihood=972.023, 930.890, 512.004, 525.578, respectively, $df = 30$, $p < .001$). The value of the Nagelkerke's pseudo r-squared statistic was .181, .286, .233, .182 for the US, the UK, Germany, Finland, respectively.

Results

Descriptive findings

In all countries, the exposure to both pro-self-harm and pro-suicide sites was more frequent than exposure to either pro-self-hurt only or pro-suicide sites only. A total of 6.8% of the respondents had been exposed to both sites, 4.2% to pro-self-harm sites only and 1.7% to pro-suicide sites only. Also, there was a strong correlation between exposure to pro-self-harm and pro-suicide sites (in the total sample, $r = 0.671$, $p < .001$). In the cross-national comparison, there were significantly fewer German respondents who had seen both types of sites and pro-self-harm sites only. Further, more Britons had seen pro-suicide sites only ($\chi^2 = 54.663$, $df = 9$, $p < .001$).

Experiences of offline victimization were more common than online victimization in all countries. In the total sample, 38.1% of the respondents reported that having been a victim of offline violence and 21.5% had been victimized online in at least one way. According to chi-square tests ($p < .001$), experiences of being bumped into or touched in an insulting way was more common than being attacked or threatened in a frightening manner by an acquaintance or stranger. In the total data, online harassment was more common than being the target of hateful or degrading material online ($\chi^2 = 293.212$, $df = 1$, $p < .001$). (See Table 1 for further information.)

Factors associated with pro-self-harm and pro-suicide websites

Multinomial regression analyses revealed that offline and online victimization had associations with exposure to pro-self-harm and pro-suicide websites in four countries after adjusting for demographics, living situation, social media activity, self-esteem and belonging to primary groups (see Table 2). Respondents who had seen both pro-self-harm and pro-suicide sites were more likely to be victims of offline violence in the US, UK, and Finland

and victims of online aggression in the US, the UK, and Germany. Offline victimization was also associated with exposure to pro-self-harm sites only and pro-suicide sites only among British respondents whereas online victimization was connected with exposure to pro-self-harm sites only in the US, the UK, and Germany.

We found one difference between the association of offline and online victimization and entering pro-self-harm and pro-suicide websites. Namely, those who had seen only pro-self-harm sites were more likely to be victims of online aggression in the US and UK. We further explored the issue by comparing the subgroups of those who had entered pro-self-harm sites only and pro-suicide sites only in the merged data of the four countries using logistic regression. The results confirmed that, unlike offline victimization, online victimization had a significant association with pro-self-harm sites only ($p = .012$; table is not presented).

In addition, those who had seen both pro-self-harm and pro-suicide websites were more likely to report lower levels of belonging to primary groups in the UK, Germany and Finland indicating the possible protective factor of the primary groups. Moreover, the multinomial analysis gave some support that low self-esteem could be linked to entering pro-self-harm and pro-suicide websites as lower levels of self-esteem were reported among those German respondents who had seen both sites and pro-suicide sites only.

Discussion

The present study increases the knowledge base about the factors associated with online self-harm and suicidal behavior. Using international data from the US, the UK, Germany and Finland, the connections between victimization (offline and online) and exposure to pro-self-harm and pro-suicide sites were found among adolescents and young adults aged 15–30. The findings showed that victimization in either context is a notable factor in the exposure to self-harm and suicidal content online.

Pro-self-harm and pro-suicide websites were fairly familiar to young people and 13% of respondents had seen either or both types of online content. A total of 9% of respondents were familiar with pro-suicide sites and 11% had entered pro-self-harm sites, a proportion which is in line with the findings of a European study in which 7% of 11–16 year old children had seen self-harm sites (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Exposure to both sites was more common than exposure to either one in each four countries with a strong correlation between exposure to pro-self-harm and pro-suicide sites. This finding reflects the close connection between online self-harm and suicidal behavior. Consequently, it seems that online self-harm and suicidal behavior of this kind confirms previous findings indicating the co-occurrence of self-harm and suicidal behavior (Asarnow et al., 2011; Hamza, Stewart, & Willoughby, 2012; Hawton, Saunders, & O'Connor, 2012; Klonsky, May, & Glenn, 2013; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006).

Both offline and online victimization were related to being exposed to pro-self-harm and pro-suicide sites among young people. These findings are in line with the observed links between victimization (offline and online) and self-harm and suicidal behavior in the offline context (Deliberto & Nock, 2008; Hinduja & Patchin, 2010; Howard & Wang, 2003; Liang et al., 2003; O'Connor et al., 2009; Messias et al., 2014; Sansone et al., 2007; Schenk & Fremouw, 2012). Offline and online victimization, particularly, were more common among individuals who were familiar with both pro-self-harm and pro-suicide sites. This finding is parallel with earlier research which demonstrated that adult suicide attempters with a history of non-suicidal self-injury had more experiences of interpersonal violence compared to those who attempted suicide without prior self-injury (Sahlin-Berg, Moberg, Hirvikoski, & Jokinen, 2015).

Based on the results, one difference between offline and online victimization was present concerning online behavior. As opposed to offline victimization, online victimization

had a significant connection with pro-self-harm sites only. One explanation for this finding may be related to the distinct psychological functions of online self-harm and suicidal behavior. However, the issue is scarcely studied so far and needs further examination.

Our findings give support to the overall notion that belonging to primary groups can shield young people from exposure to pro-self-harm and pro-suicide sites, which is in line with Harris and colleagues (2009) findings concerning suicide-related online users. Close relationships with primary groups may balance emotional distress, with the potential for both direct and buffering effects of social support being available (Cobb, 1976; Cohen & Wills, 1985; Joiner, 2005). Social connectedness and support are found to be poorer among self-injurers and satisfaction with social support has shown to be protective factor against later self-injuring (Rotolone & Martin, 2012; Wichström, 2009). Moreover, perceived support from friends and family has an association with decreased likelihood of suicide (Kleiman & Liu, 2013) along with a reduced effect of life stress on suicidal ideation (Blankstein, Lumley, & Crawford, 2007).

Notable cross-national differences were detected in the study. The hypothesis of low self-esteem as a risk factor to entering pro-self-harm and pro-suicide websites received support in Germany only. Incoherent findings across the countries on the issue could imply more complex associations between self-esteem and online self-harm and suicidal behavior. As such, the topic needs further research. It is possible, for example, that self-esteem is a mediator between victimization and exposure to pro-self-harm and pro-suicide sites. Further, individuals with low self-esteem could be more susceptible to being disturbed by online harassment.

Living alone emerged to be a vulnerability factor of exposure to pro-self-harm and pro-suicide sites among Britons, which is comparable to findings among suicide-related online users (Harris et al., 2009). High activity in social media was a risk factor in the UK and

Finland, following the previous observations regarding the link between excessive video game/Internet use and suicide ideation and planning among adolescents (Messias, Castro, Saini, Usman, & Peeples, 2011). Consistent with earlier research, we found no statistically significant differences in terms of sex or age except in Finnish respondents who had seen pro-suicidal sites only (Harris et al., 2009). However, this group consisted of only ten respondents, which brings uncertainty to the results of multivariate analysis regarding this subgroup.

Limitations

There are important limitations we need to acknowledge in terms of our sample and measures employed. Among a variety of potential psychological factors associated with pro-self-harm and pro-suicide site exposure, we controlled for belonging to primary groups and self-esteem along with socio-demographic measures. However, there are other possible psychosocial factors, e.g. depression, hopelessness and anxiety, that could account for the detected relationship. The role of these factors would be intriguing areas for future research to address. One of the general limitations of this study concerns those who had been exposed to pro-suicidal sites only due to the limited number of the respondents of this kind, especially in Finland and the UK. Further, the causal interpretations in this study are of course conditional due to the cross-sectional research design. The cross-national aspect of the data is one of the strengths of this examination as the comparative studies concerning self-harm and suicide-related web forums have been scarce. However, there is heterogeneity in the results among the countries, which limit their generalization. Further, the causal interpretations in this study are of course conditional due to the cross-sectional research design.

Conclusions

This study showed the association between offline and online victimization and the online self-harm and suicidal behavior of young people. Notably, the victimization context was found to have relevance, as online victimization, particularly, was related to pro-self-harm behavior. Further, the results addressed the co-occurrence of online pro-self-harm and pro-suicidal behavior on the one hand, but also implied distinct functions of online self-harm and suicidal behavior on the other hand. These findings can help toward the development of effective interventions for preventing harmful behaviors among adolescents and young people and suggest the need to organize more specific online support for the victims of violence and online aggression.

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Table 1. Descriptive Statistics by Country

		US		UK		Germany		Finland		Total	
Discrete variables		<i>n</i>	(%)								
Online behavior	No exposure	858	85.6	842	84.3	912	93.2	456	85.4	3068	87.3
	Pro-self-harm site	43	4.3	53	5.3	23	2.4	27	5.1	146	4.2
	Pro-suicide site	21	2.1	13	1.3	17	1.7	10	1.9	61	1.7
	Both	80	8.0	91	9.1	26	2.7	41	7.7	238	6.8
Sex	Male	499	49.8	509	51.0	488	49.9	267	50.0	1763	50.2
	Female	503	50.2	490	49.0	490	50.1	267	50.0	1750	49.8
Education level	Less than a high school diploma	108	10.8	270	27.0	171	17.5	180	33.7	729	20.8
	High school diploma or professional diploma	245	24.5	327	32.7	570	58.3	264	49.4	1406	40.0
	College	355	35.4	137	13.7	130	13.3	13	2.4	635	18.1
	BA, Masters or higher	294	29.3	265	26.5	107	10.9	77	14.4	743	21.2
Main occupation	Student	370	36.9	327	32.7	435	44.5	246	46.1	1378	39.2
	Full time job	272	27.1	355	35.5	356	36.4	151	28.3	1134	32.3
	Entrepreneur	155	15.5	141	14.1	27	2.8	11	2.1	334	9.5
	Unemployed	121	12.1	108	10.8	34	3.5	83	15.5	346	9.8
	Maternity or paternal leave	84	8.4	68	6.8	47	4.8	25	4.7	224	6.4
	In the army or civil service	0	0	0	0	9	.9	3	.6	12	0.3
	Disability pension	0	0	0	0	70	7.2	15	2.8	85	2.4
Live alone	Living alone	126	12.6	132	13.2	197	20.1	155	29.0	610	17.4

	Married or living with a partner, no children	174	17.4	177	17.7	184	18.8	134	25.1	669	19.0
	Single parent	42	4.2	21	2.1	30	3.1	2	.4	95	2.7
	Married or living with a partner, children	141	14.1	115	11.5	107	10.9	52	9.7	415	11.8
	Living with parents	422	42.1	450	45.0	374	38.2	166	31.1	1412	40.2
	Other household type	97	9.7	104	10.4	86	8.8	25	4.7	312	8.9
Someone bumped into or touched in the insulting way	No	727	72.6	718	71.9	634	64.8	388	72.7	2467	70.2
	Yes	275	27.4	281	28.1	344	35.2	146	27.3	1046	29.8
Strange attacked or threatened in a really scaring way	No	864	86.2	855	85.6	812	83.0	443	83.0	2974	84.7
	Yes	138	13.8	144	14.4	166	17.0	91	17.0	539	15.3
Acquaintance attacked or threatened in a really scaring way	No	829	82.7	860	86.1	826	84.5	440	82.4	2955	84.1
	Yes	173	17.3	139	13.9	152	15.5	94	17.6	558	15.9
Victim of violence at least in one way	No	633	63.2	649	65.0	549	56.1	344	64.4	2175	61.9
	Yes	369	36.8	350	35.0	429	43.9	190	35.6	1338	38.1
Target of hateful or degrading material online	No	840	83.8	883	88.4	940	96.1	480	89.9	3143	89.5
	Yes	162	16.2	116	11.6	38	3.9	54	10.1	370	10.5
A target of harassment online	No	832	83.0	849	85.0	790	80.8	431	80.7	2902	82.6
	Yes	170	17.0	150	15.0	188	19.2	103	19.3	611	17.4
Online victim at least in one way	No	773	77.1	809	81.0	771	78.8	406	76.0	2759	78.5
	Yes	229	22.9	190	19.0	207	21.2	128	24.0	754	21.5
Continuous variables	Scale	<i>M</i>	<i>(SD)</i>								
Age	15–30	24.121	4.043	23.178	4.143	23.201	3.980	23.676	4.178	23.529	4.094
Social media activity	0–21	6.261	3.163	6.269	3.155	5.559	2.783	6.232	2.777	6.064	3.017
Self-esteem	1–10	6.473	2.378	5.536	2.457	6.389	2.429	6.414	2.417	6.174	2.453

Belongingness to
primary groups

0-8

5.992

1.787

5.644

1.884

6.210

1.729

5.699

1.822

5.909

1.819

Table 2. Regression model

Country	Variable	Pro-self-harm site exposure					Pro-suicide site exposure					Pro-self-harm and pro-suicide sites exposure				
		χ^2	df	p	OR	95% IC	χ^2	df	p	OR	95% IC	χ^2	df	p	OR	95% IC
US	Female	1.793	1	.181	.628	.318–1.241	3.375	1	.066	.403	.153–1.063	2.188	1	.139	.678	.405–1.135
	Age	.094	1	.759	.986	.900–1.080	1.816	1	.178	1.088	.963–1.229	1.921	1	.166	.950	.885–1.021
	Education	.924	1	.336	1.805	.541–6.022	.005	1	.942	.940	.177–4.977	2.929	1	.087	2.278	.887–5.847
	Main occupation	1.800	1	.180	1.974	.731–5.328	.002	1	.964	1.027	.320–3.303	.525	1	.469	1.285	.652–2.532
	Live alone	.344	1	.557	.744	.277–1.999	.003	1	.954	.963	.269–3.448	1.686	1	.194	1.529	.806–2.900
	Social media activity	.465	1	.495	.964	.869–1.070	.282	1	.596	1.035	.910–1.178	3.378	1	.066	1.070	.996–1.150
	Self-esteem	.055	1	.814	1.017	.883–1.171	.185	1	.667	.958	.789–1.164	2.482	1	.115	.917	.824–1.021
	Belongingness to primary groups	1.373	1	.241	.901	.756–1.073	.012	1	.913	.986	.763–1.274	3.688	1	.055	.877	.767–1.003
	Victim of violence	3.659	1	.056	2.040	.983–4.237	2.116	1	.146	2.068	.777–5.501	13.628	1	.000	2.958	1.663–5.261
	Online victim	14.688	1	.000	4.161	2.007–8.627	.699	1	.403	1.567	.547–4.494	15.928	1	.000	3.068	1.769–5.320
UK	Female	.753	1	.386	1.320	.705–2.471	.030	1	.862	.896	.260–3.085	.163	1	.687	.899	.536–1.509
	Age	2.139	1	.144	.939	.864–1.022	.029	1	.865	1.013	.870–1.181	.362	1	.548	1.020	.956–1.088
	Education	1.046	1	.306	1.481	.698–3.142	2.824	1	.093	.337	.095–1.198	.667	1	.414	.787	.444–1.397
	Main occupation	1.174	1	.279	1.661	.663–4.158	1.447	1	.229	3.707	.439–31.337	2.155	1	.142	1.765	.827–3.770
	Live alone	1.841	1	.175	1.745	.781–3.899	6.078	1	.014	4.863	1.383–17.098	3.864	1	.049	1.918	1.002–3.673
	Social media activity	.745	1	.388	1.040	.951–1.138	.528	1	.467	.930	.766–1.130	10.823	1	.001	1.124	1.048–1.205
	Self-esteem	.025	1	.875	1.011	.887–1.152	1.462	1	.227	1.173	.906–1.519	.681	1	.409	.956	.858–1.064
	Belongingness to primary groups	2.279	1	.131	.880	.746–1.039	.595	1	.441	.880	.635–1.219	4.822	1	.028	.858	.748–.984
	Victim of violence	11.309	1	.001	2.969	1.575–5.599	10.169	1	.001	29.883	3.703–241.122	10.054	1	.002	2.320	1.379–3.903
	Online victim	19.974	1	.000	4.101	2.208–7.614	.001	1	.973	.977	.248–3.850	62.895	1	.000	7.867	4.725–13.099
German	Female	.114	1	.736	.855	.343–2.127	1.062	1	.303	.576	.202–1.645	.689	1	.406	.680	.274–1.689

	Age	2.221	1	.136	1.088	.974–1.216	.352	1	.553	1.042	.910–1.193	.143	1	.705	1.022	.914–1.143
	Education	2.482	1	.115	.443	.161–1.220	.168	1	.682	1.353	.319–5.733	.217	1	.641	1.349	.383–4.751
	Main occupation	.886	1	.347	1.881	.505–7.005	.024	1	.878	1.101	.324–3.740	4.093	1	.043	8.753	1.070–71.599
	Live alone	.145	1	.704	1.232	.420–3.611	.510	1	.475	1.526	.478–4.868	1.729	1	.189	1.864	.737–4.713
	Social media activity	.787	1	.375	1.067	.924–1.232	.601	1	.438	1.068	.904–1.263	.001	1	.971	1.003	.871–1.153
	Self-esteem	.000	1	.993	1.001	.831–1.205	15.151	1	.000	.602	.467–.777	5.892	1	.015	.792	.656–.956
	Belongingness to primary groups	9.903	1	.002	.708	.571–.878	2.706	1	.100	.807	.626–1.042	8.801	1	.003	.726	.588–.897
	Victim of violence	.860	1	.354	1.579	.601–4.147	.127	1	.722	.814	.263–2.524	1.203	1	.273	1.733	.649–4.631
	Online victim	3.854	1	.050	2.553	1.002–6.507	.590	1	.442	1.587	.489–5.152	10.363	1	.001	4.444	1.792–11.021
Finland	Female	1.042	1	.307	.646	.279–1.495	.441	1	.507	1.613	.394–6.608	2.037	1	.153	.600	.298–1.210
	Age	.892	1	.345	1.058	.942–1.188	4.517	1	.034	.770	.605–.980	.828	1	.363	.953	.860–1.057
	Education	.083	1	.774	.863	.316–2.355	.302	1	.582	1.539	.331–7.149	1.524	1	.217	1.711	.729–4.011
	Main occupation	2.761	1	.097	2.980	.822–10.804	.008	1	.928	.926	.175–4.911	3.594	1	.058	2.686	.967–7.460
	Live alone	2.116	1	.146	.463	.164–1.307	1.551	1	.213	2.458	.597–10.122	.113	1	.737	.876	.405–1.897
	Social media activity	11.607	1	.001	1.261	1.103–1.441	.603	1	.437	.898	.684–1.178	7.667	1	.006	1.178	1.049–1.324
	Self-esteem	.039	1	.844	.982	.821–1.175	.467	1	.494	.905	.680–1.205	3.475	1	.062	.871	.753–1.007
	Belongingness to primary groups	2.750	1	.097	.830	.666–1.034	.053	1	.818	.956	.650–1.404	5.931	1	.015	.796	.662–.956
	Victim of violence	1.080	1	.299	1.577	.668–3.724	1.144	1	.285	2.103	.538–8.218	4.910	1	.027	2.250	1.098–4.608
	Online victim	.324	1	.569	1.305	.522–3.262	1.304	1	.253	.286	.033–2.449	1.661	1	.197	1.618	.778–3.366

Note. Reference category no exposure either sites. Boldface indicates that the p-value is statistically significant.