**GENDER DIFFERENCES IN CYBER-BULLYING**

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**ABSTRACT**

The aim was to explore gender differences in cyber-violence in high school samples from a small town. Research was conducted on two samples of second grade students (N1=249 school year 2011/2012, N2=339 school year 2012/2013). Cyber Victim and Bullying Scale (CVBS) was used. Prevalence of internet violence in first sample was 24.9% (experiencing) and 27.7% (committing) and in second sample was 17.7% (experiencing) and 16.5% (committing). Decrease is probably the result of some preventive actions, but the numbers are still high. Gender differences were found in the first sample with boys committing (t=4.47, p<0.01) and experiencing (t=6.97, p<0.01) more of cyber-bullying and in second sample boys only committed more cyber-bullying (t=5.72, p<0.01). Gender differences were also analyzed on CVBS subscales for both samples. In the first sample it was found that boys both commit and experience more hidden identities and cyber forgery and commit, but not experience more cyber verbal bullying. On the other hand, in the second sample it was found that boys commit more cyber bullying on all three subscales, but boys only experience more cyber forgery than girls.

**Keywords:** Cyber-bullying, gender differences, adolescents

**INTRODUCTION**

Cyber-bullying and cyber-victimization is a relatively new topic in scientific research, but for the last ten years, scientists have conducted many researches in this field. Prensky [1] coined term “digital natives” and “digital immigrants”, describing “digital natives” as generations that grow up with digital technology, and “digital immigrants” as their parents who, although they may use this technology, are not proficient enough in using it. “Digital immigrants” could be compared to real immigrants – they use second language, but still think in their mother tongue. And, if we parallel “digital natives” with “real world natives”, we must keep in mind that even in real world, although we speak our mother’s tongues, we still have to learn rules how to use it efficiently. Last ten years made scientists and experts aware that we have to learn safe and efficient use of digital technology, to disseminate knowledge about rules that will prevent cyber-bullying and cyber-victimization not only to children and youth, but also to their parents and their teachers.

Few years ago, almost every (>95%) child age 11-18 in Croatia used internet [2], and their internet literacy is encouraged by school authorities. In the same time, their safety is jeopardized – 41% of children were questioned about their intimacy (sexual experience, intimate body parts, etc) [2].

Cyber – violence include cyber-bullying, e.g. violence among children via Internet and information and communication technology (ICT) in general. Like traditional bullying, cyber-bullying is aggressive, intentional and carried out by individual or groups, and victim usually cannot defend itself [3]. However, there are some differences to traditional bullying: cyber-bullying is defined as harassment by peers using ICT, especially Internet and mobile phones [4], it does not stop when a child comes home and physical power is irrelevant for it [5]. Cyber-bullying prevalence range between 20-40% of children [6] – wide prevalence range is determined by the different definitions and operationalizations of cyber-bullying.

Types of cyber-bullying categorized by Nancy Willard, the director of the Centre for Safe and Responsible Internet Use in the USA [7] :

* Flaming – sending angry, rude, vulgar messages directed to a person or a group of people privately or to an online group;
* Harassment – repeatedly sending a person offensive messages;
* Cyber-stalking – harassment that includes threats of harm or is highly intimidating;
* Denigration (put-downs) – sending or posting harmful, untrue, or cruel statements about a person to other people;
* Masquerade – pretending to be someone else and sending or posting material that makes that person look bad or places that person in potential danger;
* Outing and trickery – sending or posting material about a person that contains sensitive, private, or embarrassing information, including forwarding private messages or images. Engaging in tricks to solicit embarrassing information that is then made public
* Exclusion – actions that specifically and intentionally exclude a person from an online group.

Parental control is important in preventing cyber-bullying and cyber-victimization. Parental control can be direct or supervision e.g. controlling what a child does on the internet immediately (for example, having computer in living room), but parents can also control their children safety on internet trough their relationship. The latter means to have an open relationship so a child can discuss and learn from parents about the situations on the Internet or by using mobile phones in which he/she isn’t sure if his/her behaviour is appropriate. Of course, child has to internalize the norms to be aware of such situations, and parental instructions about internet safety are crucial for that. Also, an open and secure parent-child relationship will help in cases of cyber-victimisation, especially in cases of distributing sensitive material that came from the child and was sent under the expectation of privacy. The child can be ashamed so he or she postpones talking to parents and asking for help, until situation becomes unbearable. And the importance of this relationship is even more pronounced if we have in mind the psychological damage of cyber-victimization like low self-esteem, school failure, anger, anxiety, depression, school avoidance, school violence, even suicide. Third form of parental control – filtering software, could promote false security to parents and risky behaviour in children (they could try to find a way to bypass the filters). Prevention in school and community is faced with challenges of insuring child safety and freedom of speech. And, as in other areas of violating children and mostly youth safety (e.g. dating violence), victims will first talk to their peers, and only in more serious situations, they will ask adults for help. One of the reasons is probably fear that their parent will limit their usage of Internet and mobile phones to make them safe. In the same time, that parental action can be seen as a punishment by child who already suffers.

Research of traditional violence found well established gender differences: it is known that boys are more prone to direct, and girls to indirect forms of aggression. Comparing cyber-bullying and cyber-victimization with traditional forms of violence, and ways of using Internet and mobile phones, some scientists expected cyber-bullying to have higher prevalence among girls. But, committing and experiencing traditional violence in general is more frequent for boys. Research findings are inconclusive: some support that girls are more involved in cyber-bulling [8], [9], others found higher prevalence of cyber-bulling in boys [10], [11], and third didn’t found gender differences [12]. Gender differences in experiencing cyber-violence show similar trends, with some research [13] indicating that girls are more exposed to cyber-bullying via e-mail, but latest findings showing that boys experience more violence via Internet [10], [11]. Having in mind these different findings in previous researches, this research was aimed to explore gender differences in cyber-bullying and cyber-victimization in adolescents in a small town in Croatia.

**METHOD**

Participants

Data from two samples of second grade high school students (school years 2011/2012 and 2012/2013) were included in the analysis. In the first sample 249 adolescents participated in research ((169 girls and 80 boys), their age range was 15 to 18 years (M=16.00, SD= 0.48). In the second sample participated 339 second grade students (229 girls and 110 boys), and their age range was 15 to 17 years (M=15.70, SD= 0.50). They were all enrolled in two high-schools from Vinkovci, a small city (population of 35.000 people) in eastern part of Croatia.

Procedure

Pupils were handed the questionnaire in their classrooms, by trained graduate students, who explained the purpose of research and supervised the ﬁlling in of the questionnaires. The anonymity of the study was emphasized. It was stressed that no one would have the opportunity to read any speciﬁc questionnaires. It took 45 minutes to complete questionnaires (this research is part of a larger study). Informed consent was obtained for each subject according to the protocol approved by the institutional review boards of Faculty of Humanities and Social Sciences Osijek. Students were advised that participation was optional, they were free not to answer any speciﬁc questions, and that they could withdraw at any time. At the end, all participants were handed information about how to seek help. First measurement was in April 2012, and second was in April 2013.

Instruments

Cyber victim and bullying scale [14] was developed for assessment of committing and experiencing cyber-violence in the previous year. Cyber victim subscale consists of 22 items divided in three factors: cyber verbal bullying, hidden identity and cyber forgery. Participants answered if they had experienced behaviour described in item on five point scale (ranging from 1-never to 5-always). Cyber bullying subscale has the same behaviour description, but participants answer if they had committed that behaviour in the previous year on the same five point scale. There are seven items in Cyber verbal bullying (e.g. cyber gossiping, offensive remarks, symbols or comments), five items in Hidden identity (e.g. hiding your own identity or using someone else's identity without permission or intentional spreading of computer viruses) and ten items in Cyber forgery (spreading photos or videos without permission, disturbing others with sexual material or speech, using internet for excessive self-promotion or forgery). Internal consistency coefficients were 0.91 for cyber victim subscale and 0.92 for cyber bullying subscale in first sample and 0.90 for both subscales in second sample.

**RESULTS**

Descriptive statistics for both samples are presented in Table 1 and Table 2. It can be seen that cyber-victimization (t=3.35, df = 586, p=0.0009, Cohen’s d=0.28) was larger in first sample, but effect size was small to mediate. Similar was found for cyber-bullying, with exception of mediate effect size (t=4.24, df = 586, p<0.0001, Cohen’s d=0.35).

Table 1. Descriptive statistics in first sample (N=249)

|  |  | Cyber victim subscale | Cyber bullying subscale |
| --- | --- | --- | --- |
| M | | 39.02 | 39.59 |
| C | | 37.00 | 35.00 |
| D | | 30 | 31 |
| SD | | 13.40 | 14.50 |
| Minimum possible/achieved | | 22/22 | 22/22 |
| Maximum possible/achieved | | 110/92 | 110/110 |

Table 2. Descriptive statistics in second sample (N=339)

|  |  | Cyber victim subscale | Cyber bullying subscale |
| --- | --- | --- | --- |
| M | | 35.56 | 34.96 |
| C | | 33.00 | 32.00 |
| D | | 25 | 27 |
| SD | | 11.59 | 11.92 |
| Minimum possible/achieved | | 22/22 | 22/22 |
| Maximum possible/achieved | | 110/85 | 110/109 |

To explore the prevalence of cyber-bullying we used cut-point at result 44 (as the result that would be obtained if the participant answered that he had commit/experienced behaviour described in every item from each subscale at least once). In first sample 24.9% of participants could be categorized in group of those who experienced cyber violence in last year and 27.7% first sample participants were in group who could be categorized as cyber – bullies. In second sample 17.7% participants had result above cut-point on Cyber victim subscale and 16.5% achieved higher than cut-point result on Cyber bullying subscale.

Gender differences were also analysed with the t-test for both subscales and factors in subscales, respectively for each sample. Results are in Table 3. and Table 4. In the first sample boys commit and experience more cyber – violence in general, but they also commit and experience more hidden identities and cyber forgery. Boys also commit more cyber verbal bullying, but there are no gender differences in experiencing cyber verbal bullying. Effect sizes are moderate to large, with exception of effect size for differences in experiencing hiding identity which is moderate.

Table 3. Gender differences in first sample (N=249)

|  | *Boys (N=80)* | | *Girl(N=169)* | |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | M | SD | M | SD | t-test | Cohen’s d |
| ***Cyber victim subscale*** |  |  |  |  |  |  |
| Total | 44.34 | 14.55 | 36.51 | 12.07 | 4.47\*\* | 0.58 |
| Cyber verbal bulling | 15.50 | 5.12 | 14.14 | 4.78 | 2.05 | 0.27 |
| Hiding identity | 8.84 | 4.20 | 7.32 | 3.34 | 3.07\*\* | 0.40 |
| Cyber forgery | 20.00 | 7.58 | 15.05 | 5.70 | 5.72\*\* | 0.73 |
|  |  |  |  |  |  |  |
| ***Cyber bulling subscale*** |  |  |  |  |  |  |
| Total | 48.12 | 18.78 | 35.56 | 9.67 | 6.97\*\* | 0.84 |
| Cyber verbal bulling | 18.49 | 6.94 | 15.19 | 4.52 | 4.49\*\* | 0.56 |
| Hiding identity | 9.16 | 5.25 | 6.50 | 2.43 | 5.48\*\* | 0.65 |
| Cyber forgery | 20.47 | 9.18 | 13.87 | 4.59 | 7.57\*\* | 0.90 |

\*\* p<0.01

Table 4. Gender differences in second sample (N=339)

|  | *Boys (N=110)* | | *Girl(N=229)* | |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | M | SD | M | SD | t-test | Cohen’s d |
| ***Cyber victim subscale*** |  |  |  |  |  |  |
| Total | 36.38 | 12.61 | 35.17 | 11.08 | 0.91 | 0.10 |
| Cyber verbal bullying | 13.25 | 4.94 | 13.45 | 4.57 | -0.36 | -0.04 |
| Hiding identity | 7.02 | 2.83 | 7.27 | 2.99 | -0.73 | -0.08 |
| Cyber forgery | 16.11 | 6.69 | 14.45 | 5.37 | 2.45\* | 0.27 |
|  |  |  |  |  |  |  |
| ***Cyber bullying subscale*** |  |  |  |  |  |  |
| Total | 40.07 | 15.62 | 32.51 | 8.68 | 5.72\*\* | 0.62 |
| Cyber verbal bullying | 14.91 | 5.92 | 13.22 | 4.12 | 3.05\*\* | 0.33 |
| Hiding identity | 7.87 | 4.05 | 6.17 | 2.05 | 5.13\*\* | 0.56 |
| Cyber forgery | 17.30 | 7.73 | 13.13 | 4.19 | 6.45\*\* | 0.70 |

\*\* p<0.01 \* p<0.05

In second sample there are no gender differences in experiencing cyber-violence, with exception of cyber forgery – boys experience more forgery based on ICT. In concordance with results from first sample, boys commit more cyber –violence in general, but they also commit more of every subtype of cyber violence than girls. Effect sizes are moderate to large for cyber-bullying in general, hidden identities and cyber forgery, and moderate for cyber verbal bullying.

**DISCUSSION**

In this research we were interested to see if there are any gender differences in cyber-bulling, and if there are, do they support the hypothesis that cyber – bullying is more similar to indirect violence, and, like in traditional indirect violence, more present in girls behaviour or is it more characteristic for boys’ behaviour. If we analyze results of this research in general, we could conclude that they support thesis that boys commit more cyber – bullying than girls. That gender difference was found in both samples and had large effect size. Newer researches in cyber-bullying are consistent with our finding [10], [11]. Gender differences were analyzed on factors in Cyber bullying subscale and, in both sample, it was found that boys commit more cyber verbal bullying, cyber forgery and more violence based on hidden identity or presenting themselves as other person. The findings are in concordance with well-known fact that boys commit more traditional violence in general than girls, especially direct forms of traditional violence. We already mentioned that some scientists hypothesized that cyber – bullying is more similar to indirect traditional violence, so they expected girls to commit more cyber – bullying. But, if we inspect closely content of items in cyber – bullying scale, it is obvious that it describes behaviours in a manner closer to direct aggression. Even those behaviours that could be seen as a sign of indirect aggression (e.g. gossiping) lack clear description of social manipulation. The social manipulation, as one of the major determinant of the indirect aggression, helps to the perpetrator of violence to harm other without being recognized as a bully.

Other possible explanation is time spent on the internet and level of the knowledge in using different aspects of the computer programs (for example, person needs some specific knowledge to make forgery via Internet or to successfully hide his or her identity). Different gender socialization could be responsible for the better computer skills among boys. But, it is also possible that cyber-violence is more similar to different risk behaviour based on breaking the norms and aggression in general. To clarify nature of gender differences in cyber – bullying more research is needed and they should try to cover direct and indirect aggression, and not to neglect social manipulation in items contents. Also, researches of the face-to-face aggression emphasize peers perception, and the importance of using the multi – source approach in collecting information. Although it might seem that violence via internet is more hidden experience than traditional violence, risk behaviour in adolescence is often group behaviour, and some types of cyber-bulling (e.g. hate groups) are primarily group activity, so using information not only from children about themselves, but also collecting peer’s information in future research could be useful.

Exploring gender differences in cyber-victimization didn’t gave us single-valued results. In both subsamples, boys experienced more cyber-forgery than girls. That is unexpected result, because cyber forgery factor has few items related with being forced to talk about sex and sharing sexually explicit photos. Also, some findings [13] show higher cyber victimization in girls (by e-mail). Still, there are findings that indicate that boys are more cyber-victimized than girls [11], [12]. Another possible reason is huge affair on Facebook related to sharing photos of adolescent girls from Vinkovci (where this research was conducted) accompanied with very rude comments about girls on photos and their morality. The affair occurred [15] in the time of the second measurement (spring 2013) and, although public was very negative about the anonymous who made that Facebook page, there was also some negativism forwarded toward victims. So, it is possible that girls in second measurement were more reluctant to admit that they were victims of cyber-bullying. The defensive attribution bias is widely recognized in social psychology, as well as the fact that similarity between witness and victim will increase blaming of the victims (the mechanism that helps witness to feel that it isn’t possible that same thing will happen to them). This self-serving way of thinking could be responsible for decrease in adolescent’s willingness to admit that they were victims of that type of cyber-bulling. For Hidden identity factor it is obvious that boys in the first sample experience it more than girls from their sample, but probably more than boys and girls from second sample. It is possible that boys are more exposed to that type of cyber-victimization, but some preventive activities (that became obligatory part of their curriculums in school year 2012/2013) made boys in second sample more cautious. On third factor (Cyber verbal bulling) gender differences weren’t found.

Prevalence of cyber-bulling and cyber-victimization in first measurement are in line with findings from international researches [6], but it is lower in second measurement, and that finding can bring some optimism about effectiveness of cyber-violence preventive attempts.

Preventive programs in schools could be responsible for differences in cyber-bulling and cyber-victimization in our research. As it was mentioned earlier, participants in second measurement reported that they commit and experience less cyber-violence than participant in first measurement. But, caution is needed in interpretation of this result. These samples are convenient, and effect sizes for differences in two measurements are small to mediate. That warns that, although the differences are statistically significant, their practical meaning is very small. So, further efforts in preventive activities are needed. Our results in gender differences suggest that cyber-bullying prevention should be gender specific, but that isn’t needed for cyber-victimization prevention.

Although results of these research are in line with newer findings about gender differences in cyber-violence, it has some important imperfections, primarily use of a convenient sample, but also limited range of behaviour in scale, so future research are needed. Future research should use representative samples. They also should include more divergent types of behaviour, based on focus groups’ information of gender specific cyber-bullying behaviour patterns. Longitudinal and cross-sectional research could be informative if there are developmental changes in cyber – bullying tendencies. And some correlates of gender differences in cyber-bullying (e.g. expertise in using ICT, time spent on internet) should be monitored.

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