

SATISFACTION WITH THE SCHOOL ENVIRONMENT AND INVOLVEMENT IN PEER VIOLENCE AND CYBERBULLYING IN CROATIAN VOCATIONAL HIGH SCHOOL

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ABSTRACT

Peer violence is a widespread phenomenon with focus of experts and prevention programs. Participating in peer violence and violence on the Internet can seriously damage a child's well-being and mental health and leave long-term consequences. There is lack of the research that focuses on a specific context as the vocational technical school with predominantly male students. Research was conducted on the sample of 108 students from vocational high school in Croatia, average age 15,7 who participated via online questionnaire about peer violence and cyberbullying and assessment of satisfaction with the school environment.

Evidently, more frequent participation in peer violence and cyberbullying is associated with lower school satisfaction. Furthermore, participation in violence behaviours' is related to committing and experiencing other forms of violence, real or online. Further analysis reveals that higher probability of experiencing peer violence can be associated with lower satisfaction with the school environment and more frequent acts of peer violence. Also, experiencing peer violence has the greatest impact on student satisfaction with the school environment. These findings can be used in the selection and creation of preventive interventions aimed at reducing the occurrence of violence among students.

KEY WORDS

school environment, peer violence, cyberbullying, vocational high school

CLASSIFICATION

JEL: I20

INTRODUCTION

Peer relationships, involvement in violence and satisfaction with school affect the quality of life and well-being of children on a daily basis. The first associations with school attendance are education, acquired knowledge and grades, while quality or satisfaction with school as institution and the school environment is a neglected aspect [1]. The quality of school life is a much broader concept that includes all the positive and negative experiences of students related to the school and the school environment, where, in addition to the well-being of students, the importance of schooling, the feeling of success and motivation for learning, special emphasis is placed on the quality of relationships in the school community and on the quality of relationships with other students and teachers [2]. Subjective satisfaction with school was recognized in a representative, internationally comparative sample that included more than 200 000 children in 40 countries. This survey of subjective well-being placed Croatia among the top 10 countries in terms of student satisfaction with school life [3]. HBSC research from 2018 shows that more than half of students in Croatia state that they feel a high level of support from students in their class [4].

Research shows that the children themselves pointed out that satisfaction with peer relationships contributes to their satisfaction with life in general, and violence among peers is directly associated with lower subjective well-being, which confirms the importance of peer relationships for child welfare [5]. Lázaro-Visa et al. emphasizes how participation in violence is a significant predictor of generally lower levels of life satisfaction among adolescents [6]. Available knowledge and findings of previous research show that involvement in violence among children has a negative effect on various dimensions of the school life of students, such as school satisfaction, school success or perception of the school climate. Young-Jones et al. in their research revealed that students who experienced violence had significantly lower motivation for school than those who were not victims, and that victimization can cause academic problems [7].

Victimised students of violence at school and on the Internet report worse school performance success and lower attachment to school, and victimization has a significant negative effect on happiness of students [8, 9]. These findings confirm that bullying has a negative effect on school satisfaction and academic results, and that the school climate, self-esteem and emotional recovery can be important protective factors when talking about violence among peers at school and on the Internet. Chai et al. found in a sample of secondary vocational school students, regardless of whether the students experienced traditional violence or violence on the Internet as a statistically significant sign of worse self-assessment of one's own health as well as life satisfaction if they are in the category of students who experience violence behavior [10].

PEER VIOLENCE AND CYBERBULLYING

Peer violence among children and bullying was earliest researched by Olweus, who states that “a student is abused or victimized when he is exposed, repeatedly and over time, to negative actions by one or more other students” [11, 12]. But it is important to note that not all violence among children is abuse. The authors Jia and Mikami emphasize the need to distinguish bullying from peer aggression or peer violence because the available data show that children who experience it form different groups that differ from each other and that different instruments and methodologies lead to different results [13].

Research on violence among children, classic peer violence and cyberbullying, has been the focus of researchers for many years. It should be emphasized that cyberbullying, violence on the Internet (cyberbullying) is not determined by a single definition, but the authors define it in different ways [14]. For example, Patchin and Hinduja equate cyberbullying with classic peer abuse, where they describe it as repeated and intentional harm to others via computer, mobile or

some other electronic device [15]. On the other hand, Tokunaga considers cyberbullying to be any behaviour that interferes with modern technologies, and in which communication between groups or individuals implies messages of an aggressive and hostile character intended to hurt or cause discomfort to other people [16].

Relevant data on representative samples show that peer violence and violence on the Internet are widespread among students in Croatia. The Health Behavior of School-Aged Children (HBSC) survey is one of the largest international surveys involving children and where data is collected every four years, on nationally representative samples of 11, 13 and 15-year-old students [4]. In 2013-14, this survey introduced two new mandatory questions on bullying victimization at internet, while in the wave of 2018, the area of digital well-being was further elaborated through questions about the frequency of online communication, interaction through social networks and problematic use of the internet. In the wave of 2018, rates of victimization of classic peer violence from 8 to 14%, victimization on the Internet from 12 to 16%, commission of classic peer violence from 4 to 11% and violence on the Internet from 8 to 19% were identified for Croatia [17].

Croatia collected nationally representative data from 3 470 children aged 11, 13 and 16 as part of the BECAN project (Balkan Epidemiological Study on Child Abuse and Neglect), an epidemiological study focused on explaining child abuse and neglect. Although the project was primarily focused on detecting domestic violence, Croatian researchers also studied children's experiences of peer violence. The results showed that 14,8% of Croatian children were victims of peer violence, 6,3% were perpetrators, and 14,8% were both victims and perpetrators. Comparing different age groups, peer violence increases with age in the groups of perpetrators and victim-perpetrators, while the proportion of victims decreases after the age of 13 [18]. When we look at peer violence through gender differences, it was noticed that boys are more prone to violent behaviour [19-21] and that they more often participate in physical forms of violent behaviour, while girls more often participate in verbal [19, 22].

Research of cyberbullying in Croatia using the Questionnaire on Experiencing and Perpetrating Cyberbullying (ECIPQ) [23] on a national sample of high school students identified 11,7% of students in the online victimization group and 11,5% of students in to the group of perpetrators of cyberbullying [24]. Research in the area of Split-Dalmatia County in secondary schools shows that 15% commit, 8,7% experience and 18,7% both commit and experience violent behaviour on the Internet [25]. But further research shows that the rates of cyberbullying in this county have decreased significantly during the pandemic. Although some behaviours still occur quite often, such as gossiping or insulting, some of the behaviours, such as identity theft or posting sensitive materials, have dropped to less than 7% [26]. The authors point out that this indicates the complexity of understanding peer relationships and peer violence and emphasize that it is necessary to further investigate the mutual connection between classic forms of peer violence and violence on the Internet. Data from previous research indicate how frequency of peer violence grows with age [27, 28] and how girls are more often in the role of victims of violence, both classic and online and boys more of-ten in the role of perpetrators of violence on the Internet [4, 29-31] while identical trends were observed in the Croatian sample, but gender differences were not confirmed [25].

Despite the presented specificities, classic violence among peers and violence on the Internet are in many ways very similar phenomena that include almost the same behaviours such as gossiping, insulting or excluding someone, they often appear together and experts agree that both have similar predictors and outcomes [26, 32, 33]. Research shows that classic peer violence and cyberbullying are significantly related. Velki and Kuterovac Jagodić state that individual, family and peer factors, which are consistently considered significant in predicting classic forms of peer violence, have also been determined in recent research for violence on the Internet, as numerous studies have indicated a connection between traditional peer violence and cyberbullying, which the authors did not confirm in their research [34].

Although anonymity has been cited as a factor that makes cyberbullying a ‘unique phenomenon’, which leads to different challenges compared to traditional abuse, some studies confirm that they often know the perpetrator from before [17, 35, 36]. The findings of several studies show that approximately half of the participants or more know who the perpetrator is or at least know that it comes from their school [35, 37, 38]. Some experts additionally point out that cyberbullying most often results from a previous problem in the relationship between people who know each other, and research by Slonje et al. shows how young people indicate that the perpetrator is usually someone from their school or neighbourhood, where the fact that the victims do not know exactly who the perpetrator is, but suspect someone from the school can lead to a greater fear of a possible repetition of violence [39, 40]. Jain et al. also argue that if the perpetrator was known to the victim, this could account for the low reporting rates of cyberbullying [37].

The aforementioned research shows the complexity of the connection and understanding of classic peer violence and violence on the Internet and its occurrence in the dynamics of peer relationships among children in general [41]. Ybarra et al. state how systematic monitoring of measurements in individual areas can provide useful insight into trends in violence and cyberbullying [42]. It should be emphasized that violence research is based on different definitions and operationalizations and different instruments, which makes comparisons impossible, but also all the presented studies systematically show the presence of classic forms of violence among children as well as cyber victimization and cyber aggression among the population of children and young people, and confirm that they leave serious and permanent consequences for children involved in classic forms of peer violence as well as violence on the Internet.

THE NEED FOR EFFECTIVE PEER VIOLENCE PREVENTION PROGRAMS

In Croatian schools, numerous preventive programs are implemented both with the aim of preventing violent behaviour and with the aim of preventing cyberbullying, and the results of evaluation studies on the success of preventive intervention are available only for some, which show low to moderate success rates [43, 44] or without success [45]. Pyżalski and Poleszak states the need for complex preventive programs that would include the prevention of peer and cyberbullying is emphasized [46]. Also, the need to apply the principles of effective preventive programs is highlighted, which suggest the timeliness of intervention, just before children start violent behaviour, interventions based on theories of change, a sufficient number of interventions delivered in a reasonable time, which are designed with active involvement of participants [47]. Preventive programs should be developmentally and sociocultural appropriate, led by well-educated, qualified and dedicated experts who are focused on fostering good relations. Finally, there is a need for documenting the implementation, systematic evaluation and improvement of the program. Also, in addition to the above principles, it should be remembered that preventive programs that involve children in other environments are more effective, so in addition to the school environment, it is necessary to involve parents in order to achieve greater effectiveness [48].

Knowledge about children from specific subgroups, and understanding of their context and risks, in this case for vocational mostly male students, is important in order to have data on the prevalence of violence both among students in classrooms and online, and their satisfaction with the school environment as well as focused interventions with effective outcomes.

GOAL OF THE RESEARCH AND RESEARCH HYPOTHESIS

The goal of this article is to determine the connection between peer violence and cyberbullying (cyberbullying) and student satisfaction with school system. Based on the current knowledge prediction is that (**H₁**) there is a connection between peer violence and cyberbullying, i.e. students who more often commit one form of violence will more often commit another form of violence,

as well as students who more often experience one form of violence will more often commit another form of violence and how (H_2) participation in cyberbullying will affect satisfaction with school, that is, students who more often participate in peer and cyberbullying will report lower satisfaction with school.

MATERIALS AND METHODS

DATA COLLECTION

The data was collected by means of a survey questionnaire during October 2021 in a vocational high school of technical direction of three-year and four-year programs in the Vukovar-Srijem County in Croatia. Before filling out the questionnaire, the consent of the school director was obtained and the parents were informed about the research and passive consent was sent to them with the possibility of refusing to participate, while informed consent to participate in the research was given by the participants themselves, before filling out the questionnaire. The research included all the ethical standards of research with children of the Code of Ethics for Research with Children [49]. The research was conducted by an expert associate from the school after detailed instruction from the research team. The children filled out the questionnaires in a group context, filling out the questionnaires took 30-45 minutes. During the research, informative leaflets were distributed to the children about the possibilities of information, help and support in the area of problematic internet use in case the research arouses unpleasant feelings, and the contacts to whom the child could contact immediately after the research were carried out.

INSTRUMENTS

A socio-demographic questionnaire was created for the purposes of this research. It contains questions about the gender and age of the student, about the class, school di-rection and about the achieved school success at the end of the previous school year and family environment (questions about who the students live with, the education of the father and mother, and an assessment of the family's financial capabilities).

The questionnaire of satisfaction with certain aspects of school life was used in the research on the subjective well-being of children in Croatia [50]. It contains 10 items where students assessed safety at school and on the way to school, they also assessed how much teachers and friends are ready to help if they have a problem, how satisfied they are with friends, support and mutual agreement with other students, and finally how satisfied they are with the school as students. The offered answers are on a 5-point scale (from 1 – “I don't agree” to 5 – “I completely agree”).

A factor analysis was performed to determine the reliability of the scale. The Keiser-Meyer-Olkin test of 0,866 shows a good fit of the data, the Bartlett's test is statistically significant ($p < 0,001$), and by checking the deviating values, we conclude that the pre-requisites for the implementation of the factor analysis are met. Based on the values of the eigenvalues and through the graphic representation of the scree plot, we conclude that the set of selected statements form one dimension. By looking at the factor saturations, it was noticed that one particle does not contribute to the explanation of the factor and was removed from further analysis.

Repeated factor analysis on 9 statements revealed that retained statements explain 53,46% of the total variance of all statements and that factor saturations range from 0,877 to 0,555. The internal reliability of the scale is Cronbach Alpha equals 0,90, and for further analysis, the sum of responses to the selected 9 statements at the level of respondents, which can be expected to range from 9 to 45 and called “Subjective well-being in the school environment”, will be calculated.

The peer violence questionnaire contains 17 variables that describe the experience of peer violence and, in the same way, 17 variables that describe the perpetration of peer violence in the

last year [51]. Participants answer on a 6-point scale, from 0 – “Never”, 1 – “Once”, 2 – “Several times a year”, 3 – “Once a month”, 4 – “Once a week” and 5 – “Several times a week”. The reliability of both scales in this sample is high, where the coefficient of internal consistency for the subscale of experiencing peer violence is Cronbach $\alpha = 0.969$ and $.86$, and for peer violence perpetrated $\alpha = 0.949$. The result on the subscales of perpetrating and experiencing peer violence is considered as the total sum of all responses on a particular scale, and the result can be from 0 to 85. Furthermore, for the purposes of this work, the research participants were grouped according to categorization of roles of committing and experiencing violence, where students whose scores are equal to or higher than 2 (several times in the last year) on both scales of committing and experiencing peer violence are assigned the role of both victim and perpetrator. Students who have answers 0 and 1 (never and once) on both scales are categorized as participants who have no role in peer violence. Furthermore, students who have answers equal to or more than 2 (several times) on the scale of committing peer violence, and 0 and 1 on the scale of experiencing it, are assigned the role of perpetrator, while vice versa, students who have answers equal to or more than 2 (several times) on the scale of experiencing it and on the scale of actions 0 and 1 (never and once) the role of a victim of peer violence was assigned. For the purposes of logistic regression analysis, the scales of committing and experiencing peer violence were dichotomized, in such a way that students who have never done anything to someone or never experienced anything, are marked as 0- never participated, while students who have done or experienced something at least once are marked with 1 (experienced/perpetrated at least once).

The European Cyberbullying Intervention Project Questionnaire (ECIPQ) [23] consists of 22 items that examine different forms of cyberbullying, such as identity theft, posting pictures and videos, indirect violence etc. in the previous two months. The questionnaire contains two subscales (cyber-victimization, i.e. experiencing cyberbullying and cyber-aggression, i.e. committing cyberbullying) that measure the same items related to certain online behaviours, but in the first scale from the perception of the person experiencing it (11 items), and in the second those which constitutes violence (11 items). The items are answered on a 5-point scale (0 – “Never”, 1 – “Once or twice”, 2 = “Once or twice a month”, 3 – “Once a week” 4 – “Several times a week”). The internal reliability of both scales in this cause is very high, where Cronbach α for the sub-scale of experiencing cyberbullying is $\alpha = 0.897$ and for the subscale $\alpha = 0.885$. According to the result on the scales of experienced and perpetrated cyberbullying, the respondents are grouped according to involvement in one of the roles: those who experience, commit, and experience and commit violence. Therefore, participants whose results are equal to or higher than 2 (once a month) on any part of the experiencing scale and with results equal to or lower than 1 (once or twice) on all parts of the doing scale, are considered students who experience violence. On the other hand, young people who commit violent behaviour in the virtual sphere are those whose results are equal to or greater than 2 (once a month) on any part of the cyber-aggression scale and equal to or lower than 1 (once or twice) in all items of the scale victimization. In addition to them, young people who both experience and commit violence are participants with results on any part of both scales (aggression and victimization) equal to or greater than 2 (once a month) [23]. For the purposes of logistic regression analysis, the scales of committing and experiencing peer violence were dichotomized, in such a way that students who have never done anything to someone or never experienced anything, are marked as 0- never participated, while students who have done or experienced something at least once are marked with 1 (experienced/committed at least once).

SAMPLE

108 students participated in the research, mostly male ($N = 95$, 88%), average age 15,7 years (min = 13 years, max = 18 years). As shown in Table 1, the majority of students live with both parents, where most of the parents have completed high school and where students estimate that they live in families with similar financial capabilities as others.

Furthermore, the majority of the first and third grade students of the four-year vocational program took part in the research, and at the end of the last school year (school year 2020/2021), they achieved good and very good results, Table 2.

Table 1. Presentation of students' sociodemographic data.

Variable		Total	
		<i>n</i>	%
Gender	male	95	87.96
	female	13	12.04
Age	13 years	2	1.85
	14 years	7	6.48
	15 years	46	42.59
	16 years	19	17.59
	17 years	30	27.78
	18 years	4	3.70
With whom the student lives	I live with both parents	82	75.93
	I live with one parent	24	22.22
	I don't live with my parents	2	1.85
Educational status of mother	Unfinished elementary school	0	0.00
	Completed elementary school	5	4.63
	Finished high school	79	73.15
	College or university, college, postgraduate	17	15.74
	I do not know	7	6.48
Educational status of father	Unfinished elementary school	0	0.00
	Completed elementary school	7	6.48
	Finished high school	73	67.59
	College or university, college, postgraduate	17	15.74
	I do not know	11	10.19
Assessment of the financial capabilities of your family	Much less than other families	1	0.93
	Less than other families	5	4.63
	Like other families	84	77.78
	More than other families	14	12.96
	Much more than other families	4	3.70

Table 2. Presentation of students' school data.

Variable		Total	
		<i>n</i>	%
The curriculum the student attends	three-year vocational	20	18.52
	four-year vocational	88	81.48
Grade	first grade	51	47.22
	second class	10	9.26
	third grade	45	41.67
	fourth grade	2	1.85
Academic achievement from the last academic year	insufficient	2	1.85
	sufficient	2	1.85
	good	34	31.48
	very good	53	49.07
	excellent	17	15.74

RESULTS AND DISCUSSION

When evaluating the school environment, the students generally described the school as a safe environment, a place where teachers or friends will help them if they have a problem, and as a place to socialize with friends, where they generally get along well with other students, treat each other well and give mutual support (Table 3). We find similar results in previous research, where it was determined that Croatian students are satisfied with school and that they feel a high level of support from students in their class [3, 4].

Table 3. Student assessment of the school environment.

	Mean	SD	I disagree, %	I mostly disagree, %	I neither agree nor disagree, %	I mostly agree, %	I strongly agree, %
I feel safe at school	3.93	1.243	4.63	13.89	11.11	25.00	45.37
I feel safe on the way to school and from school to home	4.19	1.203	5.56	8.33	5.56	22.22	58.33
If I have a problem at school, one of the teachers will help me	3.99	1.308	8.33	8.33	10.19	22.22	50.93
If I have a problem at school, one of the other children will help me	3.81	1.188	5.56	11.11	14.81	34.26	34.26
I have enough friends	4.55	1.027	3.70	5.56	0.93	12.04	77.78
My friends mostly treat me well	4.33	1.111	4.63	5.56	5.56	20.37	63.89
Me and my friends get along well	4.49	1.009	3.70	4.63	1.85	18.52	71.30
If I have a problem, I have a friend who will support me	4.36	1.131	3.70	7.41	7.41	12.04	69.44
I am satisfied with how I am doing as a student	4.09	1.294	7.41	8.33	9.26	17.59	57.41

According to the responses on the peer violence scales, 44,44% of students participated in peer violence, 40,74% of students experienced and 25% committed peer violence. Categorization of the students by role identified that 55,56% do not participate in violent behaviour, 19,44% students experience violence, 3,70% behave violently towards others, and 21,30% both experience violence and behave violently (Figure 1, Table 6). The most common recorded behaviours are verbal insults and belittling, loud and aggressive addressing and gossiping, Table 4. In this research, a higher proportion of students participating in peer violence was recorded than in the previously mentioned epidemiological studies [4, 17, 18], but one should keep in mind the methodological limitations and convenient sample with specific determination of the population of male vocational students. Studies so far shows that occurrence of violence increases with age [18, 21] as well as those male students are more likely to participate in violent behaviour [19-21].

Furthermore, 22,22% of students participate in cyberbullying and 10,19% experience cyberbullying, 1,85% commit cyberbullying and 10,19% both commit and experience violent behavior via the Internet and modern technologies (Figure 1, Table 6).

The most common violent behaviours' that students experience online and how they behave towards others are writing ugly messages directly and indirectly and sending threatening messages, Table 5. The prevalence of cyberbullying in this research is consistent with previous

findings where the same questionnaire and methodology of grouping students according to roles in cyberbullying was used [24, 25].

Table 4. Experiencing and perpetrating peer violence.

	Mean	SD		Mean	SD
Someone yelled or screamed at you very loudly and aggressively	0.71	1.340	You yelled or screamed at someone very loudly and aggressively	0.50	1.115
They insulted you by calling you derogatory names	0.93	1.599	Insulted them by calling them derogatory names	0.62	1.399
Encouraged other peers to insult or humiliate you in other ways	0.53	1.293	Encouraged others to insult or otherwise humiliate one of them	0.26	0.900
They gossiped about you	1.20	1.610	Gossiped about them	0.63	1.242
Write graffiti or messages (e.g. on a bench, pieces of paper, in the toilet, etc.) to insult or humiliate you	0.20	0.925	Wrote graffiti or messages (e.g. on a bench, pieces of paper, in the toilet, etc.) to insult or humiliate them	0.07	0.447
They threatened to hit you or hurt you	0.46	1.147	You threatened them that you would hit them or hurt them	0.24	0.722
Hit you or pushed you on purpose	0.57	1.217	Hit them or pushed them on purpose	0.27	0.838
Hit you with an object or fist (beat you up)	0.24	0.916	Hit them with an object or fist (beat them up)	0.07	0.447
Refused to talk to you (pretended you weren't there)	0.39	1.075	Refused to talk to them (pretended as if they weren't there)	0.39	1.092
They excluded you from the society of your peers	0.35	1.008	Excluded them from the society of peers	0.20	0.851
Asking you for money or forcing you to buy something you don't want	0.37	1.173	Asked them for money or forced them to buy something they didn't want	0.17	0.677
Deliberately destroying or taking away your belongings	0.35	1.053	Deliberately destroyed or took away their belongings	0.10	0.595
Forced or forced to do something you don't want to or isn't allowed	0.25	0.987	Forced or forced them to do something they don't want to or isn't allowed	0.12	0.652
Harassed you sexually (e.g. commented, touched, showed private parts of the body, etc.)	0.20	0.894	Asked one of them to show you intimate parts of the body, showed him/her yours against his/her wishes or sexually harassed him/her in any other way	0.09	0.589
Use messages via the Internet or mobile phone to insult or humiliate you	0.31	1.027	Used messages via the Internet or mobile phone to insult or humiliate them	0.17	0.730
Use Facebook or the Internet to insult or humiliate you	0.31	1.001	Used Facebook or the Internet to insult or humiliate them	0.25	0.948
Filmed or photographed you in situations that were humiliating or embarrassing for you	0.44	1.248	Recorded or photographed them in situations that were humiliating or embarrassing for them	0.20	0.806

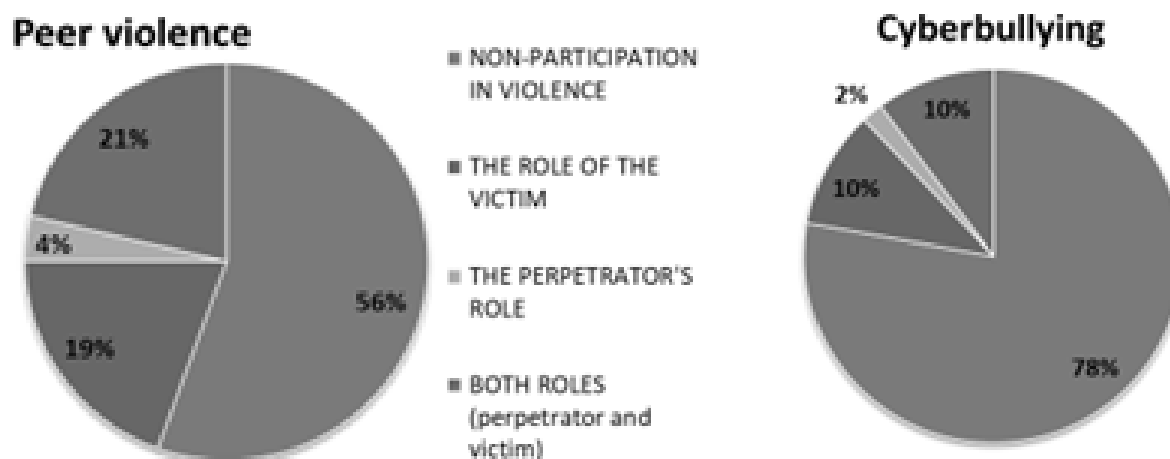


Figure 1. Roles in peer violence and cyberbullying.

Table 5. Experiencing and perpetrating cyberbullying.

	Mean	SD		Mean	SD
Someone said nasty things to me online or via text message	0.54	1.164	I've said mean things to someone online or texted	0.40	1.004
Someone has said nasty things about me to other people online or via text message	0.50	1.037	I have said bad things about someone to other people online or through text messages	0.27	0.827
Someone threatened me online or via text message	0.36	0.952	I have threatened someone online or via text message	0.19	0.763
Someone stole my private information online?	0.07	0.297	I stole someone's private information online	0.05	0.286
Someone "hacked" my profile and posed as me	0.12	0.380	I "hacked" someone else's account and pretended to be that person	0.05	0.286
Someone used my personal identity without my permission and created a fake profile	0.06	0.438	I created a fake profile and pretended to be someone else	0.05	0.286
Someone posted my private information online without my permission	0.08	0.476	I posted someone's private information online without their permission	0.03	0.214
Someone posted an embarrassing video or photo of me online	0.12	0.524	I posted someone's embarrassing video or photos online	0.03	0.214
Someone has altered my photos online	0.07	0.403	I edited someone's photos online	0.06	0.330
Others have turned me off or ignored me on social networks or chat	0.18	0.624	I blocked or ignored someone on social networks or chat	0.14	0.555
Someone was spreading gossip about me on the Internet	0.25	0.685	I spread gossip about others on the Internet	0.03	0.214

Table 6. Roles in experiencing and perpetrating peer violence and cyberbullying.

	Roles peer violence		Roles cyberbullying	
	<i>n</i>	%	<i>n</i>	%
Not included in violence	60	55.56	84	77.78
Victim	21	19.44	11	10.19
The perpetrator	4	3.70	2	1.85
Both roles (perpetrator and victim)	23	21.30	11	10.19
Total	108	100.00	108	100.00

Spearman's correlation of the individual results (Table 7) indicates that the results on the scales of doing and experiencing peer violence are statistically significantly and moderately negatively related to satisfaction with the school environment, while the results of cyberbullying are significantly negatively related, but this relationship is low. In other words, students who experience and/or commit some of the observed forms of violence perceive lower subjective well-being and satisfaction with the school environment, and here we note that experiencing peer violence has the greatest impact on satisfaction with the school environment. Furthermore, it is evident from the results that there are moderate to high and statistically significant correlations between the answers about participation in any observed violence, that is, students who participate in one form of violence, more often commit and/or experience other forms of violence. The graphic representation (Figure 2) of the conducted network analysis points to the same conclusions. These findings are in line with previous findings, where it was found that bullying negatively affects satisfaction with school and lower attachment to school [8, 9], and consequently can cause a number of other difficulties for students, such as learning problems, worse self-assessment of own health and general life satisfaction [7, 10]. Also, previous findings indicate that students who participate in one form of violence more often commit or experience violence in both real and virtual environments [52, 53].

Table 7. Spearman's rho correlation of responses (SSE – satisfaction with the school environment, EPV – experiencing peer violence, CPV – committing peer violence, EC – experiencing cyberbullying, CC – committing cyberbullying).

		Mean	SD	1	2	3	4	5	6	7	8
1	gender	1.12	0.327	-							
2	age	15.74	1.105	-0.157	-						
3	grades	3.75	0.810	0.031	-0.314**	-					
4	SSE	37.74	7.938	-0.077	-0.200*	0.265**	-				
5	EPV	7.82	16.225	0.163	0.013	-0.176	-0.515**	-			
6	CPV	4.36	10.945	-0.056	0.060	-0.026	-0.373**	0.652**	-		
7	EC	2.36	5.347	0.012	-0.096	-0.083	-0.276**	0.602**	0.576**	-	
8	CC	1.27	3.969	-0.030	0.033	-0.004	-0.207*	0.467**	0.663**	0.688**	-

In order to explain the observed set of variables, a logistic regression analysis was performed. Variables of committing and experiencing peer and cyber violence were introduced as criteria variable and created as dichotomous (yes/no), while the predictor variables included in the analysis were age, gender, school success, satisfaction with the school environment, and participation in committing and experiencing peer and cyberbullying except for the particular form of violence that was observed as a criterion.

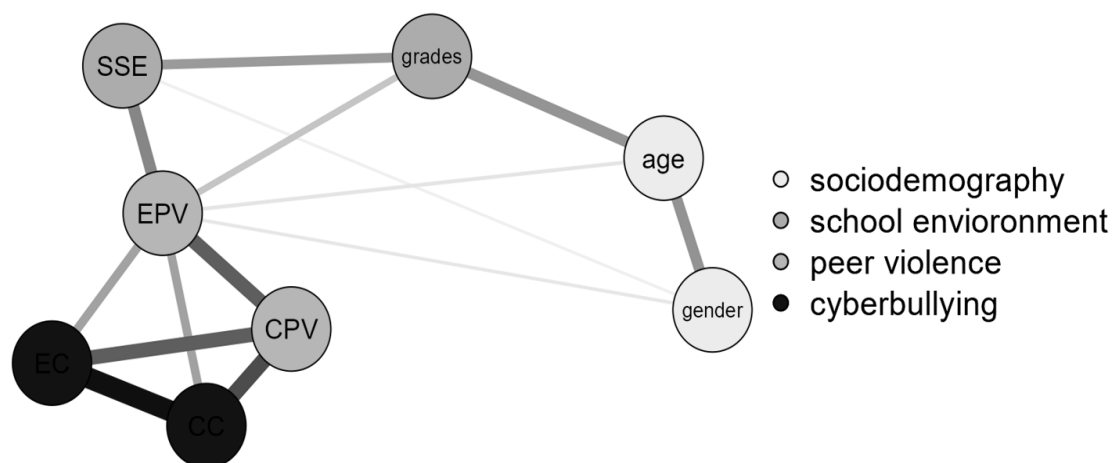


Figure 2. Network analysis of some determinants of satisfaction with school environment, peer violence and cyberbullying.

Logistic regression analysis on a sample of 108 high school students found that the selected set of predictors statistically significantly explains the experience of peer violence ($\chi^2(7) = 45,587$, $p < 0,01$). The total percentage of explained variance in experiencing peer violence is 46,5% (Nagelkerke R^2), and 79,6% of respondents were correctly classified.

Satisfaction with the school environment and perpetration of peer violence contribute statistically significantly to the experience of peer violence. A higher probability of experiencing peer violence is associated with lower satisfaction with the school environment and more frequent acts of peer violence.

The selected set of predictors statistically significantly explains the perpetration of peer violence ($\chi^2(7) = 66,309$, $p < 0,01$). The total percentage of explained variance of committing peer violence is 67,9% (Nagelkerke R^2), and 91,7% of respondents were correctly classified. Perpetrating peer violence contributes to experiencing peer violence and perpetrating and experiencing cyberbullying. A higher probability of committing peer violence is associated with more frequent experiences of peer violence and more frequent acts and experiences of cyberbullying.

Experiencing cyberbullying was also statistically significantly explained by the selected set of predictors ($\chi^2(7) = 70,746$, $p < 0,01$). The total percentage of the explained variance of experiencing cyberbullying is 75,5% (Nagelkerke R^2), and 91,7% of respondents were correctly classified. The experience of cyberbullying is statistically significantly contributed to by the age of the respondents, as well as experiencing and perpetrating peer violence, in such a way that older students and students who more often experience and more often perpetrate peer violence are more likely to experience cyberbullying.

Finally, through logistic regression analysis, it was determined that committing cyberbullying was statistically significantly explained by the selected set of predictors ($\chi^2(7) = 37,498$, $p < 0,01$). The total percentage of the explained variance of committing peer violence is 56,3% (Nagelkerke R^2), and 89,8% of respondents were correctly classified. Committing cyberbullying contributes statistically significantly to committing peer violence, i.e. a higher probability of committing cyberbullying is associated with more frequent committing of peer violence.

These results show that cyberbullying and peer violence are similar phenomena, as confirmed by some earlier research, e.g. [32, 33], but also that experiencing peer violence is associated with lower satisfaction. school environment unlike other forms of violence. These findings support previous conclusions that classic peer bullying is usually considered a problem in the school environment [54].

CONCLUSION REMARKS

This study provides an insight into the nature of peer violence and cyberbullying mainly in the male student population from vocational school in Croatia and contributes to the fact that peer violence and cyberbullying are not two different phenomena and that they have much more similarities than differences. Study is also emphasizing importance of conducting research within specific population of children identifying risks and gaining knowledge for creation of preventive strategies. This research was conducted in a vocational high school in the technical field and brings important in-sights about prevalence of peer and cyberbullying and the connection of violence with some determinants of satisfaction with the school environment. Boys in vocational schools are exposed and involved in peer violence and cyberbullying and violent episodes nit there is still part of the students that are not involved but most probably are witnessing violent episodes and creating the culture of violence on daily bases, normalized occurrence and not the extreme and rare event.

The first hypothesis predicts how the forms of violence will be interconnected. Looking at the individual results, a moderate positive statistically significant correlation of all observed variables was observed, with the fact that committing and experiencing peer violence, perpetrating and experiencing cyberbullying, and perpetrating peer violence with perpetrating and experiencing cyberbullying are more strongly related, so we can conclude that the first hypothesis was confirmed. The results of the research indicate that individually observed experiencing and committing peer and cyberbullying is negatively related to satisfaction with the school environment, and when we take into account the entire set of predictor variables, then a higher probability of experiencing peer violence is associated with lower satisfaction with the school environment, which partially confirms the second hypothesis.

Studies constantly confirms that violent behaviours among peers are present in Croatian schools, that experiencing peer violence directly affects satisfaction with the school environment, and that experiencing and perpetrating peer violence is interconnected, as is the context of the real and virtual environment.

Therefore, the question arises, are we doing enough to prevent violent behaviour and to enable children and young people to grow up healthy and with adequate level of well-being? In Croatian schools, numerous preventive programs are implemented both with the aim of preventing violent behaviour and with the aim of preventing cyberbullying, and the results of evaluation studies on the success of preventive intervention are available only for some, which show low to moderate success rates or without success. This analysis provides an insight into the nature of cyberbullying and peer violence mainly in the male population of students and contributes to the fact that peer violence and cyberbullying are not two different phenomena and that they have much more similarities than differences. These results support some previous guidelines, where the need for complex preventive programs that would include the prevention of peer and cyberbullying is emphasized. Prevention science has developed so far, many principles of effectiveness that should be applied during preventive intervention, but we must also not ignore the role of parents and schools. The success of the preventive program is contributed by the involvement of parents and teachers, who can actively promote non-violent solutions and behaviour through the family and school environment.

Bearing in mind the previous knowledge about effective preventive interventions, these findings can be an incentive for the creation and implementation of preventive programs that combine peer and cyberbullying.

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