



Article

# Cyberbullying in COVID-19 Pandemic Decreases? Research of Internet Habits of Croatian Adolescents

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Abstract: Online contacts and other activities on the Internet came into focus given the increased use during the COVID-19 pandemic. The online environment is a setting for problematic Internet use, including cyberbullying, and research so far shows that inclusion in cyberbullying depends on the amount of screen time. Increases in screen time during the pandemic could affect the growth of the prevalence rates of children's involvement in cyberbullying. The aim of this paper is to compare the Internet habits, cyberbullying and parental role in children's online activities before and during the COVID-19 pandemic, when the use of the Internet increased due to online classes and implemented measures to prevent the spread of the infection. The Institute of Public Health of Split-Dalmatia County conducted a quantitative online survey of Internet habits and problematic Internet use in two waves in 2017 and 2020 with adolescents from 12–18 ( $N_{2017}$  = 536;  $N_{2020}$  = 284). Research included adherence to ethical standards of research with children. An online activity questionnaire for children, a questionnaire of parental behaviors and the European Cyberbullying Intervention Project Questionnaire—ECIPQ were used. The results of the research point out that cyberbullying rates in the pandemic decreased. The results show that the cumulative effect of parental monitoring is medium with approximately 5% of explained variance for experiencing and 6% for committing violence. The similar set of predictors is statistically significant in both regressions. Parental actions of monitoring applications, informing children and monitoring search history are identified as protective factors for committing or experiencing cyber violence. These findings are important for understanding the effect of the general digitization of society, which leads to an extensive increase in the use of online content and various digital tools, and the role of the parents, especially as protective potential for cyberbullying among children.

Keywords: cyberbullying; decrease; COVID-19; parental behaviors; child online activities



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# 1. Introduction

Almost the entire population of children and youth participate in at least some online activities while during the COVID-19 pandemic online communication was confirmed as the normative standard of their generation. In south-east Europe, statistic indicators and research before the recent pandemic indicate that most school-age children use the Internet every day [1]. Today, experts agree that through the online environment adolescents realize their informational, social, emotional and other needs [2]. Digital well-being is an important aspect of child general well-being. Online communication and presentation are very significant for the child itself and Internet usage presents an important aspect not only of their subjective perceptions about life and others but also of their self-image [3,4]. Considering the broad impact of the digital environment on people's lives, especially children and youths, it is important that digital well-being balance the impact of technologies and digital services on people's mental, physical and emotional health [5].

Child digital well-being includes several domains [6] starting from the following: (1) availability of the Internet, devices and digital competence to use devices and tools;

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(2) the Internet as an educational tool and platform for accessible and inclusive education; (3) the online environment as a place to socialize with friends and peers and other people and spend structured and unstructured leisure time; and (4) a tool for digital services and specific interventions available to the broader public as well as specific populations. However, the most important prerequisite for achieving and maintaining the digital wellbeing of children is safety from violence, cyberbullying, harassments, abuse, harmful content, fraud, deception and online exploitation. Some studies confirm the positive impact of online communication through social media. For example, Vossen and Valkenburg in their longitudinal study point out that adolescents' social media use improved both their ability to understand (cognitive empathy) and share the feelings of their peers (affective empathy) [7]. There is no doubt that the Internet contributes in many ways to the realization of children's well-being; however, it is a platform for many risky behaviors and harmful content. Cyberbullying falls under behaviors that are broadly defined by the common name problematic use of the Internet (PUI) [8]. Precisely, these parts of the problematic online relationships of high school students, cyberbullying behaviors and parental mediation of children's online activities, will be a central part of this paper.

### 1.1. Cyberbullying: Challenges of Conceptualization and Operationalization

Research in the field of cyberbullying has been present for 15 and more years and experts have been unable to agree whether cyberbullying is just a prolonged form of bullying or a completely new form of violent behavior in the online environment and a phenomenon in itself [6,9-14]. The most-used definition of cyberbullying is Patchin and Hindujas's definition that refers to cyberbullying as "wilful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices" [15] (p. 615), with clear reference to Olweus's definition of bullying in the physical environment [16]. There is strong evidence that cyberbullying has some specifics when we talk about the recurrence of a violent event, the source of power that prevails in the online world and even the feeling of anonymity that perpetrators have. It is complex to define repetition in the online world, given that repeated traumatization can occur during various activities, including each new view of a particular content, and commenting, liking or sharing content with another person. Once content appears in the online world, it spreads quickly and it is difficult to control it. Power in the online world is guaranteed by a higher level of digital competencies and information literacy, as well as the ability to process and publish various content. The online world allows those children who could not dominate in the physical world and among peers in groups to dominate in the online world since the power source changes to digital competencies. Superiority in the online environment is also demonstrated by controlling topics in online discussions, provoking conflict by sending inappropriate messages or excluding someone from the online activity, group or online game [17–20].

The crucial point in understanding cyberbullying refers to what are the consequences and what are the detrimental effects that such behavior has on the victim and on the perpetrator. Some authors, such as Vandebosch and Van Cleemput and Ovejero et al., state that the harm as a result of violent behavior is often more difficult to identify in the online world [21,22]. Online communication mostly lacks the transaction in communication patterns since the reaction of the victim is not visible and the feedback is not simultaneous. This allows the perpetrator to disassociate from the violent event and experience an emotional distance from the victim.

It should be emphasized that cyberbullying research is based on different definitions and measured by different operationalisations and instruments, which makes comparisons impossible, but systematic monitoring of cyberbullying measurements in certain areas can provide useful insight into trends in violence and online violence as important domains of children's well-being [9,12]. One of the most important parts of well-being as well as digital well-being is the subjective perception of life and relationships. Considering the children's perspective, it is of the highest importance to think about their view of cyberbullying. Some of the studies show that children and adults do not experience violent events with equal

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intensity, where children evaluate cyberbullying experiences as significantly milder than adults [23]. Furthermore, it seems that children report that the identity of the perpetrator is significant. Although anonymity has been cited as a factor that makes cyberbullying a "unique phenomenon" resulting in different challenges to traditional bullying, this refers to the feeling of anonymity for both the perpetrator and the victim. Some studies confirm that cyberbullying may be encouraged by traditional bullying and vice versa since perpetrators and victims of cyberbullying usually know each other offline [6,11,24,25]. The findings of several studies point out that about half of the participants or more know who the perpetrator is, or at least they know that they come from their school [24,26–28]. These complex peer relations certainly should be checked by future research and, in accordance with the findings, the measurement of cyberbullying and monitoring of this phenomenon should be adjusted respecting the children's perspective.

## 1.2. Cyberbullying in the COVID-19 Pandemic—Research Results from Different Countries

Cyberbullying was extensively researched together with other aspects of Internet usage and problematic use of the Internet. Theoretical approach such as routine theory and accompanying research explored the risks of the extensive use of the Internet and other aspects of problematic usage of the Internet. Indeed, research prior to COVID-19 indicated that a higher frequency of Internet use was associated with increased youth reports of cyberbullying and cybervictimization [18,29,30]. Experts in the field of the problematic usage of the Internet as well as esteemed organizations such as Interpol stated that various forms of PUI will grow due to an increase in screen time. Moreover, children look for alternative ways to socialize online, through games, chats and social networks, and are not necessarily aware of any risks of harmful online contacts or content [31,32].

Preliminary studies of cyberbullying during COVID-19, however, show somehow different as well as opposite trends. Bacher-Hicks et al. stated that the COVID-19 pandemic radically changed the context for bullying dynamics [29]. Research systematically shows decreases in bullying rates around the world since the lockdown and the e-learning environment was a protective factor for victims who experience bullying in physical environments, mostly schools [33–36]. A study from the United States (N = 452 adolescents) found that around 50% of students indicated that they perceive that cyberbullying has stayed the same as before the pandemic and almost  $\frac{1}{4}$  reported a decreased prevalence of cyberbullying [37]. Preliminary findings of Patchin and Hinduja from the prospective studies of 2500–4700 participants on nationally representative samples collected in 2016, 2019 and 2021 confirm that cyberbullying is a relatively stable problem in United States [33]. A decrease in cyberbullying was found in a Spanish study conducted with 2083 children and adolescents in Galicia compared to a study in the same geographic area prior to the COVID-19 lockdown [34]. A study by Milosevic et al., which included children (N = 504) and parents (N = 504) in Ireland, found increased rates of cyberbullying. Ditch the Label's descriptive (non-scientific) study on 13,387 children from 12 to 18 years old found a 25% yearly increase in bullying experiences [38,39].

The latest results in cyberbullying research on the pandemic preliminarily point to the trend of decreases in cyberbullying rates in different countries. Moreover, Bacher-Hicks et al. found that bullying and cyberbullying in google searches in lockdown dropped 30–40% and they state that "Google Trends data provide a unique opportunity for real time surveillance of bullying, while posing no risk to children and families" [29]. Canadian research on 6587 students from Vaillancourt et al. shows slight reductions in cyberbullying and argues that this could be related to the close monitoring of virtual activities by teachers and parents [36]. UNICEF research in Canada is in line with the result of the 17% reduction in online bullying during the pandemic [40]. Study in Korea by Shin and Choi conducted in two research waves in 2019 (N = 4779) and 2020 (N = 4958) identified a 4.1% drop in cyberbullying experiences and a sharp decline in the cyberbullying perpetration rate of 8.5% compared to the previous year [41]. Finally, Repo et al. in Finland combined two large studies of a KiVa survey from 2019 (N = 43,216) and a school lockdown survey from

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 $2020 \ (N = 34,771)$  and state that on average one third of students that were victimized before lockdown continued to be victimized during lockdown and the prevalence of cyber victimization in 2019 and during the lockdown in 2020 shows a decrease in cyber victimization in all grades [35]. The question arises as to whether the trend of cyberbullying is more dependent on trends in bullying and peer relationships among peers who know each other in general or with the use of the Internet and features of the network environment as suggested by previous research? These interesting findings show the need for further studies of cyberbullying trends, its association with bullying and peer dynamics in group contexts such as school and in virtual environments, as well as the current pandemics and extensive Internet use.

#### 1.3. Parental Role and Cyberbullying Experiences

The Internet and broad usage of modern technologies affect all segments of our environment and thus affects parenting. Today's parenting role has been expanded with the regulations, attitudes and risks of the online environment and responsibilities of the content and the extent of Internet use. According to Eukids online, in most of the countries, most of the children state that their parents engage in active mediation at least sometimes, which means that they talk to them, encourage them and help them and suggest ways to use the Internet safely. The children also turn to their parents when they are in trouble and parents are their main source of support along with friends and teachers [1].

Available research findings suggest that parental mediation may reduce cyberbullying. Wright, Sam et al. and Katz et al. found that different types of parental mediation and parenting style are associated with less cyberbullying [42–44], while Rega et al. enhanced that parental mediation may prevent cyberbullying, especially among children rather than adolescents [45]. Parental behaviors on the Internet can be divided into active and restrictive mediation during children's online activities [46]. Active mediation includes guidance and advice given by parents to children through active discussions about their online activities. It is a two-way process where active communication about problems that arise in the online world helps children to form critical opinions about the online content and become more aware of the risks of the online world [47]. Some authors state that active mediation can also mean physical presence in a way that parents stay close or sit with their children while they use the Internet as well as parents who explore and share online experiences with their children. Active mediation includes dialogue and co-use, and sharing technology, devices and online content, which is challenging given the level of digital competencies of children and parents and considering that children often have more knowledge about online tools than their parents. However, active mediation is enhanced when children experience something disturbing online [48]. Studies confirm that parents are the main source of help if children have problems on the Internet, and younger children and girls are more likely to say that they talk to their parents about their online activities [1].

Another type of parental mediation is restrictive mediation of the use of child and youth technology and it includes the establishment of rules, the obligation to abide by them and the consequences if they do not [46,49]. This form includes controlling children's digital activities by limiting usage time, frequently browsing search history or reacting when a child uses a smartphone for too long. Restrictive methods include technology restrictions, when parents install applications or other technological tools to control their child's activities [50]. While inadequate parental control was found as a risk factor for cyberbullying victimization [51], Mesch stresses the need for more parental participation to reduce the risks of cyberbullying since his research showed that conversations about useful web content decreased the risk of exposure to online bullying [52]. As the research shows, some aspects of parental behavior when it comes to children's online activities could be a protective factor in cyberbullying experiences but these findings should be broadened with research in the field.

The aim of this paper is to present the relevant findings of the research of children's Internet habits, involvement in cyberbullying and perception of the parental role in chil-

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dren's online activities before and during COVID-19 pandemic, when the use of the Internet increased due to online classes and implemented measures to prevent the spread of the infection. The extension of Internet usage as part of routine computer usage was explored in the research that implemented routine activities theory to a cyberbullying phenomenon [18,53,54]. Research findings continuously show that the frequency of Internet usage is a significant predictor of cyberbullying and cyber victimization. Hinduja and Patchin found that cyberbullying is associated with computer proficiency and time spent online [55]. Navarro et al. found that Internet use, specifically online communication, increases the likelihood of cyberbullying victimization [56]. Park et al. found that increased time spent online and on social media is associated with increased frequent Internet use and is correlated to online bullying, victimization and witnessing [57]. Some actual research confirming these findings and the study by Mangarin and Montano state that there is a significant association between Internet usage and cyberbullying while Park et al. found that the more time students spend online, the more likely they are to cyberbully, but only if they have a high level of victim sensitivity [57,58]. These findings suggest that more time spent online can lead to more exposure to cyberbullying. Moreover, according to the empirical findings so far, we expect that the frequency of cyberbullying will increase due to the increase in Internet usage in pandemic conditions (H1).

Rega et al., in their literature review, conclude that, in general, parental mediation decreases the risk of cyberbullying, especially among children [45]. Chang at al. states that adolescents who perceive lower levels of parental attachment are more likely to cyberbully among exposure to other risky behaviors, while Mesch stresses that more active parental participation can the reduce risks of cyberbullying [52,59]. It should be emphasized that there are no available research results on the impact of parental upbringing in the online environment, and that children generally believe that they have more digital competence than their parents behavior but also the fact is that the pandemic context also positively affected the digital competencies of the adults around children, such as their parents and teachers [60,61]. Considering research findings in the field, we expect that parental mediation strategies influence adolescent engagement in cyberbullying and cybervictimization in such a way that the active mediation strategies of parents reduce the involvement in online violent behaviors of children (H2). This manuscript will provide interesting insight into peer dynamics in relation to cyberbullying as well as the practical implication for the education of parents and other significant adults in a child's life. The results of the two research waves, the first wave in 2017 and the second during the lockdown in 2020, enable one of the first insights into the impact of the COVID-19 pandemic and increased Internet use on the life of the children and their online activities in Croatia. Considering the particularly significant historical period of the pandemic, the contribution of this research is to take advantage of the data that were collected immediately before general lockdown when the second wave was implemented, which can be seen as an experimental condition of general and comprehensive digitization. This research provides relevant insight into how parents' activities are related to children's online behaviors in this specific situation, as well how the context of using that environment can be significant for the creation of preventive activities in the field. One of the contributions of this work in creating future prevention policies is, in particular, the importance of tailor-made content for activities with parents, given that the research findings point to the protective influence of parents when their children are involved in cyberbullying.

# 2. Materials and Methods

Both research waves were conducted by the Institute for Public Health among elementary and high school students in the area of Split-Dalmatia County (SDC) with its administrative centre in Split, which is the second-largest city in the country. Both research waves were conducted with the consent of the Ethics Committee of the Institute of Public Health of SDC, the consent of the Croatian Ministry of Science and Education, the Local Administrative Department for Education, Sports, Culture and Technical Culture of SDC.

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Based on the obtained consent and information about the research, the principals of the selected schools expressed their agreement with the participation of students in the research. During the preparation of the research and its implementation, the Code of Ethics in Research with Children was applied [62,63]. The parents of children were informed about the aim and purpose of the research and were asked to express their consent (for children younger than 14) or disagreement (for students older than 14) with their signature. Students were also made aware that the research is anonymous, voluntary, that the data are confidential and secure, that it is important that they answer questions honestly and, ultimately, that they can quit at any time. In order to minimize the potential risk of adverse effects of the research (e.g., feelings of discomfort or anxiety), the contact details of the organizations who provide counselling for the children and youth, where students can seek help, were listed at the end of the questionnaire.

The first wave of research was conducted during 2017 and the second wave was conducted in 2020 during the lockdown in December. An online questionnaire was used to collect the data, and was filled in individually by the students during their school/classroom stay, which lasted approximately 20 min. During the second wave of data collection (2020), many schools held online classes due to epidemiological measures caused by COVID-19, making it difficult to organize and complete the collection of data in classrooms in such circumstances. The first wave of research was conducted as an epidemiological study conducted in one county. Three years after the first wave, during the pandemic, the use of the Internet for online classes was the biggest challenge for children and parents. Therefore, the same questionnaire was used again in the same schools within the same age group in order to make the data mutually comparable.

#### 2.1. Measures

This research was part of the broader study about the online risk activities of the children. The questionnaire relevant for the part of the research presented in this paper contained several topics, a socio-demographic questionnaire designed for the purpose of this survey, as well as a questionnaire of parental behaviors, an adapted online activity questionnaire for children [18] and the European Cyberbullying Intervention Project Questionnaire (ECIPQ) [64] (all permissions to use were granted). The online questionnaire was the same for both waves, except for several questions about experiences with online teaching that were added in the second wave.

The socio-demographic questionnaire created for the purpose of this research included questions about the participant's gender and age, class and the type of school attended.

The online activity questionnaire for children was used in the first wave with the consent of the authors, Vejmelka et al. [18]. The questionnaire contains 16 items that examine the time spent on the Internet in certain activities (e.g., social networks, chat rooms, Internet forums, instant messaging, etc.) via mobile phone and via computer/laptop, ranging from "0—never" to "5—more than 4 h". For the purpose of the second research wave, the questionnaire was modified by adding the activity of using e-learning systems (such as Microsoft Teams, etc.). The answer scale was also modified from "0—never" to "6—8 or more hours a day". Using this questionnaire, it is not possible to determine the total time that students spend using the Internet, because children and young people can use a large volume of content at the same time.

The European Cyberbullying Intervention Project Questionnaire was used to measure cyberbullying, and it consists of 22 items that examine different forms of online behavior that occurred in the previous two months [64]. These 22 items actually form two subscales (cybervictimization and cyberaggression), which both measure the same items associated with certain online behaviors, but from opposite perspectives: as a person who is exposed to or who experiences certain behaviors of other Internet users (11 items), and as a person who behaves in a certain way towards other Internet users (11 cases). Students were able to answer in a range of 5 points: 0 (never); 1 (once or twice); 2 (once a month); 3 (once a week); and 4 (more than once a week). Based on the results on both scales, students were divided

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into categories according to their participation in cyberbullying: victims, perpetrators and victims/perpetrators at the same time. Participants whose scores were equal to or greater than 2 (once a month) on any item of the cyber-victimization subscale and less than or equal to 1 (once or twice) on any item of the cyber-aggression subscale were considered cybervictims. The perpetrators of cyberbullying were those children whose scores were equal to or greater than 2 (once a month) on any item of the cyber-aggression subscale and less than or equal to 1 (once or twice) on all items of the cyber-victimization subscale. Finally, the students who had both roles at the same time as cyber-victims/cyber-aggressors showed scores greater than or equal to 2 (once a month) on at least one item on both scales [64]. This scale has shown high reliability [18,64,65]. The reliabilities for both perpetrating and experiencing violence were very high in both waves. For 2017, the Cronbach  $\alpha$  for experiencing was 0.936 (item-total correlations: 0.629–0.824) and for 2020 the Cronbach  $\alpha$  was 0.754 (item-total correlations: 0.287–0.554). For committing violence, the Cronbach  $\alpha$  for 2017 was 0.934 (item-total correlations: 0.631–0.812) and for 2020 Cronbach  $\alpha$  was 0.763 (item-total correlations: 0.329–0.608).

The questionnaire of parental behaviors was constructed for the purpose of this research. Students were assessed through 8 statements on how they perceived the role of parents in their use of the Internet. Students assessed how much parents talk to them about using the Internet, inform them about the risks of using it, sit next to them while using the Internet, encourage them to use it independently, use apps to restrict use, browse search history, restrict Internet use to their children, etc. In the first wave, participants answered on a dichotomous variable (yes or no). A modification of the questionnaire was made for the second wave of the research, where the participants answered on a scale from "1—Never" to "5—Very often". For the purposes of this paper and comparison of the data, the responses of the second wave of research were grouped as a dichotomous variable where the response "1- Never" is considered as "No" and all other responses are considered as "Yes". The Cronbach  $\alpha$  for 2017 was 0.693 (item—total correlations: 0.244—0.434) and for 2020 the  $\alpha$  was 0.701 (item—total correlations: 0.296—0.513); however, within this study, the analysis was conducted only on the item level and the total score was not used.

# 2.2. Sample

In the first research wave conducted in 2017, the sample was randomized and stratified with respect to the types of the selected SDC high schools. An invitation to participate was sent to 12 schools and 11 schools participated in the survey.

A total of 539 responses were collected, of which 323 (59.9%) were male students and 216 (40.1%) were female students, with an average age of 16.22 years (min. 14–max. 18). In the second wave of research, the invitation to participate was sent again to the same schools from the first wave, and this time 6 high schools participated. In the second wave of the research, 284 answers were collected, of which 127 (44.7%) were male students and 157 (55.3%) were female students, with an average age of 16.06 years (min. 14–max. 18) (Table 1).

Va	riable	2017	55.3% 20.4% 13.0% 66.5% 26.8% 34.5%	
Responses		539	284	
Age		$16.22 \pm 1.07$	$16.06 \pm 1.16$	
Sex (F)		40.1%	55.3%	
School type	Vocational (3y)	18.6%	20.4%	
	Vocational (4y)	38.0%	13.0%	
	Gymnasium	43.4%	66.5%	
	1	28.5%	26.8%	
C1	2	28.2%	34.5%	
Class	3	30.8%	26.4%	
	4	12 5%	12 3%	

**Table 1.** Sociodemographic characteristic.

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Analysis was conducted using R 4.1.2 (R Core Team, 2021) with ggplot2 package [66].

#### 3. Results

# 3.1. Internet Usage during the Pandemic

During the pandemic, an increase in screen time was expected and children confirmed that they use the Internet much more than before (40%) and more than before (43%). Most of the children (88%) have participated in online classes and 68% of the children have been in isolation or self-isolation due to illness, illness of a household member or contact with an infected person.

The analysis shows that, in most cases, the use of non-interactive content decreased during the pandemic; however, the use of interactive content, such as social networks, increased, which can be attributed to the lockdown and the necessity for online channels for social interactions. We can also see that the use of computers for homework increased, which can be attributed to online classes (Table 2).

**Table 2.** Online activity: The comparison of the frequency of content use by smartphone and computer.

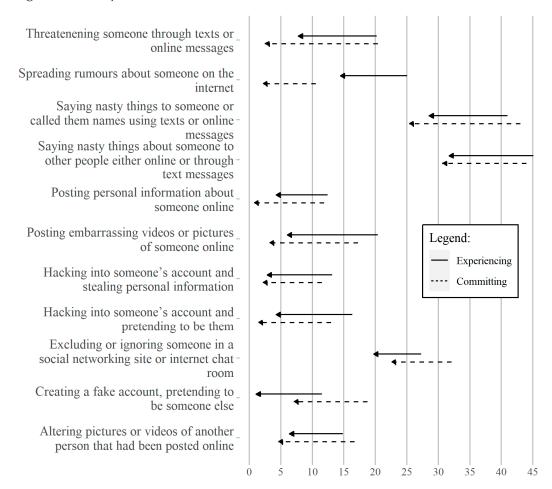
Variable		Smartphone				Computer			
	Time	M	SD	MDN	MWU p	M	SD	MDN	MWU p
Social networks	2017 2020	3.13 3.56	1.554 1.392	3 4	0.000	2.02 1.93	1.335 1.274	2 1	0.112
Gambling	2017 2020	1.49 1.08	1.265 0.399	1 1	0.000	1.40 1.04	1.177 0.185	1 1	0.000
Prize game	2017 2020	1.34 1.07	0.972 0.318	1 1	0.000	1.30 1.06	0.999 0.298	1 1	0.000
Chat room	2017 2020	1.72 1.81	1.412 1.317	1 1	0.014	1.43 1.43	1.132 0.983	1 1	0.152
Internet forums	2017 2020	1.74 1.65	1.140 0.949	1 1	0.627	1.56 1.44	1.139 0.788	1 1	0.922
Personal website or blog	2017 2020	1.32 1.15	0.946 0.572	1 1	0.009	1.29 1.10	0.941 0.465	1 1	0.002
Instant messaging	2017 2020	4.53 3.85	1.416 1.217	5 4	0.000	2.06 2.06	1.624 1.428	1 1	0.182
Medical information	2017 2020	1.56 1.65	0.940 0.744	1 2	0.001	1.49 1.36	1.023 0.634	1 1	0.956
Adult content	2017 2020	2.29 1.40	1.707 0.789	2 1	0.000	1.76 1.17	1.472 0.547	1 1	0.000
News portals	2017 2020	2.17 1.94	1.274 0.806	2 2	0.348	1.80 1.69	1.197 0.851	1 2	0.693
e-mail	2017 2020	1.97 1.88	1.188 0.818	2 2	0.378	1.90 1.88	1.240 0.901	1 2	0.041
Movies or videos	2017 2020	3.79 3.67	1.580 1.284	4 4	0.273	3.41 3.29	1.727 1.497	3 3	0.315
Music	2017 2020	4.29 3.62	1.495 1.433	4 3	0.000	3.10 2.77	1.743 1.678	3 2.5	0.007
Shopping	2017 2020	2.03 1.86	1.417 1.100	1 1	0.618	1.86 1.61	1.348 0.966	1 1	0.074
Online gaming	2017 2020	2.47 2.52	1.677 1.502	2 2	0.197	2.52 2.25	1.812 1.610	2 1	0.053
Homework or research	2017 2020	2.63 3.21	1.371 1.379	2 3	0.000	2.31 3.27	1.366 1.417	2 3	0.000

M—mean; SD—standard deviation; MDN—median; MWU p-p value for Mann–Whitney test.

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# 3.2. Experiencing and Committing Violence

To examine the differences in experiencing and committing online violence, we have dichotomized the items within the questionnaire, dividing the participants into those who have and have not experienced/committed violence. We have conducted a Fisher's exact test for difference in the prevalence of each behavior from 2017 to 2020. The prevalence results are shown in Figure 1, while differences are not shown because all of them are significant with p < 0.05.



**Figure 1.** Percentages of adolescents who experienced and who committed cyberviolence in 2017 and 2020 (all statistically significant with p < 0.05).

The results show that the prevalence for all of the categories significantly decreased during the pandemic. Although some behaviors still occur quite often, such as gossiping or offending, some of the behaviors, such as identity theft or posting sensitive materials, dropped to less than 7%

# 3.3. Violence by Role: Comparison 2017–2020

To assess the change in the types of behaviors regarding violence we have divided the sample into four categories. The change was assessed with an  $\chi^2$  test and the results are shown in Table 3.

The results show a significant difference in the prevalence of different roles. The category with the largest decrease was the victim/perpetrator, while the prevalence of the "not included" role increased the most, which is mostly consistent with the findings regarding the prevalence change for specific behaviors of cyber-victimization.

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Time	N	Not Included	Victim	Perpetrator	Victim/ Perpetrator	v <sup>2</sup>	v	v
Time 14	%	%	%	%	X	,	•	
2017	539	57.7	8.7	15.0	18.6	26.00	0.000	0.101
2020	284	72.5	10.9	7.7	8.8	26.98	0.000	0.181

**Table 3.** The comparison of the violence by role.

#### 3.4. Parental Activities as Predictor of Cyberbullying (2020)

The final analysis was the prediction of the inclusion in cyber-violence by parental monitoring activities. The data in Table 4 show the results of separate regression analyses, one for experiencing violence and the second for committing violence.

**Table 4.** The standardized parameters and regression results for the prediction of experiencing and committing violence by parental monitoring activities.

Your Parents:	Experi	encing	Committing		
Tour Lucitos.	r <sub>pc</sub>	β	r <sub>pc</sub>	β	
Talk to you about using the Internet	-0.052	-0.024	-0.127 **	-0.052	
Inform you about the risks of using the Internet	-0.125 **	-0.154 **	-0.206 **	-0.205 **	
Sit next to you while you use the Internet	0.036	0.022	-0.040	-0.037	
Encourage you to use the Internet independently	0.001	0.016	-0.025	0.014	
You do stuff on the Internet together	-0.010	-0.025	-0.041	-0.001	
They use applications or programs to limit certain content to you	0.136 **	0.090 *	0.082 **	0.071	
They monitor your search history after you finish using the Internet	0.159 **	0.113 **	0.109 **	0.095 *	
They sometimes limit the usage of Internet to you	0.068 *	0.063	0.009	0.042	
R	0.237 ** 0.056		0.258 ** 0.067		
$\mathbb{R}^2$					
$R^2_{corr}$	0.0	47	0.057		

 $r_{pc}$ —bivariate predictor-criterion correlation; \* p < 0.05; \*\* p < 0.01.

The results show that the cumulative effect of parental monitoring is medium with approximately 5% of explained variance for experiencing and 6% for committing violence. The model structure shows that similar sets of predictors are statistically significant in both regressions with the difference being in using the monitoring applications, which is a significant predictor for experiencing violence, but not for committing violence. Except for this, the analysis found that informing children is a protective factor for violence and monitoring search history is positively correlated with the inclusion in violence.

# 4. Discussion

As expected, children spent more time online during the pandemic than before the lockdown and the emergence of epidemiological measures. Given the aforementioned studies in which more time online was a risk factor for cyberbullying as well as other online risky behaviors, it was to be expected that risky Internet use would increase, especially among primary school children [18,30,31]. However, the respectable studies of cyberbullying on large samples show a stable trend or even a decline in cyberbullying rates during the pandemic [33,35,41]. Our research confirmed the same trend of a decline in cyberbullying on all the variables of perpetrating and experiencing cyberbullying in one county in Croatia. The first available studies in Canada, Finland and Korea report significantly lower cyberbullying rates compared to the time before the pandemic [35,40,41], which is also shown in the sample of high school students in Croatia presented in this paper. We consider this a significant result that can be useful for further understanding peer relationships and their online dimensions. The question that arises is "What if the bullying and cyberbullying are much more connected than we thought so far?".

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Studies during lockdown also show that staying at home and following classes in an e-learning environment due to epidemiological measures had a significant impact on reducing the bullying rate [33–36]. Cyberbullying and bullying are in many ways very similar phenomena involving almost the same behaviors, such as gossiping and insulting or excluding someone, and they often co-occur and experts agree that they both have similar antecedents and outcomes [6,10,67]. Furthermore, Velki and Kuterovac Jagodić state that many studies found a strong link between traditional bullying and cyberbullying, with many perpetrators and victims of traditional peer violence overlapping with cyberbullying [68,69]. The same authors state that individual, family and peer factors that are consistently found to be significant in predicting traditional peer violence are in recent research also found for cyberbullying, but they failed to confirm this with their research [68].

This research, as well as other studies that are showing a decline in cyberbullying during lockdown time, points to the complexity of understanding peer relationships and peer violence as well as online aspects of this phenomenon. The interconnectedness of bullying and cyberbullying need to be further investigated as the possible explanation is that a decline in classroom violence led to a significant reduction in cyberbullying. It should be emphasized that cyberbullying is often based on real events; for example, content can be focused on the academic performance or appearance of the child. Some studies show that a large number of children know or think that they might know who the perpetrator of violence is [24,27,28,70], which actually means that the feelings and consequences of cyberbullying are transmitted to the classroom, school and neighborhood. Cyberbullying manifests in school and/or other real-life settings, which includes additional shame of the victim, repeated emotional reaction and diminishing group status. Although further research is needed in this field, these results suggest that knowing the perpetrator and the likelihood of face-to-face interaction is an important aspect that can increase the intensity of the harm. Furthermore, some authors argue that if the perpetrator was known to the victim, this might be the reason for the low rates of reporting the cyberbullying acts [70]. Future studies should include the transfer of roles and violent behaviors from real life to the online world and the connection between different forms of violent behaviors as well as the experience of the children involved. This can also be useful for prevention programs aimed at reducing online violence through activities aimed at improving peer relationships in all group contexts where children meet in person. It also seems that this finding contributes to those authors who view cyberbullying as a form of bullying and do not define it as special phenomenon, which contributes to on-going debate among experts in the field [10,12]. This finding confirms the findings of authors that already stress the importance of the research designs that should cover online and offline forms of violence and adapt theoretical approaches that include the context in which the violence occurs, especially the group context. For a group of children, and especially adolescents in different stages of adolescence, peer group and social status play a very important role. Given the developmental stage at this age, the development of one's own identity also occurs through interactions with others, so future research should check the relationship between these constructs with regard to involvement in online and offline forms of violence [6,11,14,30,67]. However, the findings of this research are pointing out that preventive activities should implement comprehensive, multisector cooperation and a joint approach. The piloting of preventive programs created in a way that includes both bullying and cyberbullying in joint carefully planned preventive programs with an evaluation of the outcomes should be the focus of the practitioners and the service providers in the field of child safety and well-being.

This research identified that various parenting activities related to the use of the Internet can have predictive potential for the cyberbullying behaviors of children. Since previous studies showed that cyberbullying can be linked with time spent online and some of them included the relation to traditional bullying, it is important to emphasize that this may not be the only explanation. One of the characteristics of online violence is precisely the difference between online and peer violence, where in the online context the

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violence is completely hidden from adults because the perpetrators are hidden behind a screen and a sense of anonymity. An additional contribution of this research is a further understanding of the relationship between online violence, parental involvement and the extensive use of the online environment by both children and adults. It should be emphasized that in this period the focus of adults was increased in the direction of using the online environment [61,71]. Digital competences, which include competences in the area of safety protection in the online environment, are also crucial for research on parental influence and online violence, and some of the studies already include the construct of digital competences in the explanation of involvement in online forms of violence [60] while other studies identify a higher level of digital competence as a protective factor for specific areas of problematic Internet use [72].

During the lockdown, many parents worked from home, which means that they had more control over the online activities of their children. The collaboration of the teachers and parents was crucial for the elementary school children and this could be an important factor of the adaptation to online education [73]. The increased use of screens by adults, parents and teachers most probably has contributed to an increase in digital competencies as well those related to the field of Internet safety. Regarding the role of parents, this research confirms that some actions that fall under restrictive mediation may be predictors of violent online behavior [46,49]. If parents use apps or programs to limit certain content and monitor children's search history after their children finishes using the Internet, there is a higher probability that their children will commit cyberbullying. Some results point out that parental behaviors under the cap of active mediation (more conversations between children and parents about using the Internet as well as informing children about the risks of using the Internet) could have a positive impact [47]. If a lack of this parental behavior occurs, it is more likely that their children will commit cyberbullying. When it comes to experiencing violent behavior, the less parents inform their children about the risks of the Internet use the more likelt the children are to experience violent behavior. Furthermore, Martin Criado et al. emphasize that positive parental involvement, which is relevant for protection from online violence, consists of a higher level of parental knowledge of cyberbullying, perception of parental competence, risk adjustment and attribution of parental responsibility, as confirmed by our research results, which show that children who experienced and committed more online violence perceived that their parents informed them about the risks of using the Internet less often and they monitored their search history more often, which is a restrictive parental activity [74]. In addition to the above-mentioned restrictive behaviors that are also associated with more cyberbullying experiences, if parents limit the usage of the Internet to children those children experience cyberbullying more. These results show that prevention programs should include activities that promote the active mediation of parents when using their children's online content and future research in the field should include specific digital competencies of the children and their parents that can be protective factors in various problematic usages of the Internet including cyberbullying. This can provide further understanding of these relations and provide evidence-based practice in the field of working with parents and teachers.

#### 5. Conclusions

The presented research on Internet use and cyberbullying in lockdown during the COVID-19 pandemic provides relevant results for the population of high school students. Despite the hypotheses of experts based on the assumption that an increase in time spent online will cause an increase in risky online behaviors when it comes to cyberbullying, in this study, the above assumptions have not been confirmed. The results of other, previously mentioned studies conducted in different countries during lockdown (Finland, Canada, Korea) also show a decline in cyberbullying rates, which represents a significant scientific contribution to the understanding as well as future research of cyberbullying. These findings contribute to the approach that defines cyberbullying as part of bullying, which indicates that, in the future, we need studies that cover both phenomena and their intercon-

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nectedness. These insights are also very important in preventive work with children and young people, where peer violence and cyberbullying can be included in joint prevention workshops and topics, both within the school and in the family environment.

This research covered important areas of parental behaviors and their predictive potential when it comes to cyberbullying. In situations where children are already involved in violent events online, children will involve their parents and confide what happened to them, as shown by international comparative research (such as EuKids online). The questions that arise are "How much and in what way parents participate in online risk prevention?". This preventive role of parents in the field of cyberbullying needs to be explored in future research. However, these results related to parental behavior also have strong practical implications as they show that the systematic education of parents about active and restrictive behaviors in their children's online activities should be widely available and could have a positive impact on cyberbullying prevention. Research results in the field of parental activities and their significance for cyberbullying prevention should initiate future research in the field with more focus on the different parental strategies and activities as well as the digital competencies of children and adults. A comprehensive understanding of the parental role and specific digital competencies significant for their positive affect on online risks and studies that involve them would contribute to the creation of tailor-made educative and preventive activities based on the learning outcomes derived from the recent findings with an evidence-based approach. Current research is pointing out the needs of children as well as parents in the field of online safety as well as the possibilities of working with children and adults, which should be systematically available to the general population as well as the risk groups. The development of digital competencies that will enable active citizen participation and competencies for their involvement in the digital age is the responsibility of the state. The improvement of digital competences, which include the areas of Internet safety and protection, should be implemented through general programs for children from preschool age and the additional training of certain target groups with basic but also specific, professional digital competences; for example, for practice with children and young people. This systematic multisector approach should contribute to the higher level of digital well-being of citizens, which is especially important for the group of children and their parents.

Although the effect of parental supervision and control is evident, it should be emphasized that the participants in this study are high school students, when the influence of parents is weak due to their developmental period. Furthermore, there are other predictive factors, such as the school and peer environment mentioned so far, time spent on the Internet and especially the content they use and gender, along with some other factors that have yet to be explored. One of the questions that arises is how significant are the implications of this study now that COVID-19 is almost over, and in the case of a recurrence of a pandemic there may be an external validity issue as it may not be the same as COVID-19. However, the influence of universal digitization, changes in the ways of using the the online environment and digital tools, and a higher level of digital competence is something that remains in everyday life even after the pandemic in the world of children and adults. The results of this research will be presented with the purpose of creating future preventive policies and prevention programs that will not separate peer and cyber violence. One of the direct implications for the practice includes clear guidelines for experts who work with children and parents regarding the knowledge and competences and the types of family dynamics in online activities that can be a protective factor for children's lower participation in online forms of violence.

Finally, this research is another reminder that the standardization of the field and the application of theoretical models are crucial for a deeper understanding of the various aspects of online violence in order to move away from descriptive presentations of prevalence data. However, studies that explore different aspects in specific contexts, such as the one presented, are important for understanding different relationships within different environmental factors, which can be useful to those researchers who in the future will put

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their effort into the creation and verification of comprehensive theoretical approaches in the field of online violence and problematic Internet use.

#### 6. Research Limitations

This research had several limitations. In the second research wave, given the lockdown and the fact of increased Internet use, the research was conducted in the same schools as in the first research wave on a convenient sample; thus, future studies would benefit from the probabilistic samples.

A limitation of the research could also be the use of an instrument that has not been revised in accordance with modern trends in online communication and its normative framework. The question arises whether children perceive, for example, gossip as common or violent behavior. These dimensions of online communication and violence in the digital environment need to be examined in future research. Moreover, there was a need to include some other factors that could better and more broadly describe the predictability of performing and experiencing cyberbullying in students. The questionnaire of parental behaviors during Internet use, which was created for the purposes of this research, is based on previous research findings. In future research efforts, a scale of parental supervision and control that has clear metric characteristics should certainly be created or used.

Finally, the gender differences were not considered in the current study. Since the literature on bullying and cyberbullying emphasizes many gender-related differences, this should be the focus of future research on cyberbullying occurrences.

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**Informed Consent Statement:** Applied Code of Ethics in research with children [62,63]. The students' parents were informed about the aim and purpose of the research. Active consents were collected for children under 14 years of age, while passive consents were collected for children over 14 years of age, that is, the active refusal of parents to have their child participate in the research.

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