



## Online at risk! Online activities of children in dormitories: Experiences in a Croatian County

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Résumé de l'article

The virtual environment available through the internet is an important domain of children's subjective well-being. Widespread usage of information technology brings risks as well as benefits, a topic now under intensive study by professionals in multiple fields. To date there has been a lack of research about the experiences of children from group accommodation settings when navigating the virtual environment. The main goal of the present study, which involved 510 high school students living in dormitories in Split-Dalmatia County, was to determine and document patterns of internet usage and internet addiction, and to examine another internet behavior, cyberbullying. Our results show that 3.73% of the children we studied manifested a severe level of internet addiction, while about one third took part in cyberbullying as victim, perpetrator, or both. An important finding is that children involved with cyberbullying have significantly higher levels of internet addiction, suggesting a relationship between these phenomena. In the second, qualitative, phase of the study, the quantitative research findings were discussed with children, parents, teachers, and staff. Our results enable a better understanding of young people's behaviors in the online world, and could contribute to the development of educational programs for children and young people and the promotion of evidence-based practice in dormitory settings.

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## **ONLINE AT RISK! ONLINE ACTIVITIES OF CHILDREN IN DORMITORIES: EXPERIENCES IN A CROATIAN COUNTY**

**Lucija Vejmelka, Roberta Matković, and Davorka Kovačić Borković**

**Abstract:** The virtual environment available through the internet is an important domain of children's subjective well-being. Widespread usage of information technology brings risks as well as benefits, a topic now under intensive study by professionals in multiple fields. To date there has been a lack of research about the experiences of children from group accommodation settings when navigating the virtual environment. The main goal of the present study, which involved 510 high school students living in dormitories in Split-Dalmatia County, was to determine and document patterns of internet usage and internet addiction, and to examine another internet behavior, cyberbullying. Our results show that 3.73% of the children we studied manifested a severe level of internet addiction, while about one third took part in cyberbullying as victim, perpetrator, or both. An important finding is that children involved with cyberbullying have significantly higher levels of internet addiction, suggesting a relationship between these phenomena. In the second, qualitative, phase of the study, the quantitative research findings were discussed with children, parents, teachers, and staff. Our results enable a better understanding of young people's behaviors in the online world, and could contribute to the development of educational programs for children and young people and the promotion of evidence-based practice in dormitory settings.

**Keywords:** virtual environment, online risk behaviors, student dormitories, Croatia, Split-Dalmatia county

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The current generation of youth has grown up with digital technology and the internet, resulting in high proficiency in the use of electronic media. Many of the terms applied to these youth — Generation Y, the “millennial” (or “net”, or “Google”) generation, cyberkids, Generation M (for “media”), and so on (Lazić-Lasić et al., 2012) — illustrate the interconnectedness of youth and technology, and serve to emphasize the importance and daily presence of technology in children’s lives. The new technologies have led to changes in the way adolescents communicate, socialize, create, and learn (Helsper & Eynon, 2010). In Croatia, where our study took place, young people aged 15 to 34 years are the most frequent internet users (Croatian Bureau of Statistics, 2019). Despite the many advantages they gain from it, their use of the internet prompts social concerns and leads to new risks such as privacy and security breaches, and exposure to inappropriate web content and cybercrime (Greenfield & Yan, 2006).

Very little research into cyberbullying has been published to date. There have also been few studies of traditional bullying within institutional settings for children, although research conducted in the United Kingdom (Barter et al., 2004; Berridge et al., 2012; Gibbs & Sinclair, 2000), Finland (Honkatukia et al., 2007), Croatia (Jaman, 2008; Sekol, 2011; Vejmelka, 2012), and Serbia (Plut & Popadić, 2007) has found that children in institutions both experience and perpetrate peer violence on a daily basis. In Croatia, only one study has explored experiences with cyberbullying: it found that between 4.7% and 14.4% of children in the residential setting had either experienced or perpetrated cyberbullying behaviors (Vejmelka & Majdak, 2014). Future research will be important in determining the characteristics of online violence among children residing in a group context.

### **Online Risk Behaviours of Children and Youth**

In recent years, a number of risky online behaviors have been identified among children and youth: excessive internet use, internet violence, sexually risky behaviours, online gaming disorder, and online gambling (Fineberg et al, 2018). Because this paper is focused on internet addiction and the related phenomenon of cyberbullying, it is on those risks that we shall keep our attention.

#### ***Internet Addiction***

Internet addiction is emerging as a recognized risk of internet use; it has been the focus of increasing scientific interest over the past 20 years (Mihajlov & Vejmelka, 2017). Internet addiction may be described as a condition in which an individual lacks the ability to control his or her own use of the internet, resulting in excessive use with problematic outcomes that negatively impact the individual’s own life (Mihajlov & Vejmelka, 2017; Young & de Abreu, 2011). Internet addiction was first suggested as a clinical disorder by Egger and Rauterberg (1996). Block (2008) argued that internet addiction should be included as a disorder in the Diagnostic and Statistical

Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), and stated the four elements of addiction, which have been cited by many authors:

- 1) *excessive use*, often associated with a loss of sense of time or neglect of basic drives,
- 2) *withdrawal*, including feelings of anger, tension and/or depression when the computer is inaccessible,
- 3) *tolerance*, including the need for better computer equipment, more software, or more hours of use, and
- 4) *negative repercussions*, including arguments, lying, poor achievement, social isolation, and fatigue. (p. 306)

However, internet addiction is not listed in the official classification system of mental disorders, and no formal diagnostic criteria have been set forth.

In developing a first version of an Internet Addiction Test (IAT), Kimberly Young (1996), a pioneer in internet addiction research and treatment, noted eight criteria of addiction: (1) high preoccupation with the internet; (2) the need to use the internet for increasing amounts of time in order to maintain satisfaction; (3) unsuccessful efforts to control, reduce, or eliminate one's internet use; (4) anxiety, depression, or irritability from attempting to reduce or stop using the internet; (5) staying online longer than intended; (6) endangering personal relationships or job, educational, or career opportunities because of the internet; (7) hiding the truth about the extent of one's internet use from family members, therapists, or others; and (8) using the internet as a way of escaping from problems. Anyone who exhibits at least five of these criteria may be considered addicted (Young, 1996, 1998).

The problems observed in people who are addicted to the internet may be classified under five categories: academic, interpersonal, financial, professional, and physical (Young, 1996). Young's version of the IAT was later extended to a 20-item scale that measures the presence and severity of internet dependency among adults and adolescents (Young, 1996; Mihajlov & Vejmelka, 2017). Widyanto and McMurrin (2004) stated that the scale items reflect six dimensions of internet addiction: salience, excessive use, neglect of work, anticipation, lack of control, and neglect of social life. Therefore, people who are addicted to the internet may experience significant difficulties in the academic, relationship, financial, professional, and physical domains (Young, 1996).

In a recent study using a representative sample of Croatian high school students, Černja and colleagues (2019) identified three dimensions of internet addiction: emotional and cognitive internet preoccupation, neglecting work and lack of self-control, and social problems. The same research showed that 3.4% of the students reported high levels of internet addiction, while 35.4% reported some signs of addiction.

### ***Cyberbullying***

As noted, the internet habits of adolescents might be risky in terms of addiction, but they may also be an avenue for violent behavior in the virtual context. Cyberbullying may be understood as

any communication or interaction between individuals or groups that (a) takes place via electronic or digital media, and (b) include messages of aggressive or hostile content that are intended to inflict discomfort or harm on other persons (Tokunaga, 2010). There is still no consensus among authors regarding the definition and measurement of cyberbullying, which complicates efforts to compare research results from different countries. The term cyberbullying itself did not gain wide currency until the past decade or so; it is now applied to a variety of phenomena (Notar et al., 2013). Belsey (2019) was among the first to mention the term and to define electronic violence as the use of information and communication technologies for the purpose of hostile behavior by individuals or groups. Some authors, drawing on the criteria of traditional bullying (Vejmelka et al., 2017; Olweus, 1998), have defined cyberbullying as deliberately and repeatedly harming others through computers and related electronic devices such as mobile phones. In other words, it entails behaviors that are repeatedly committed with the intention of causing negative consequences through electronic means (Patchin & Hinduja, 2015; Smith et al., 2008). The constant advancement of electronic technologies and the increasingly rich opportunities for interaction they provide have enabled diverse new forms of violence that go beyond electronic verbal abuse (Corcoran et al., 2015). Grigg (2010) suggests “cyber-aggression” as an umbrella term for a wide range of negative behaviors on the internet, whether repeated or one-off.

### ***Problematic Usage of the Internet in Group Accommodations for Children***

An institutional accommodation for children is a specific environmental context. The children live there together 24 hours a day: it is the scene of all their daily activities. The peer group, which largely replaces both the practical functions and the socializing influence of the family, has certain characteristics that can be linked to violence among children in these settings, above all in the ratio of children to adults and in the conditions under which the children reside. For example, lack of privacy due to shared housing, or spending a large part of each day unattended by an adult, provide opportunities for more intense and frequent violent behavior in an online environment, especially if we accept that parental monitoring and self-disclosure by children can be helpful in protecting children from online violence (End Child Prostitution and Trafficking – ECPAT, 2016).

Although research on problematic usage of the internet among children and youth has mainly been conducted in school settings, it is also important to investigate the specifics of online violence among children in other environments, especially institutional contexts where children reside. When studying different forms of violence among children and youth, the environmental context is of the utmost importance, and contributes to our understanding of the phenomenon of violence itself.

Four key facts are important for understanding child violence in group accommodations. First, it is indisputable that children in such accommodations spend most of their time surrounded by other children. Second, caregivers are not always able to control the children’s behavior: institutional placement, by definition, entails that the number of caregivers is less than the number of children. Third, the organization of children’s leisure time in an institution is more flexible than

in a school (although some structured leisure time activities are provided) and parental supervision is clearly absent. Finally, as Baker et al. (2002, p. 1) point out, children in group settings often have knowledge of each other's family circumstances, and access to other personal information that could be used to intimidate and control the victim, including by cyberbullying.

Although they are few in number, studies on the association between internet addiction and cyberbullying have shown that the frequency of cyberbullying significantly correlates with the occurrence of internet addiction among adolescents (Jung et al., 2014). Similarly, research in school settings in Croatia has revealed that both cybervictimization and cyberaggression are more prevalent among adolescents who have developed moderate, mild, or high levels of internet addiction (Vejmelka et al., 2017). Previous research in institutional settings for children in Croatia shows a lower rate of violence among children in families than children in care (Sladović Franz, 2003). In institutional accommodations for children in Croatia, control over internet usage has been used to reward or to punish (Vejmelka, 2012). Majdak and Vejmekla (2014) stated that from 4.7% to 14.4% of children in institutional homes reported having committed some form of electronic violence.

Considering the lack of research into internet addiction and cyberbullying in residential settings for children and youth, the research we present in this paper could contribute to a better understanding of the online risks faced by this population. The purpose of the study was to document patterns of internet usage and internet addiction and to examine the allied phenomenon of cyberbullying. We believe that the findings presented here could contribute to the development of educational programs for children and the promotion of evidence-based practice in dormitory settings.

### ***Parental Control and Internet Usage by Children***

The internet and associated technologies affect each aspect of our environment, and so impact parenthood as well. Modern parenting increasingly involves parental attitudes and actions that aim to provide direction for children in relation to the quality of online content they consume and the amount of time they spend online.

Parental control over children's internet usage is commonly implemented through: screen-time limitations, use of filtering software or website blockers to exclude potentially harmful websites, granting or withholding permission for internet use (Lebo, 2001), monitoring social media use, and banning internet use as a form of punishment (Lebo, 2017). Other measures include imposing rules relating to the disclosure of personal data, the publication of various types of content, and the use of social networks (Haddon & Livingstone, 2012 as cited in Lagator et al., 2018).

Adult control as a protective factor and support for children's safer internet use is certainly not available to children in group accommodations to the same extent as those in families. Although group accommodation settings for children employ educated professionals, the comparatively low

ratio of adults to children makes it impossible to implement an individual approach to every child or for care workers to continuously monitor each child's online activities.

### ***Research Objective***

The main purpose of the present study was to determine the patterns of internet usage of children in a group residential setting. The research has two goals: first, to determine the level of internet addiction among these children, and second, to examine the internet-mediated phenomenon of cyberbullying.

### **Methods**

The research was conducted in cooperation with the Institute for Public Health of Split-Dalmatia County and the Department of Social Work at the University of Zagreb Faculty of Law. A mixed-method research design was employed: that is, one in which both quantitative and qualitative approaches are combined in a single study (Este et al., 2009). The purpose of using both research methods was to gain a more comprehensive understanding of the online risks in dormitories, as well as to triangulate the perspectives of different actors — both children and adults — on the researched phenomena. Because quantitative research is deductive, the results are limited by the selection of variables in the study. On the other hand, the qualitative research is inductive: it thus creates opportunities to expand and deepen our understanding of the topic but also enables consideration of questions about existing ideas, the development of new theories, and an openness to the perspectives of research participants that is lacking in quantitative research (Guba & Lincoln, 1994, as cited in Sekol & Maurović, 2017).

#### ***Phase One: Quantitative Research***

The aim of our quantitative research was to document patterns of behavior on the internet with a special focus on internet addiction and participation in cyberbullying. The research hypotheses were in line with previous research of online risks among high school populations (Vejmelka et al, 2017):

- The first hypothesis regarding gender differences presumes that there is no gender difference in cyberbullying behaviors and level of internet addiction.
- The second hypothesis posits that children who participate more often in cyberbullying will significantly more often exhibit higher degrees of internet addiction.

#### ***Sample***

In the first phase, quantitative research was done with the whole population in the student dormitories. From the overall pool of subjects ( $N = 524$ ), 97.33% ( $n = 510$ ) high school children agreed to participate. The survey included 37.6% ( $n = 192$ ) males and 62.4% ( $n = 318$ ) females, which is in accordance with the sex ratio in the overall population of children in the dormitories.

The average age of the high school students was 15.4 years. A plurality of respondents, 30%, were 15 years old, 24.12% were 16 years old, 19.61% were 14 years old, 18.43% were 17 years old, 4.90% were 13 years old, 2.55% were 18 years old, and 0.4% were 19 years old. All of the participants were adolescents, but since the Convention on the Rights of the Child (United Nations Commission on Human Rights, 1989) as well as much national and international legislation defines a child as a person under 18 years, the term “child” will be used in this article in accordance with the conventional terminology in child protection.

### *Student Dormitories in Split-Dalmatia County*

There are four student dormitories in the Split-Dalmatia County area to accommodate students who must move to attend their desired high school, as their chosen course of study is not available in their communities. This ensures equal access to education for students from all regions and a chance for them to obtain the education they desire, despite the hardships of dislocation and separation from their families who are living in smaller communities.

Most of the students in the dormitories are housed in double and triple rooms; only a few rooms have more beds. Various types of common room are also provided, such as classrooms, dining rooms, and even rooms equipped with washers and dryers. Children have at their disposal common leisure facilities such as a TV room, or a hall for activities such as music, dance, folklore, drama, journalism, technical pursuits, robotics, table tennis, and chess. Some activities, such as football, basketball, and badminton, take place in extramural facilities.

To address everyday student needs there are cooks and cleaners, and even a custodian in charge of repairs. In the dormitory, the most important adult role in the children’s lives is played by educators. The children are organized in groups. Each educator works with a group of approximately 25 students. They actively participate in the children’s lives in the dormitory, holding regular group meetings to discuss any topic of concern and help solve issues with school, family, or relationships. They are in constant contact with the children’s parents and teachers. The educators work in shifts, and the children are under adult supervision at all times. Except in unusual circumstances, such as severe bad weather, most of the children visit their family homes every weekend.

### *Quantitative Procedures*

The study was conducted during the year 2016 in dormitories for children in Split-Dalmatia County. Before the research, the authors requested permission to use measuring instruments that examine internet addiction (IAT; Young, 1996) and cyberbullying (European Cyberbullying Intervention Project Questionnaire [ECIPQ]; Del Rey et al., 2015). The research design was approved by the Croatian Ministry of Science and Education. In order to minimize the potential risk of harmful effects from the research (e.g., a sense of unease or anxiety), cooperation was obtained with civil society organizations that provide psychological support to children; their



contact information was given at the end of the web questionnaire. Data collection was conducted by the group-administered web survey, which lasted approximately 20 minutes.

### *Measures*

The sociodemographic questionnaire created for the purpose of this research included questions about the participant's gender and age, the type of school attended and the classes taken, and school achievement. It also solicited information about the participant's internet habits, the hardware used for internet access, and the frequency of availability of the internet in the residential part of the institution and at school.

In order to examine internet addiction, the IAT (Young, 1998) was used. The IAT consists of 20 items that are scored on a 5-point scale ranging from 0 (*not applicable*) to 5 (*always*); the total score ranges from 0 to 100, with a higher score representing a higher level of addiction. Results 0–19 indicate that signs of addiction are absent; 20–39 shows mild but unproblematic symptoms; 40–69 implies a moderate level of addiction; and 70–100 indicates a high level (Young, 1998).

Our study used the ECIPQ (Del Rey et al., 2015) to investigate cyberbullying. This instrument comprises 22 items that examine instances of various forms of electronic violence that have occurred over the previous 2 months. The questionnaire contains two subscales (cybervictimization and cyberaggression), which both measure the same items related to certain online behaviors but from opposite perspectives: first, that of the person exposed to the behaviors (11 items), and second, that of the person engaging in violence (11 items). The answers range over a 5-point scale: 0 (*never*); 1 (*once or twice*); 2 (*once a month*); 3 (*once a week*); 4 (*more than once a week*). Based on the results of both scales, young people are divided by statistical criteria into categories according to their participation in cyberbullying: victim, aggressor, and victim/aggressor. Participants whose results were equal to or higher than 2 (*once a month*) on any item of the cybervictimization scale and less than or equal to 1 (*once or twice*) on any item of the cyberaggression scale, are considered cybervictims. Cyberaggressors are those subjects whose results are equal to or higher than 2 (*once a month*) on any item of the cyberaggression scale and less than or equal to 1 (*once or twice*) on all items of the cybervictimization scale. Finally, cybervictim/aggressor participants show results greater than or equal to 2 (*once a month*) on at least one item in both scales (Del Rey et al., 2015).

### ***Phase Two: Qualitative Research***

For the second phase, the plan was to deepen our understanding of the quantitative results from the perspectives of children, teachers, and parents, using a convenience sample of children ( $N = 25$ ), teachers and care workers ( $N = 13$ ), and parents ( $N = 20$ ) in eight focus groups. A focus group protocol was created for the purposes of the research. Focus group leaders were experienced experts, and the duration of sessions was from 45 to 75 minutes. Qualitative thematic analysis of the focus group transcripts was conducted. Data processing using the thematic analysis method involved a mostly deductive approach, based on prior knowledge in the field (Braun & Clarke,

2006). Previous findings and studies in the field of internet use enabled the preliminary definition of themes. Moreover, the chosen method of qualitative analysis ensured that some themes could be deductively derived from the respondents' answers and that researchers were guided by the data collected. Thematic analysis was conducted on the collective answers of teachers and care workers, children, and parents, but if some category was extracted solely from the answers of just one or two groups of respondents this fact was reflected in the category or theme name.

### ***Research Ethics***

The research observed all ethical guidelines for conducting research with children. In the planning and implementation of this empirical research the Code of Ethics in Research with Children (Vijeće za djecu Vlade Republike Hrvatske & Državni zavod za zaštitu obitelji, materinstva i mladeži, 2003) was fully respected. Prior to the survey, the students and their parents, as well as the heads of the institutions and the caregivers who worked in them, had been informed about the purpose and importance of the research, its estimated duration, and the content of the web questionnaire. They had also been informed about and familiarized with the right to anonymity which assured them that their responses could not be traced back to them, and of the fact that participation was voluntary — they had the right to accept or refuse research participation. Furthermore, participants had been informed that withdrawal from the study was possible at any time.

## **Results and Discussion**

### ***Internet Usage: Quantitative Results***

Since the beginning of 2017, combined usage of internet browsing and social media from mobile smartphones has hovered consistently at around 50% of total web traffic worldwide; in 2019, mobile devices other than tablets generated 52.6% (Statista, 2020). While in the dormitories, the participants in our study most commonly accessed the internet from their cell phones, with 41.18% connecting via a Wi-Fi network and 41.57% via their mobile network. The least common use of the internet in the dormitory (22.35%) was via personal computer (PC).

From Table 1 we can conclude that participants most often used a cell phone to connect, with 25.69% using a cell phone via wi-fi often or very often, and 25.29% using a cell phone via a mobile network often or very often. Participants spent weekends at their family homes and used the internet more often there than when they were in the dormitory. It is interesting that when they were at their family homes, as many as 84.12% used the internet from a mobile phone connected to a Wi-Fi network. According to the participants' statements, using the internet on their mobile phones ensured their privacy. International research indicates that 95% of teens have access to a smartphone and that 45% say they are online "almost constantly" (Anderson & Jiang, 2018).

Table 1. *Internet Usage Methods in the Dormitory Versus in the Family Home*

| Frequency        | PC      |         | Cell phone (Wi-Fi) |         | Cell phone (mobile) |         | Other   |         |
|------------------|---------|---------|--------------------|---------|---------------------|---------|---------|---------|
|                  | Dorm.   | Home    | Dorm.              | Home    | Dorm.               | Home    | Dorm.   | Home    |
| Never            | 77.65%  | 12.75%  | 58.82%             | 4.51%   | 58.43%              | 17.84%  | 75.69%  | 39.61%  |
| Very rare/Rare   | 13.53%  | 38.82%  | 9.02%              | 6.47%   | 10.98%              | 28.63%  | 10.98%  | 26.86%  |
| Sometimes        | 2.55%   | 21.76%  | 6.47%              | 4.90%   | 5.30%               | 14.51%  | 4.90%   | 15.29%  |
| Often/Very often | 6.27%   | 26.67%  | 25.69%             | 84.12%  | 25.29%              | 39.02%  | 8.43%   | 18.24%  |
| Total            | 100.00% | 100.00% | 100.00%            | 100.00% | 100.00%             | 100.00% | 100.00% | 100.00% |

### ***Internet Usage: Qualitative Results***

The qualitative phase of our research gave us an opportunity to deepen the research topic and obtain the detailed opinions of the children and their significant adults. Table 2 presents the results of the thematic analysis of the children’s general internet usage. Two themes were extracted from the participants’ answers: (1) positive internet use, and (2) negative internet use. Both consist of three categories.

Table 2. *Thematic Analysis: Participant Perspectives on Internet Usage by Children.*

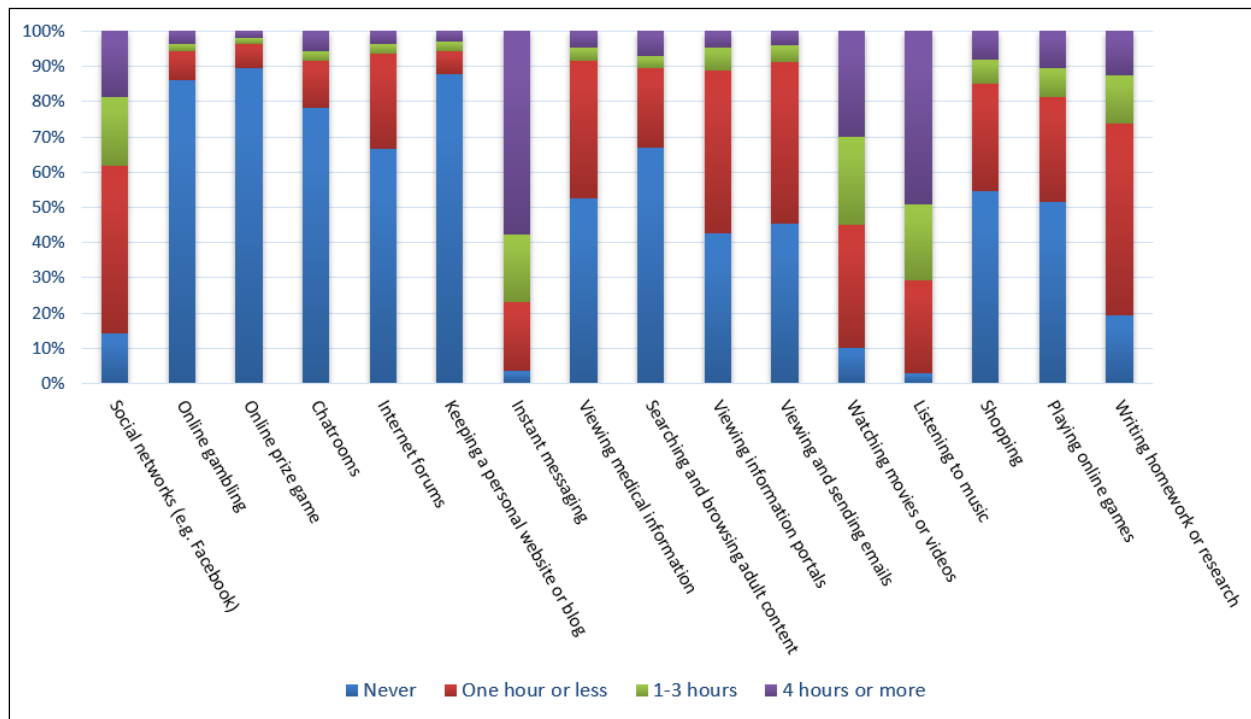
| Theme   | Category  | Chosen statement   |
|---|---|--|
| Positive internet use perceived by all participants | Source of information                             | Now we are enrolling in high school and online there are groups of people who are planning on enrolling in the same school. I think there are more benefits [than drawbacks] to it. (StudentOS4)       |
|   | Educational opportunities                         | As far as I can see from my children, one part helps them: much more information about the school. (ParentOS3)   |
|   | Peer communication                                | I notice that online communication between children encourages socializing (TeacherSS5)<br>I use the internet for texting and sharing info with my friends (StudentOS3)                                |
| Negative internet use perceived by adults           | Information overload                              | Because the information is available on Google, they do not need to remember the data, the facts, the details. Why? Because they know they can Google it at any time, type it and find it. (ParentOS4) |
|   | The decline of motor skills                       | They do not know how to hold a pen in their hand; their motor skills are very bad because they are typing on a keyboard all the time. (Teacher & Care workerSS5)                                       |
|   | Poor communication skills (verbal and non-verbal) | And they all write in abbreviations and incomplete sentences. Everything is in note form. (Teacher & Care workerSS3)   |

An interesting finding is that the benefits of internet use (easy access to information, educational opportunities, and peer communication) were pointed out by children as well as adults. However, the children did not report the negative consequences of internet use noted by the adults (information overload, decline of motor skills, poor communication skills).

**Online Activities and Social Networks Usage: Quantitative Results**

The most popular ways of using the internet were listening to music (97.06%,  $n = 495$ ) and sending and receiving instant messages (96.47%,  $n = 492$ ). More than half of the participants, (57.65%,  $n = 294$ ) reported sending and receiving messages for 4 hours or more every day (Figure 1), while 49.02% ( $n = 250$ ) spent 4 hours or more daily listening to music. In a study by Vejmelka et al. (2017), listening to music and sending instant messages are among the online activities that have a positive correlation with internet addiction.

Figure 1. *Online Activities*



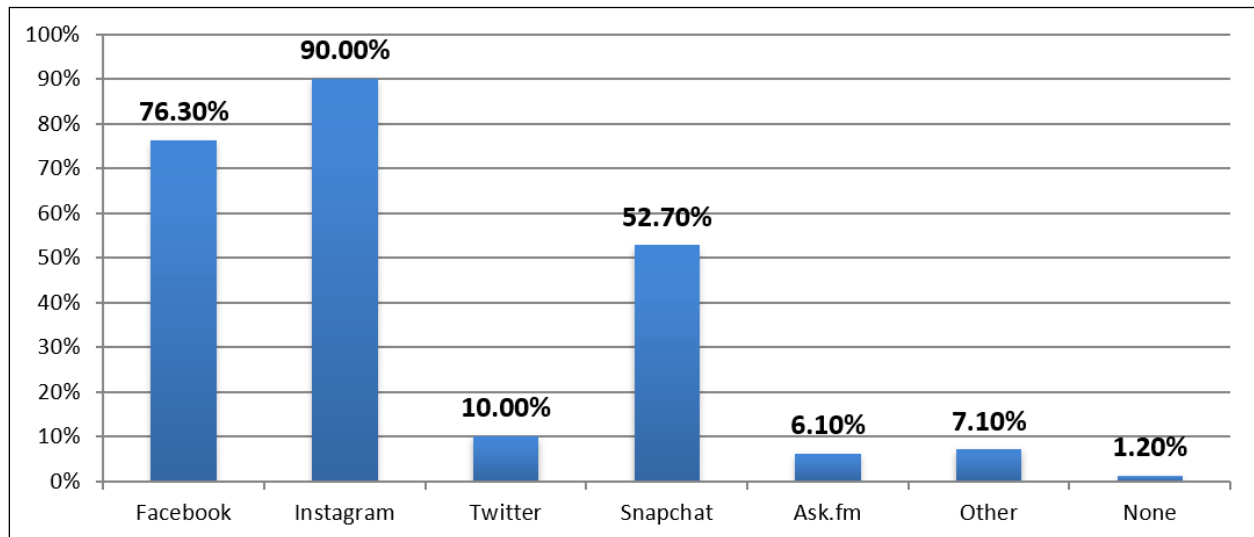
For 90% ( $n = 459$ ) of the participants, the third most frequent online activity was watching movies or videos: 30% reported having consumed such content for 4 hours or more daily over the previous 2 months. Moreover, 85.88% ( $n = 438$ ) participants used social networks daily, with 19.61% ( $n = 100$ ) spending 1 to 3 hours a day, and 18.63% ( $n = 95$ ) more than 4 hours, on social media services such as Instagram, Facebook, and Snapchat. A study by Carter and Wilson (2015) highlighted social networks as virtual platforms where children experience cyberbullying. In addition to communication, children often use these services to exchange multimedia content and

engage in various forms of interaction, thereby increasing their risk of becoming involved in violent acts on the internet.

Almost half of the participants spent an hour or less daily using the internet for viewing information portals, reading and sending email, and writing homework or doing research. The least interest was shown for consuming content like online gambling and online prize gaming, visiting chat rooms, and keeping a personal website or blog (Figure 1).

Social media have become almost universally popular among adolescents in recent years, with the various services competing fiercely for users. Instagram was the most popular social media site among our sample: 90% ( $n = 459$ ) participants had an Instagram profile (Figure 2). Most of the participants maintained profiles on two or more services, with Facebook (76.3%,  $n = 389$ ) and Snapchat (52.7%,  $n = 269$ ) being the next most popular. Only 1.2% ( $n = 6$ ) of participants did not have a profile on any social media service. This is broadly in line with international trends: Anderson & Jiang (2018) found that YouTube, Instagram, and Snapchat were the most popular online platforms among teens (.).

Figure 2. *Social Network Usage*



### ***Social Network Usage: Qualitative Results***

In the qualitative part of the research, four themes were extracted from the data: (1) children’s profiles on social networks, (2) children’s lack of interest in Facebook, (3) Instagram preference, and (4) parents and teachers’ perceptions of the negative impact of social networks (Table 3).

Participants confirmed that the children typically have more than one profile on social networks, but also stated that some profiles are not active. In line with contemporary worldwide trends, the children preferred Instagram over Facebook. This was partly due to the children’s perception that their activities on Facebook could be monitored by their parents. In addition, they

saw Instagram as easier to use, particularly for mobile devices, and preferred its emphasis on visual over textual communication. They were aware that publishing content on Instagram could lead to a distorted self-presentation, but they viewed this in a positive light as providing an opportunity to create a preferred online self-image.

It was again the adults who pointed out negative aspects of social network usage: that children gave too much weight to the opinions of “influencers”, and that social network activities were a waste of time. They also perceived social networks as a psychological burden for children, based on the belief that social network activities intensify the emotional reactions of children, including their negative feelings. This finding confirms recent international research showing that parents are anxious about the effects of screen time on their children and that they are particularly concerned about their teenaged children spending too much time in front of screens (Jiang, 2018).

Table 3. *Thematic Analysis: Participant Perspectives on Use of Social Networks by Children.*

| Theme  | Category   | Chosen statement   |
|--|--|--|
| Profiles on social networks  | Passive and active profiles on social networks                 | Facebook used to be popular, I do not use it any more but my profile remains active. (StudentSS2)  |
|  | Profiles on multiple social networks                           | They follow YouTube a lot. It surprised me at the beginning of the school year when I found out. In my experience from the whole class, only a few do not follow it, and everyone else does for a few hours a day. And they know everything about them. (Teacher & Care workerOS2) |
| Children’s lack of interest in Facebook                                      | Parent activity on Facebook                                    | Parents do not use Instagram and rarely check us out on Instagram and they are all on Facebook. (StudentOS4)   |
|  | Children’s aversion to Facebook                                | Luckily I am not in the generation that was on Facebook. (StudentOS4)  |
| Instagram preference   | Interesting multimedia content                                 | Instagram is more interesting. (StudentSS3)  |
|  | The convenience of using this platform and simple settings     | ... and the Instagram story is a lot easier to watch. (Student OS4)  |
|  | An opportunity to present a desirable virtual image of oneself | On Instagram we can create a picture of ourselves that we like. (StudentOS5)   |
| Parents’ and teachers’ perceptions of the negative impact of social networks | Excessive following of influencers                             | Yes, we agree that children are more unhappy [due to the use of social networks]. (ParentSS5)  |
|  | Social networks are wasting children’s time                    | For me, the disadvantage [of using social networks] is the indescribable waste of time. Children don’t have the skills to tell themselves “enough”. (ParentSS6)  |
|  | Social networks as a psychological burden                      | Children are also naive, trusting. To my younger daughter, Instagram is especially exhausting. She thinks about which picture to publish — she has a hundred filters. She is not satisfied after that, she is just exhausted. (ParentSS6)  |

### ***Cybersecurity: Quantitative Results***

Some of our other results regarding the cybersecurity of children on social networks also deserve mention. As many as 21.57% ( $n = 110$ ) of our young participants maintained a public profile, 10.98% ( $n = 56$ ) did not know how to use security and privacy settings on social media; in total, 22.35% ( $n = 114$ ) had not used such settings. Setting a password is one way to prevent unauthorized access to private information on social media and prevent numerous other abuses, such as profile theft and unauthorized sharing of information — but only if the password is kept confidential. Nevertheless, 19.84% ( $n = 100$ ) of participants shared their passwords with partners and close friends.

Arranging real world meetings with strangers encountered online is a high-risk behavior. Against much advice, 64.31% ( $n = 328$ ) of the children in our study had experience of online meetings, and 63.73% ( $n = 325$ ) expressed the intention of physically meeting strangers whom they had first encountered online. Rogers (2010) noted that peer pressure and the desire to gain popularity impel adolescents to make online friendships with strangers and disclose personal information to them. Accordingly, adolescents who are active on social networks are at greater risk of exposure to cyberbullying (Navarro & Jasinski, 2012) than are those who do not use them. Also, our research identified that 20.67% ( $n = 105$ ) have sent nude or otherwise inappropriate photos of themselves via the internet to friends or partners, and that 1.18% ( $n = 6$ ) have sent such photos to strangers.

Our results should be taken into account when planning cybersecurity strategies for children. Such strategies should include timely and adequate interventions that are based on local needs and fit the specifics of each institution. Educating children, parents, and professionals in the field of safe internet use is particularly important today when the online world and internet activities are entwined in the lives of almost every child and family.

### ***Cybersecurity: Qualitative Results***

Qualitative analysis confirms that participants are aware that personal data can be misused for identity theft and that images can be misused through modification and publishing of materials intended to shame a victim. Participants were also knowledgeable regarding other misuse of personal information and the importance of safeguarding online privacy and not sharing personal details (Table 4).

Very concerning is the finding that children are underestimating the risks of real-world contact with people they have met online. This should be addressed by preventive strategies to educate care workers, parents, and especially children on the potential hazards of online behavior and how to mitigate them.

Table 4. *Thematic Analysis: Participant Perspectives on Cybersecurity.*

| Theme                                | Category  | Chosen statement  |
|--------------------------------------|---|---|
| Misuse of personal data              | Identity theft and impersonation  | Fake profiles on Facebook: as far as I heard they are very popular. Then various messages are sent from this profile and the child in whose name messages were sent has no idea about it. (Teacher & Care workerSS3)                        |
|                                      | Misuse of images  | [Someone] takes a picture of some girl from the internet and then teases a friend to start an interest in her. We haven't done that, but we know someone who has. (StudentSS2)  |
|                                      | Misuse of other personal information                                      | I think the risk is to leave personal information, neighborhood, location, address... For example, I don't know anything about anyone, but I can find out everything very quickly. (StudentOS4)   |
| Dating people they met people online | Relativizing the risk of meeting people in real life: student perspective | Meeting people from the internet offline can be risky, but if they are followed on Instagram by 37 people you know and you know what school they are going to, you will know someone from that school, so it is not dangerous. (StudentOS4) |
|                                      | Awareness of the risks of meeting people in real life                     | Meeting someone we have met online may or may not be dangerous. You can never really know who you met until you see them live. (StudentOS7)   |

### ***Prevalence of Internet Addiction: Quantitative Results***

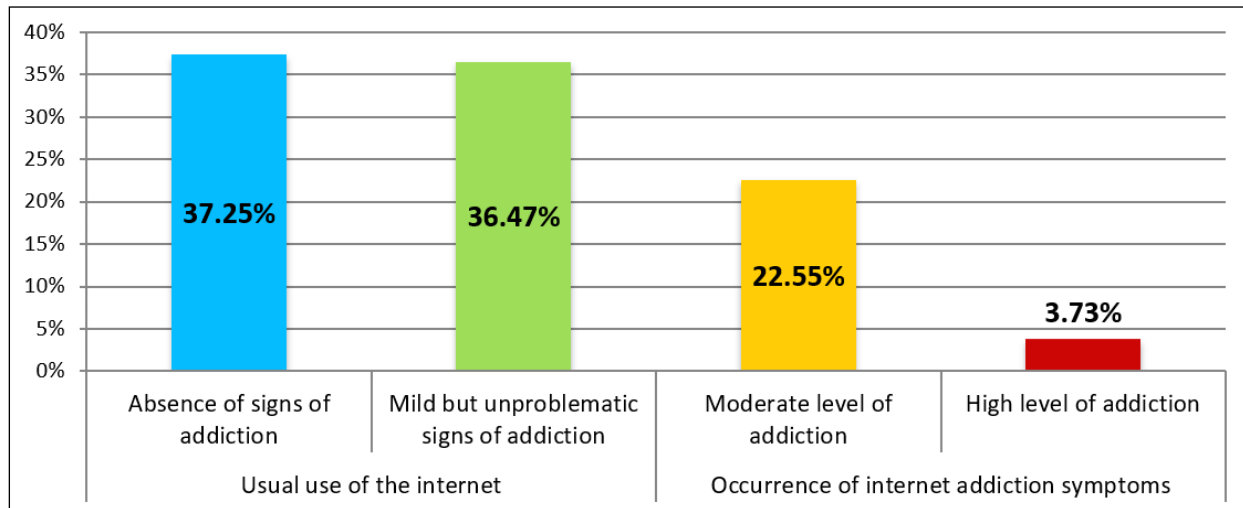
The current study indicated that on average the participants demonstrated moderate signs of addiction ( $M = 33.53$ ;  $SD = 17.77$ ). Among the symptoms of addiction reported were: extending online time; preoccupation with the internet, even while offline, or fantasizing about being online; sleep loss due to internet use; decline in grades or neglect of school work because of time spent online; and unsuccessful self-attempts to reduce time spent online.

A large majority (73.73%;  $n = 376$ ) of participants were not at risk of addiction (Figure 3). This group included students with no symptoms of addiction (37.25%;  $n = 190$ ), as well as those who exhibited mild but unproblematic signs of addiction (36.47%;  $n = 186$ ). However, more than a quarter of the participants (26.27%;  $n = 134$ ) were already experiencing high (3.73%;  $n = 19$ ) or moderate (22.5%;  $n = 115$ ) internet addiction, with the latter at risk of progressing to more severe addiction.

Tsitsika et al. (2014), in a large study with over 13,000 participants ( $N = 13,248$ ), showed that on average 1.2% of adolescents exhibited high levels of internet addiction; 12.7% had signs of addiction and were at risk of progressing to such a level. The same study found large variations in the level of internet addiction between subsamples of children from different European countries, with results ranging from 7.9% in Ireland to 22.8% in Spain.



Figure 3. *Prevalence of Internet Addiction*



When the total score for prevalence of internet addiction is broken down by gender, statistically significant differences are found, which contributes to the partial rejection of our first hypothesis. The Shapiro–Wilk test of normality (boys:  $f = 0.910$ ;  $df = 192$ ;  $p < .001$ ; and girls:  $f = 0.945$ ;  $df = 318$ ;  $p < .001$ ) shows non-normal distributions so a further analysis was conducted with Mann–Whitney (Mann–Whitney = 26991.5;  $df = 5$ ,  $p = .028$ ). The analysis identified that girls have statistically significant higher scores on the internet addiction scale, indicating that they experience internet addiction symptoms more frequently than boys do (girls:  $M = 30.233$ ;  $SD = 19.602$ ; boys:  $M = 26.505$ ;  $SD = 19.231$ ).

### ***Prevalence of Internet Addiction: Qualitative Results***

The phase of our qualitative research that focused on internet addiction extracted seven categories (Table 5). The participants identified symptoms matching some of the internet addiction criteria mentioned in previous paragraphs, such as excessive internet use, postponed sleep, and neglect of duties and tasks. They were familiar with the fact that internet addiction is like any other addiction. Despite this, and whether or not they were conscious of spending too much time online themselves, they were often willing to offer excuses for excessive internet use.

Children are informed about the negative aspects of internet addiction, and also about treatment programs. This is interesting considering that treatment of internet addiction in Croatia is still developing and as yet there are few institutions specializing in the treatment of problematic internet usage (Mihajlov & Vejmelka, 2017).

Table 5. *Thematic Analysis: Participant Perspectives on Internet Addiction*

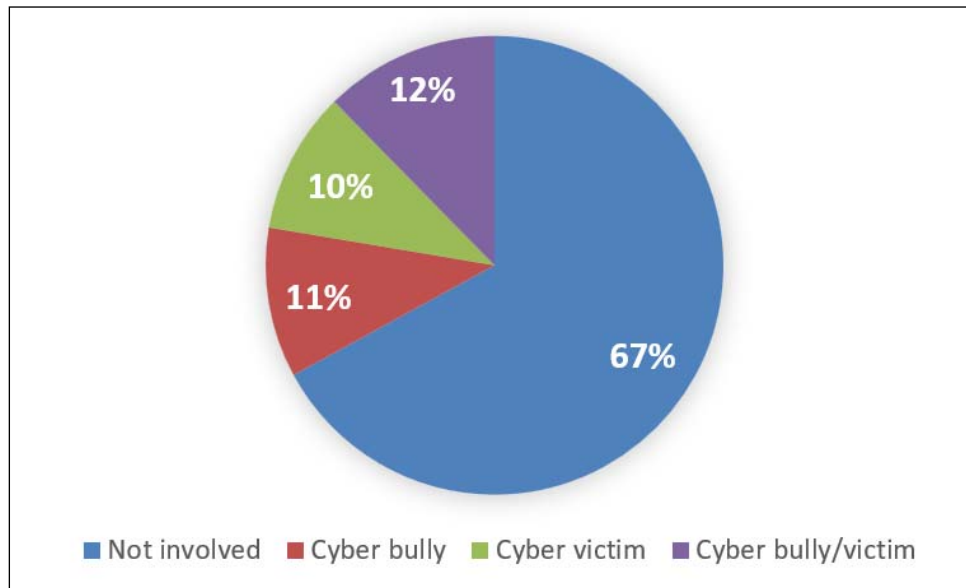
| Theme              | Category  | Chosen statement  |
|--------------------|---|---|
| Internet addiction | Excessive internet use                              | If someone spends more than 1/4 of the day on the internet, that is too much. (StudentOS8)<br>Some people have to use the internet too much when they are with other people, not only when they are alone. (StudentOS6) |
|                    | Postponed sleep                                     | They stay up all night and then do not function at school. (Teacher & Care workerSS2)   |
|                    | Neglecting duties and tasks                         | I would study more (for school) without the internet. (StudentSS2)  |
|                    | School tasks as an excuse for internet use          | Children neglect their obligations due to cell phones. (Teacher & Care workerSS5)   |
|                    | Addiction to online gaming (boys)                   | More boys are addicted to online games; they play them more. (TeacherSS05)  |
|                    | Awareness that internet addiction is a real problem | But addiction is addiction and some can't stand being without internet or cell phones: after some time they go crazy without internet, it's addiction. (StudentOS5)   |
|                    | Student perception of self-control in internet use  | It is no problem for me to stop using the internet, I don't use it very much in general. I play games but rarely when I have to learn as I don't have time. (StudentOS1)  |
|                    | Informed about a possible treatment                 | I know that there is something like rehabilitation centers for internet addicts. (StudentOS4)   |

### ***Prevalence of Cyberbullying: Quantitative Results***

Our results show that almost 33% ( $n = 168$ ) of participants were in some way involved in cyberbullying. The number of participants who had been victims of cyberbullying (10.0%;  $n = 51$ ) was similar to the number who had bullied someone online (10.59%;  $n = 54$ ), as seen in Figure 4. These results are consistent with the findings of Del Rey et al. (2015) in their study of cyberbullying in six European countries.

Moreover, 12.35% ( $n = 63$ ) of students were both cybervictims and cyberbullies (Figure 4). The prevalence of exposure to cyberbullying varies widely between countries, with results that have ranged from 2% in Italy and Portugal to 14% in Iceland (Haddon et al., 2012). More recent results from a cross-national comparative study conducted in seven European countries show that as many as 21.4% of young people had been exposed to violence through electronic media (Tsitsika et al., 2014). In a survey conducted in nine Croatian high schools, as many as 50% of students reported having participated in cyberbullying (Vejmelka et al., 2017). Analysis of our results shows no statistically significant difference in cyberbullying between boys and girls ( $\chi^2 = 3.726$ ;  $p = .293$ ), which is in line with previous research (Vejmelka et al., 2017) and contributes to partial acceptance of our first hypothesis.

Figure 4. *Cybervictimization and Cyberaggression Reported by Participants*



### ***Prevalence of Cyberbullying: Qualitative Results***

Qualitative analysis enabled deeper insight into the participants' experiences with and understanding of the cyberbullying phenomenon (Table 6). Both children and adults agreed that sending and receiving offensive content and joining internet hate groups were particularly problematic behaviors, but in other categories adults and children took mutually distinct positions. While adults showed awareness of the cyberbullying problem, children differed in lacking that awareness and in their normalization of violent behaviors in the online world.

It is interesting that adults ascribed most online bullying to girls, while children maintained that it was a problem mainly in younger age groups. Vejmelka et al. (2019) conducted a study in a school setting in the same region that found, on the contrary, that cyberbullying tended to increase with age. In that study, 35% of children in primary school and 42.3% of children in secondary school were found to be involved in cyberbullying. This raises the question of the extent to which they integrated this kind of behavior and began perceiving it not as problematic but as a routine mode of communication. Among the interesting responses elicited in our present study was the suggestion that cyberbullying is a product of other social processes, and in particular that it is a consequence of the normalization of violence in general and the erosion of standards of conduct in the real world.

Table 6. *Thematic Analysis: Participant Perspectives on Cyberbullying*

| Theme         | Category  | Chosen statement  |
|---------------|---|---|
| Cyberbullying | Sending and receiving offensive content                               | When he/she insults... sends some abusive messages... (StudentSS5)  |
|               | Internet hate groups  | In our class, cyberbullying also happened. One girl attacked another through a class group. (StudentOS1)  |
|               | Adult perception of girls as perpetrators of cyberbullying            | In internet violence, I think that girls lead in insulting, harassment, [and] mocking if one does not have branded clothes and shoes. (ParentSS7)   |
|               | Cyberbullying as effect of a social process                           | It seems to me that this violence on the internet is a side effect of some social processes.... How do we prevent people from mocking each other for their physical appearance? We all know that we are bolder on the internet. We should generally change standards in society. (StudentSS4) |
|               | Students' perceptions of experiencing cyberbullying at an earlier age | It is more an elementary school student problem than ours (StudentSS05)   |
|               | Lack of awareness among children and young people about cyberbullying | They do not perceive these ugly messages as such at all. (TeacherOS4)   |
|               | Adult awareness of cyberbullying                                      | I think cyberbullying is an emerging problem (TeacherSS02)  |
|               | Normalization of violent behavior on the internet by children         | In conversation with the children I concluded that they did not perceive these ugly messages as such at all. It's like they have a new way of communicating. (ParentOS4)  |

### ***Relationship Between Internet Addiction and Cyberbullying***

The relationship between internet addiction and cyberbullying was analyzed based on the total score of internet addiction and four categories of cyberbullying (Table 7). Analysis identified a statistically significant relation between internet addiction and cyberbullying (Welch = 123;  $df_1 = 3$ ;  $df_2 = 506$ ;  $p < .001$ ), and revealed that children who are involved in any kind of cyberbullying exhibit significantly more signs of internet addiction (Games-Howell = 28.110;  $df_1 = 3$ ;  $df_2 = 107.260$ ;  $p < .001$ ). This finding is in line with previous studies showing that higher levels of internet addiction among high school students are associated with their more frequent involvement in cyberbullying; this contributes to the acceptance of our second hypothesis (Nartgün & Cicioğlu, 2015; Vejmelka et al., 2017).

Table 7. *Games-Howell Post-Hoc Test*

| Dependent variable: IAT total score |                   |            |         |          |
|-------------------------------------|-------------------|------------|---------|----------|
| (I) Cyberbullying                   | (J) Status        | MD (I-J)   | SE      | <i>p</i> |
| Not involved                        | Cyberbully        | -15.91423* | 2.57984 | < .001   |
|                                     | Cybervictim       | -15.19092* | 3.62953 | .001     |
|                                     | Cyberbully/victim | -17.55973* | 2.59796 | < .001   |
| Cyberbully                          | Not involved      | 15.91423*  | 2.57984 | < .001   |
|                                     | Cybervictim       | 0.72331    | 4.27151 | .998     |
|                                     | Cyberbully/victim | -1.64550   | 3.43827 | .964     |
| Cybervictim                         | Not involved      | 15.19092*  | 3.62953 | .001     |
|                                     | Cyberbully        | -0.72331   | 4.27151 | .998     |
|                                     | Cyberbully/victim | -2.36881   | 4.28247 | .945     |
| Both cyberbully and cybervictim     | Not involved      | 17.55973*  | 2.59796 | < .001   |
|                                     | Cyberbully        | 1.64550    | 3.43827 | .964     |
|                                     | Cybervictim       | 2.36881    | 4.28247 | .945     |

\* $p \leq 0.001$ 

### Conclusion

It is apparent that about a quarter of the children in our sample were at risk of developing severe internet addiction, and that about the same proportion of children fell into two other categories: those who already had some experience with cyberbullying, and those who showed high-risk behaviors in the domain of online security and personal data sharing. These results are in line with previous research in the field of online risks among the general population of children in high school in Croatia. Although children in dormitory accommodation are separated from their families during the work week, the research findings on their online activities are consistent with the results of studies conducted in the school context of students living at home and attending local schools (Černja et al., 2019).

Thus, several of our findings are relevant to the planning of cyberviolence prevention programs for the general population, including children placed outside the family. For instance, they may indicate the importance of parental supervision and parental support in mitigating the risks associated with the online environment, a consideration that should certainly be included in future research activities, especially because parents show awareness of the cyberbullying problem and at the same time insecurity and anxiety about children's use of the internet. One of the most significant findings is children's normalization of problematic use of the internet and acceptance of online risk behaviors, especially offline meetings with online acquaintances, which can furnish opportunities for predators and perpetrators of sexual exploitation of children. Despite such

hazards, children show lack of awareness regarding these negative aspects of internet use. This finding should be considered carefully in future research that contributes to better understanding of online activities of children placed out-of-home for schooling.

Although the accommodation of children in placements outside their families is a risk factor for their problematic use of the internet, they also benefit from a protective factor: that they live with educated adults — their caregivers. Institutional accommodations vary in their specifics. In Croatia they usually cannot offer high-quality Wi-Fi, so children spend less time on the internet while residing in the institution. Similarly, we can point out the influence of peers as a risk factor, but a compensating protective factor is that institutions provide some organized leisure time through numerous activities. In sum, poor internet connections and some structured leisure time mean that the children have fewer opportunities to engage in problematic online behaviors. At the same time, however, they also have fewer opportunities to develop the digital competencies that today are valued in all sectors and professions. These observations suggest that the negative aspects of the online activities of children in dormitories might best be addressed through the careful planning, implementation, and continuous carrying out of both online and offline activities within institutions that can respond to the specific needs of these children.

Some of our results are particularly interesting on the regional level, and may serve to guide further practices with children, parents, teachers, and caregivers. But most aspects of children's online habits are subject to global influences whose impacts on actual situations and outcomes should not be ignored. In the context of the COVID-19 pandemic, these findings should be taken even more seriously, considering that children today are online more than ever. Problematic internet use by children is especially risky during this unplanned and rapid transfer to the online world of many aspects of life, not just in education, but also in fun and leisure time; in electronic contacts with friends and families; and collectively in a lot more online hours for all age groups, but especially children. The practical implications of the findings should direct and focus measures to address actual needs. The need for continuous research should also be emphasized: the internet is a fast-evolving medium, constantly offering new and improved options and new applications as social media networks and other providers and platforms compete to retain existing users and attract new ones.

The special contributions of this research are reflected in (1) the mixed-method approach that allows a broader understanding of an area under study; and (2) helping to build our understanding of the specifics of online interactions among children placed in care outside their own families. The online environment should be used for the promotion of positive online behaviors. We have the opportunity to utilize online content about safer internet use, and about preventing cyberbullying and other forms of problematic internet use among children, and share it widely on online platforms.

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