ABSTRACT

Parents have a great responsibility to protect their children while online, and to make sure that they are using digital technologies in a safe manner; at the same time, parents are not sufficiently educated and are unfamiliar with all regulatory mechanisms and possibilities for protecting their children online. Children need some help to take advantage of all positive aspects of digital trends and to protect themselves from those which are potentially negative. The international framework which standardizes the protection of the interests and rights of children on the internet is the focus of this work. The international legal framework is generally valid and binding for the national framework that regulates the same issues in Bosnia and Herzegovina (BiH). The aim of this research is to establish how well parents from BiH are acquainted with the Internet-related regulations and the mechanisms for ensuring Internet safety for their children and to what extent these mechanisms are being applied. The results of this research demonstrate that most parents are not sufficiently familiar with the regulatory mechanisms and are not using all available tools to protect their children online.

Keywords: regulatory mechanisms, parental control, child online protection, digital environment, Bosnia and Herzegovina (BiH).

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INTRODUCTION

Protecting a child’s best interests has expanded with the development of information-communication technologies (ICT) in the digital environment. Internet safety for children is one of the imperatives for both international and national policies, considering the growing intensity and frequency of children’s Internet use. The establishment of national and international regulatory mechanisms now make an online environment equally important as an offline environment. Apart from numerous advantages of the internet, there are many challenges and risks, especially for children.

The risks that children face online can be classified into four categories: “inappropriate content, inappropriate behavior, inappropriate contact, and commercial risks” (Livingstone and Haddon, 2009, according to: Guidelines for ICT companies on Child Online Protection, ITU, 2020, p. 19). Such risks necessitate a systemic, multi-pronged approach to better protect children’s safety, integrity, rights, and freedom online. Both legal regulation and parental regulation are the twin foundation of protecting and expanding Internet safety for children. By recognizing parents as the primary actors in ensuring safe Internet use by children, we wanted to examine parents’ familiarity with informal, at-home, or formal, ISP-created practices to increase internet safety. Because a child’s online behavior may reflect some of their parent’s competencies and skills, we hypothesize that parents in BiH currently have low levels of digital and media literacy skills, demonstrate irresponsible behavior on social media themselves, and do not adopt technical mechanisms for internet monitoring and safety.

LEGAL ISSUES IN ONLINE CHILD SAFETY

Bosnia and Herzegovina is a country in Eastern Europe with approximately 3.4 million inhabitants. It consists of three territorial entities (the Republic of Srpska, as a unitary entity, the Federation of BiH, comprising 10 cantons as decentralized entities, and the Brcko District, with a specific status of a district). “The Dayton Agreement sets forth only two entities (the Republic of Srpska and the Federation of BiH), as integral parts of Bosnia and Herzegovina” (Nešković, 2013, p. 219). The BiH regulatory framework, which follows the country’s internal structure, entails legal regulations adopted at various levels of authority, i.e. at the national-state level, entity and cantonal levels. Their adoption requires compliance with certain international standards through the norms of international law, formally being an integral part of the national legal system. The Constitution is passed both at the national-state level and entity levels, i.e. adopted on all three levels of authority, and systematic laws are also passed.
at both levels, as well as bylaws. An international document which explicitly deals with the protection of children’s rights is the UN Convention on the Rights of the Child (UN, 1989) which is also binding for BiH. This document is the first legally-binding international instrument in terms of the protection of the rights of the child, containing general provisions which, although not explicitly referencing online child protection, are partly applicable. The content of this document, among other things, highlights the importance of mass media as a platform suitable for exercising the right to expression, the right to information and for the promotion of child’s best interests by disseminating media contents which contribute to the child’s development, at the same time emphasizing the need for the protection of children from media contents endangering their development and well-being. This Convention also regulates the issue of privacy protection and the misuse of personal data, which represents some of the most problematic areas in the context of exposing children to the risks of the digital era.

To prevent sexual exploitation and abuse of children, the Council of Europe also adopted the Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse in 2007 (Council of Europe, 2007). The objectives of this Convention aim to prevent and combat sexual exploitation and sexual abuse of children; to protect the rights of children victims of sexual exploitation and sexual abuse; to promote national and international cooperation against sexual exploitation and sexual abuse of children.

More recently, the Committee on the Rights of the Child adopted at its 86th session the General Comment no. 25 (2021) on the Rights of the Child in relation to the digital environment (UN, 2021), recognizing the importance of adjusting international legal instruments to the new digital environment and the risks associated with such an environment. The Comment and its content accentuate the importance of the digital environment in terms of exercising and protecting civic rights and freedoms of children, including the right to privacy, non-discrimination, protection, education, play, etc. In addition, this document identifies the states as responsible for ensuring the provisions of the UN Convention on the Rights of the Child are enforced, including occasional reporting to the Committee about the fulfilment of obligations. One of the obligations of a state is to ensure that all relevant actors are responsible for making sure that children’s rights are protected. States should ensure that providers of digital services used by children apply concise and intelligible content labelling and provide access to the guidelines, training, educational materials and reporting mechanisms for children, parents, educators and relevant professional groups. States should also ensure that digital service providers comply with relevant guidelines, standards, and codes, enforcing lawful, necessary, and proportionate content moderation rules.

At the same time, it is stressed that the application of mechanisms for ensuring the safety of children as the users of digital services, such as content control, content filtering and moderation systems, should not restrict children’s fundamental rights and freedoms, i.e. access to information, freedom of expression etc. The document also highlights the significance of international and regional cooperation, bilateral and multilateral cooperation of the state with national and international non-governmental organizations, UN agencies, businesses and organizations specialized in child protection and human rights in relation to the digital environment. The importance of sharing of this document is accentuated in the sense that the states, signatories, should make sure that this General

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5 In this context, Article 17 of the UN Convention on the Protection of the Rights of the Child is important, which

6 No child shall be a subject to arbitrary or unlawful interference with his or her privacy, family, home or correspondence, nor to unlawful attacks on his or her honor and reputation (Article 16 of the UN Convention on the Rights of the Child).
Comment is widely disseminated to reach all relevant stakeholders.

Another international document of relevance, which is primarily focusing on the protection of the Internet users, including children, is the Convention on Cybercrime (Budapest Convention on Cyber Crime) (Council of Europe, 2001), which was also ratified by BiH.7 This Convention “establishing a common approach to the criminalization of offences related to computer systems and aims to make criminal investigations concerning such offences more effective. According to this convention, all conduct relating to child pornography must be established as a criminal offence”

(Media Regulatory Authorities and Protection of Minors, 2019, p. 13). Any act involving child pornography belongs to the category of content-related offense. The Convention defines those criminal offenses as follows: illegal access, illegal interception, data interference, system interference and misuse of devices (a criminal offense against the confidentiality, integrity, and availability of computer data and systems), computer-related forgery, computer-related fraud and infringement of copyright as well as of related rights (computer-related offense).

In connection with the General Comment no. 25, which explicitly regulates the right of the child in the digital environment and the Convention on Cyber Crime, primarily focusing on the harmonization and the establishment of common criminal policy regarding the protection of society from cyber-crime, there are also other international instruments of relevance for BiH, primarily some parts of such instruments. The European Convention for the Protection of Human Rights and Fundamental Freedoms (Council of Europe, 1950) deals with the right to freedom of expression but does not imply the absoluteness of this right since freedom of expression also requires certain duties and responsibility. In paragraph 2, Article 10, the Convention states that freedom of expression is not an absolute right in cases or situations where the exercise of this right entails the endangering of certain higher interests. Given the fact that the protection of the rights of the child is one of the highest interests, expression which jeopardizes the integrity, privacy, or safety of a child in an offline or an online environment can be restricted, otherwise it would represent the misuse of such a right. Similarly, the first paragraph of Article 8 of the Convention deals with the right to privacy while another paragraph regulates the protection measures in the fulfillment of this right.

Violation of the right to privacy can be observed in various types of Internet misuse, where the right to privacy is one of the fundamental human rights (Trninić & Kuprešanin Vukelić, 2021). Directly related to the protection of the right to privacy is the protection of personal data, which has gained a new dimension due to the growth and popularization of social media and different Internet applications. An international document which is important for the protection of privacy and personal data and relevant for the national regulatory framework of BiH is the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data (Convention 108). Along with its amendments, this rule was modernized in 2018 with the adoption of the Protocol amending the Convention (ETC 223) in 2018, renaming this as Convention 108+ known as the Modernized Convention8 (Trninić & Kuprešanin Vukelić, 2021). Related to this is also the General Data Protection Regulation (GDPR, 2016) being in force since May 25, 2018, after being adopted by the European Parliament in 2016. Although BiH is not an EU member, the GDPR is relevant for BiH in terms of the necessary alignment of the regulatory framework with EU legislation.

A satisfactory level of cyber safety is one of the preconditions that BiH must meet to achieve the country’s strategic goal of joining the EU through accession negotiations aimed at the full membership. The Directive (EU) 2016/1148 of the European Parliament and of the Council is very important as it concerns the measures for a high common level of security of network and information systems across the EU. i.e. the NIS Directive (European Union Agency for Cybersecurity, 2016). This Directive, among other things, lays down obligations of all member states to adopt a national strategy on the security of network and information systems. However, the EU BiH Progress Report for the year 2016 states that BiH has failed to take a comprehensive overall strategic approach to address the issue of cybercrime and cybersecurity threats (European Commission, 2016).

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7 At its 89th session, held on 25 March 2006, the Presidency of Bosnia and Herzegovina adopted the Decision on Ratification of the Convention on Cybercrime.

8 BiH signed Convention 108+ in July 2020.
The role of ICT companies (ISPs and others) vis-à-vis the safe Internet use by children and their corporative responsibilities in those regards have been highlighted in many different documents, including the ITU Guidelines for Child Online Protection (International Telecommunication Union – ITU, 2020)\(^9\), Guidelines for Policy Makers on Child Online Protection (ITU, 2020), Recommendation of the Council on Children in the Digital Environment by OECD (adopted in 2012, and updated in 2021), the OECD Guidelines for Digital Service Providers (OECD, 2021) and others.

There is not a single law that has been passed in BiH until now which explicitly deals with child online protection.\(^10\) However, the regulatory framework consists of legal regulations which are partially applicable in this context. The national legal framework and the intensity of its revision aimed at its adaptation to modern trends are significant indicators of the level of child online protection. By signing the EU Stabilization and Association Agreement, as well as by joining the Council of Europe, BiH has committed itself to abide by international legal standards and to harmonize its legal framework with these standards in all areas of relevance, including the protection of children. In that sense, the national legislation should be harmonized with the international law, regulating the protection of interests, rights, and freedoms of the child.

**The role of parental control in keeping children safe online**

Most national and international models of child online safety focus on active parental involvement. Indeed, parents have various control mechanisms available, which increase a child’s online safety when they are used correctly. Complete prohibition of or restriction to internet access is not recommended. On the contrary, parental control should be proactive and should focus on helping children understand how to use the internet safely, whether for education, information, communication, or entertainment.

Parents can support their child’s media literacy competencies through different strategies of mediation of television broadcasting. For example, a parent may choose to engage in co-viewing, and in the process, actively evaluate what channels, shows, or streaming platforms children can use, restricting access to individual channels or platforms on an as-needed basis. Researchers have distinguished three mediation strategies: active, restrictive, and co-viewing (Livingstone et al., 2017). With each method, the intent is the same: protecting a child through the strategic choice-making in selecting media content.

The internet represents a more complex challenge for parents because there is no simple or clear system of content regulation. As such, different and more nuanced mediation strategies are needed. According to the EU KIDS Online Network, the strategies for parental mediation of the Internet use by children aged 9 to 16 include (1) active mediation of Internet use (discussion and/or sharing of online activities); (2) active mediation for safety using restrictive or technical mediation; and (3) monitoring, i.e. reviewing a child’s online activities after his/her use of the Internet (Livingstone et al. 2011).

Parents choose among these different approaches depending on whether the they have a predominant desire to support the child’s ability to use media or a need to restrict his/her access to the media. Parental preference also plays a role in decisions to use either social or technical means to control a child’s media habits (Blum-Ross & Livingstone, 2016). Accordingly, distinctive parental orientations have been highlighted. First, there is the training-focused and socially oriented parent, who often gets involved in the use of media by a child, talking to his/her child about how and why media and media content have been developed and explaining how to interpret and evaluate different forms of presentations, including how to recognize and respond to the problems concerning privacy, risks and safety. Second, there is the training-focused and technically-oriented parent who supervises in what manner his/her child uses digital media by means of available applications and software, and tracks child’s physical movement offline. Third, there is the restrictive-socially oriented parent, who introduces different rules with regards to the use of media, more specifically at what time of the day, where and for how long children can(cannot) use media and ICT. Finally, there is the...
restrictive, technically oriented parent, who uses technology in order to restrict access to media devices or contents (Blum-Ross and Livingstone, 2016). Table 1 briefly describes these four different approaches. Which type of mediation parents will use and whether and how they might combine these methods depends on several factors, such as: parents’ knowledge, parenting style, child’s age, and his/her personal characteristics.

Table 1. Social and technical forms of parental mediation (Blum-Ross & Livingstone, 2016, p. 10)

<table>
<thead>
<tr>
<th>SOCIAL</th>
<th>TECHNICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active mediation</strong></td>
<td><strong>Monitoring</strong></td>
</tr>
<tr>
<td>Enabling</td>
<td>There are surveillance practices aimed at monitoring children’s uses of digital media as well as uses of digital media to monitor children’s physical movement offline. This can include, for example, installing apps or using inbuilt geo-location software (e.g. Find My Phone) to find out where children go outside school hours, or to give reports on websites and networks accessed. Some parents require their children to share their passwords, or (sometimes secretly) follow them on social media in order to monitor their usage. We have classified this as ‘enabling’ because for many parents such monitoring means they feel able to allow their child more freedom.</td>
</tr>
<tr>
<td>Rules</td>
<td>Parental control</td>
</tr>
<tr>
<td>Restrictive</td>
<td>These include a range of technologically enabled restrictions ranging from filtering software provided in broadband packages or on specific sites (e.g. ‘child-safe modes’), to turning off routers at set times or using apps and software packages to restrict either the content that can be accessed from particular devices or the times of day they can be used.</td>
</tr>
</tbody>
</table>

As for younger children, the focus is given to potential health hazards such as obesity, concentration disorders, sleep disturbance etc. Parents of older children are often affected by media habits of their children’s peers; therefore, they adjust their strategies to peer groups or to those of their friends in order not to make their children feel isolated. The risks in older children are often related to societal domain, in the sense of the impact of media on the child’s self-confidence, social relations with their peers, and matters of privacy protection (Blum-Ross & Livingstone, 2016).

The presentation of different parental orientations and their concise explanation point to the complexity of the parent’s role as intermediaries in the use of the Internet by their children. Clearly, parents need to have numerous media and information literacy as well as digital literacy competencies in order to engage in preventive and responsible engagement. For most parents, concerns about internet safety is particularly important, and it implies the application of different approaches that do not endanger the rights and freedoms of the child but do prevent the child’s exposure to various risks.

Accordingly, parental activities that are significant for the child’s online safety can be singled out. These include: (a) discussing with a child his/her online activities; (b) using the internet together with the child for doing joint activities; (c) introducing a child to safe Internet use and how to use the protection and privacy settings on social media; (d) explaining the meaning of age tags and inappropriate content; (e) using the applications for controlling and restricting access to inappropriate content; (f) talking to a child about the materials he/she is posting and sharing through social media; and (g) setting up the rules concerning the time, manner and purpose of the Internet use (Croatian Electronic Media Agency, 2016).

Technical tools available to parents enable different types of control mechanisms, such as contact management, time limits, internet usage supervision, blocking lists and content filtering. These types of control mechanisms are mainly made available by the Internet Service Providers (ISP) in the form of special...
packages (blocking lists and the possibility of content filtering, supervision and time limits, etc.), software and tools enabling parental control/supervision, and advanced routers/modems the installation of which allows for the parental control/supervision. However, for these to be useful, parents must recognize their value and utility and make efforts to use them; their availability alone does not represent a crucial resource for raising the level of child protection on the Internet (Čengić et al., 2021).

Application of software that enables parental control of the use of the Internet and computers by children is not always effective in some situations, because parents may lack the necessary technical support and financial resources to use them. However, in cases where parents “decide to use the software […] providing parents with specific information about their children’s internet use leads to a significant reduction of 6-10 percent in contemporaneous internet use” (Gallego, Malamud & Pop-Eleches, 2020, p. 1). “Parental control companies should rely on publicly available guidelines and best practices, including proper API endpoint authentication and web security standards (e.g., OWASP recommendations)” (Ali et al., 2021, pp. 44-45). Parents will use software to monitor their children’s online activity and try to protect their children only if they find the technology useful in terms of solving problems, which is largely the role of retailers rather than developers to present all online threats to children that can be mitigated by using certain software (Stewart, Brodowsky & Sciglimpaglia, 2021).

**METHODOLOGY**

The aim of this research was to establish to what extent parents from Bosnia and Herzegovina are acquainted with the international regulations and mechanisms for child protection; in what manner do parents control and protect their children online, and to what level; which mechanisms for child online safety do parents find most efficient; how do parents behave online; do parents expose their privacy and the privacy of their children and to what extent; how much and for which purpose do parents use the Internet, social media in particular.

Data collection on parental control and child online safety in Bosnia and Herzegovina was carried out April 8 - 18, 2022 and participants completed an online survey via the Google Forms application. This method was chosen to reach the respondents easily and, taking into consideration the target group, through various online parent groups.

**Sample**

Data collection was conducted on a convenience sample of 512 respondents. We used an online/offline combined sampling - the sample of respondents was formed in a typical manner, the respondents were contacted and referred to the Internet to fill out a survey (Popadić, Pavlović & Žeželj, 2018). We used snowball sampling (Milosavljević & Radosavljević, 2013), which allowed us to reach enough respondents in a short period of time. A link to an online study was sent to about 1,500 email addresses of parents from 100 municipalities in Bosnia and Herzegovina. We restricted data collection so that only one questionnaire could be completed from one account, to avoid redundancies in participation. The study link was also shared on online forums and the online communities for parents of minors.

**Instrument development**

We developed a survey questionnaire with precisely defined questions and pre-set answer choices (Milosavljević & Radosavljević, 2013), with response choices ranging from two to twelve. There were five basic parts and a total of 22 questions, starting with the introduction to the questionnaire; questions concerning demographic data of the respondents (six questions); questions about the familiarity with the Internet-related regulations (six questions), questions about the mechanisms of parental control and child online protection (five questions); and finally, questions about the behavior of parents on the internet (five questions). The questionnaire starts with the question concerning the familiarity with the Internet-related activities which are classified as a criminal offense under the BiH legislation and ends up with the question as to which child-related content parents share on social media, and how often they do it. All questions were mandatory; therefore all 512 respondents gave their answer to every single question.

For designing the questionnaire as a whole and for arranging the order of questions, we used the funnel technique (Milosavljević & Radosavljević, 2013), which means that the questions were listed down from more general to more specific ones. Given that the target group of this survey was specific, the explanation on the eligibility of respondents for the participation in the study was given on the home page of the study web site.
(parents of a child/children aged 0 to 18, living in Bosnia and Herzegovina). Parents with more than one child aged 0 to 18 were asked to respond on behalf of the child which is an older one and/or more active on the Internet in the part related to the behavior of a child on the Internet.

RESULTS

Half of the respondents were from the western part of Bosnia and Herzegovina, and the other half from the eastern part.

Table 2. Demographic characteristics of the sample

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 24</td>
<td>3</td>
<td>0.06</td>
</tr>
<tr>
<td>25 - 34</td>
<td>91</td>
<td>17.8</td>
</tr>
<tr>
<td>35 - 44</td>
<td>331</td>
<td>0.64</td>
</tr>
<tr>
<td>45 - 54</td>
<td>86</td>
<td>0.18</td>
</tr>
<tr>
<td>55 - 64</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65+</td>
<td>1</td>
<td>0.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>466</td>
<td>9</td>
</tr>
<tr>
<td>Male</td>
<td>46</td>
<td>91</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child’s Gender</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>270</td>
<td>52.7</td>
</tr>
<tr>
<td>Male</td>
<td>242</td>
<td>47.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneducated</td>
<td>1</td>
<td>0.02</td>
</tr>
<tr>
<td>Primary School</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>High School</td>
<td>133</td>
<td>26</td>
</tr>
<tr>
<td>College</td>
<td>12</td>
<td>2.3</td>
</tr>
<tr>
<td>University</td>
<td>261</td>
<td>51</td>
</tr>
<tr>
<td>Master or Professional Studies</td>
<td>63</td>
<td>12.3</td>
</tr>
<tr>
<td>Doctorate or PhD thesis</td>
<td>36</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3</td>
<td>24</td>
<td>4.7</td>
</tr>
<tr>
<td>4 - 6</td>
<td>53</td>
<td>10.4</td>
</tr>
<tr>
<td>7 - 10</td>
<td>264</td>
<td>51.6</td>
</tr>
<tr>
<td>11 - 14</td>
<td>144</td>
<td>28.1</td>
</tr>
<tr>
<td>15 - 18</td>
<td>27</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Geographically, the biggest turnout was from East Sarajevo and Banja Luka, followed by Sarajevo, Gradiska, Prijedor, Tuzla, Doboj, Zenica, and Brcko District. Table 2 shows the demographic characteristics of the sample. Most participants were female respondents (91%) ages 35 to 44 (64.6%) who had graduated from university (51%), with a female child (52.7%) between the ages of 7 to 10 (51.6%).

Familiarity with internet regulations

Respondents showed a high level of familiarity with online activities that are defined as a criminal offense under Bosnia and Herzegovina law. In particular, 97% are aware that producing, offering, and distributing child pornography through a computer system is a criminal offense, while 75.4% are aware that unauthorized use of someone else’s personal data constitutes a criminal offense. More than half of the respondents (57.4%) know that publishing another person’s photograph without their consent is subject to criminal liability. But only 25% of subjects knew that identity concealment is considered a criminal offense when it involves fraudulent representation.

When parents were asked to identify the methods used to get educated about safe Internet conduct, they could choose from among several options. Not surprisingly, most parents learn about safe internet use through the media (60.9%) or from talking to friends (56.3%). Many parents also gain information through websites on safe Internet use that are targeted to children and parents (55.1%). A smaller number of parents educate themselves by reading scientific literature (23.4%) or by attending seminars, workshops, or lectures (13.3%). A small number of parents noted that they use none of these methods (3.5%).

Formal and informal education about safe internet use needs to come primarily from official educational institutions and from professional experts. Other public stakeholders such as peers should and could give their own contributions, but by no means should they be the first or the only source of education.

11 It is very important here to highlight that sexual exploitation and child abuse are regulated as a criminal offense in criminal laws of both entities, and in the Brecko District Criminal Code, whereas it is only the RS Criminal Code that clearly explains what “child pornography” includes (Article 175; paragraph 2). In addition, the misuse of computer network and communication by other technical means aimed at committing a crime of sexual exploitation or child abuse are set forth as a criminal offense in the RS Criminal Code (Article 178).
Awareness of ISP-provided services

The majority of respondents have never asked for any special service from their ISPs about adding parental controls or supervision (58.6%). Out of those who have asked for such services, the majority chose the special service package that allowed for list blocking, content filtering, and monitoring and setting up the Internet use time limits (18.9%).

A comparable number of parents indicated their use of software tools enabling parental control or supervision (18.4%). Only 5.7% of parents requested services such as installing advanced routers/modems enabling parental control/supervision. Most parents (58.6%) indicated that they used none of these special services.

Awareness of National Legal Framework governing internet abuse

More than half of the respondents (52.7%) believe the existing national laws do not protect them or their children from online abuse, while 26% believe the existing legislation in BiH partially protects them, and 2.1% believe they are to a large extent protected. These results highlight the insufficient familiarity with the legal statutes in Bosnia and Herzegovina governing Internet use. As discussed earlier in this paper, the current national laws do offer legal protections to Internet users, and so the responses here suggest Internet users are unaware of them.

Parents were asked, “What do you consider to be the most efficient parental control mechanism for online child protection?” The respondents clearly their responsibility for supervision of Internet use, given that two-thirds of parents (63.7%) are of the opinion that supervision of their children while being online is the most efficient mechanism. Only 13.3% of participants thought that content filtering was most efficient, and 10.9% indicated that time limits were effective. Only a small percentage of parenting favored content blocking lists (3.3%) or contact management (2.5%). These results also highlight parental commitment to educational mediation between children and media since the control, in other words, the monitoring of the child’s online activities falls under the educational type of mediation techniques, which gives many parents the feeling that they are able of giving their children more freedom (Blum-Ross and Livingstone, 2016).

Online behavior of parents

Parents mostly use the Internet to exchange messages via correspondence applications (75%), to access social media (62%), and other platforms for the purpose of information gathering, education, and entertainment (57%). A minority of parents who use the Internet for creative purposes (6% create their own content) or to make their everyday life easier (17% report online shopping) or for their own education.

We also asked survey participants to tell us how often they shared content about their children on social media. As Table 3 shows, parents in report that they seldom share content concerning their children on social media, and most of them never do it. Most parents (71%) report that they would never publish their child’s home address but only 17% never publish photographs of their child. Of the parents who often share content about their children on social media, 18% post photographs (90 parents), 6% often share their children’s hobbies (30 parents), and 5% often share videos (24 parents). Only 4% often share information about their child’s age (22 parents) or their name and surname (21 parents), and 4% also often share information about school events (20 parents).

Parental control strategies

Most survey participants say that they always set up clear rules as to when, how and for what purpose their children may use the Internet (51%), and 49% say that always talk to their children about what they do online. The internet is always used for joint activities with the child by 15% of parents, and 41% of parents often use it in this manner. More than one in four parents (28%) always explain privacy and protection settings on social media to their children, but 64 parents (13%) never do it. Finally, 35% of parents always use applications for supervising and restricting the access to inappropriate content, while 79 parents (15%) never do it.

The results show that parents mainly opt for active educational social mediation between children and media; they apply educational technical mediation to a lesser degree, likely because it requires a certain level of technical knowledge of the Internet. Many parents use a social and behavior approach, such as setting rules for how often, in what manner, and at what time children may use the Internet, while they apply technical parental control tools to a lesser degree.
### Table 3. Parent disclosure of child-related information on social media

<table>
<thead>
<tr>
<th>Information Type</th>
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<th></th>
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<th></th>
<th>Never</th>
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<th>Percent</th>
<th>Number</th>
<th>Percent</th>
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<th>Percent</th>
<th>Number</th>
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<td>267</td>
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<td>71%</td>
<td>47</td>
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<td>0</td>
<td>0%</td>
<td>101</td>
<td>20%</td>
<td>355</td>
<td>69%</td>
<td>53</td>
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</table>

### Table 4. Parental mediation activities

| Variable                                                                 | Always |     | Often |    | Sometimes |     | Never |    | Child does not use the Internet | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
|--------------------------------------------------------------------------|--------|-----|-------|----|-----------|-----|-------|----|---------------------------------|--------|---------|        |---------|        |---------|        |---------|        |        |
| You are talking to your child about what he/she is doing online          | 252    | 49% | 206   | 40%| 23        | 4%   | 8     | 2%  | 28                              |        |         |        |         |        |         |        |         |        |         |
| You are using the Internet for joint activities with your child         | 76     | 15% | 211   | 41%| 174       | 34%  | 28    | 5%  | 23                              |        |         |        |         |        |         |        |         |        |         |
| You are explaining to your child how he/she can use the Internet safely | 182    | 36% | 204   | 40%| 82        | 16%  | 22    | 4%  | 26                              |        |         |        |         |        |         |        |         |        |         |
| You are explaining to your child privacy settings on social media        | 145    | 28% | 147   | 29%| 116       | 23%  | 64    | 13% | 44                              |        |         |        |         |        |         |        |         |        |         |
| You are explaining to your child the meaning of age tags and why certain contents are inappropriate for his/her age | 226    | 44% | 163   | 32%| 71        | 14%  | 29    | 6%  | 28                              |        |         |        |         |        |         |        |         |        |         |
| You are using supervision applications and application for inappropriate contents access restrictions | 177    | 35% | 86    | 17%| 147       | 29%  | 79    | 15% | 29                              |        |         |        |         |        |         |        |         |        |         |
| You are talking to your child about the contents he/she is posting and sharing on social media | 215    | 42% | 134   | 26%| 53        | 10%  | 46    | 9%   | 70                              |        |         |        |         |        |         |        |         |        |         |
| You are setting up clear rules as to when, how and for what purpose your child may use the Internet | 260    | 51% | 165   | 32%| 51        | 10%  | 12    | 2%   | 27                              |        |         |        |         |        |         |        |         |        |         |
| You are checking private messages that your child is exchanging through social media | 212    | 41% | 122   | 24%| 72        | 14%  | 45    | 9%   | 62                              |        |         |        |         |        |         |        |         |        |         |
| You are encouraging your child to use the Internet for educational purposes | 265    | 52% | 149   | 29%| 56        | 11%  | 18    | 4%   | 25                              |        |         |        |         |        |         |        |         |        |         |
DISCUSSION

As we hypothesized, the survey results and our analyses suggest parents in BiH are insufficiently familiar how they increase their child’s safety online and that they lacked media and digital literacy.

Auxiliary hypotheses that parents do not sufficiently use technical capacities and tools for child online protection, and that they do not use social media in a completely responsible and safe manner have also been confirmed. All of this stems from the absence of parental education in media and information literacy. In Bosnia Herzegovina, internet use is insufficiently represented in the formal education of the country and official public institutions seldom organize parental education efforts on safe internet use (Trninic, 2021). Recommendations for safe internet use are available on web pages of ministries and the Communication Regulatory Agency (CRA) in BiH; this is the only form of education offered to parents by any official institutions.

Parental education aimed at ensuring safe internet use is of particular significance because of the value of introducing parents to the potential risks that their children are exposed to in the online world. Research carried out in Serbia in 2016 about the potential internet risks and the Internet misuse shows that awareness levels are low. In a study involving parents of children aged 8 to 17, findings “demonstrate that parents are not sufficiently familiar with all the risks their children are exposed to in the online world and that parents have simply ‘transferred’ (allocated) their conventional and usual social fears and anxieties to a new, unknown, cyber environment” (UNICEF Serbia, 2016, p. 30). Similarly, research carried out in Montenegro talks about the perception of Internet risk by parents, and according to this research “when it comes to their children future, one third of parents do not believe that their children might face any problems or that their children might feel disturbed as a result of something that has happened on the Internet, while a slightly higher number of parents are of the opinion that something like this will most likely never happen to their children” (Logar, et al, 2016, p. 47). In addition, the results show that one in five parents would not be able to help his child should he/she experience something disturbing. Researchers note, “Only 41% of parents are very confident in their ability to help their children, claiming that they would certainly be able to support their children to cope up with anything that disturbs them, whereas 35% of them believe that they would be able to help to a certain degree” (Logar et al., 2016, pp. 47-48).

In Croatia, “only 12.9% of parents are aware that their child has had a contact with a person via Internet who he/she has never met in person, while others are of the opinion that their children have never had such an experience” (Ciboci, et al., 2020, p. 29). “Almost every tenth parent knows that their child has seen images that are obvious in the past year sexual, while the rest think that the children did not have such an experience,” and “only 4.3% of parents knew that their child had received sexual messages via internet” (Ciboci et al, 2020, p. 29).

Research carried out by the BiH Communication Regulatory Agency (CRA) showed that one third of parents (three out of ten) of children of all ages, would mostly get information and advice as to how to help a child stay safe when using media from their family member of friends - 33% (CRA, 2020). As far as adult education in media literacy is concerned, the situation is similar in our neighboring country – Croatia. Only 20% of Croatian citizens had the opportunity to get education in media literacy, i.e. to learn how to use different media, how media operate and how media content is created, as well as to develop the ability to analyze and critically evaluate media contents and news, whereas 81% of pupils and students believe that media literacy education should be more represented in school curricula (UNICEF Croatia and Croatian Electronic Media Agency, 2022).

According to the results of parents’ responses, children spend little time on the internet on a daily basis (31.8% of children spend zero to one hour a day on the internet). This was also confirmed by the survey conducted by the CRA and UNICEF BiH, where “parents estimated that their children aged 0-18 spent, on average, nearly three hours in front of a screen on a typical school day, and three and a half hours over the weekend, and that the time spent with the information-communication technologies increases with the age of a child” (UNICEF BiH and CRA, 2020, p. 5). UNICEF Head of the Research on Children and Digital Technology, Daniel Kardefelt-Winther believes that it is desirable for children to spend certain time on the Internet and to get acquainted with the digital world, even if they are exposed to certain risks, highlighting that parents have to give them support in this and talk to their children about this (Livingstone et al, 2019). As one scholar notes, “Research on dangers faced by children on the Internet reveals that when using the global network, in most cases they share their impressions not with their parents, but with friends and fellows” (Ojagverdiyeva, 2018, p. 89). “More than half of children facing threats do not share ideas about this matter” (Ojagverdiyeva,
2018, p. 89), it has been proven that children are attracted to the media even when they are small (Guedes et al., 2019). It can be particularly surprising because research on access and use of the Internet among children aged 8 and younger is growing at a high rate, namely, “the percent of children with access to some type of ‘smart’ mobile device at home (e.g., smartphone, tablet) has jumped from half (52%) to three-quarters (75%) of all children in just two years” (Common Sense Media, 2013, p. 9).

The Royal College for Paediatrics and Child Health of Great Britain claims that the safe amount of time which children should spend in front of the screen cannot be defined, given that every child is different, but that the attention should be paid to child’s age and individual child’s needs, as well as to the purpose of using the screen. They recommend that parents make arrangements with their children about the use of media (time, place, purpose), and that they all should adhere to such arrangements (Viner, Davie & Firth, 2019) while similar recommendations were also given by the Canadian Paediatric Society (Ponti, 2019). Our study found a high percentage of parents who use measures for restricting the use of the internet and for controlling the media content the child watches online, as opposed to limiting access to personal contacts through contact management measures (2.5%). The CRA and UNICEF BiH survey showed that parents claimed that their instruction as to who their children might contact online was one of the most frequent rules they imposed regarding the use of the internet (Muratbegović & Vujović, 2016; UNICEF BiH and CRA, 2020). The application of these measures reflects in the fact that most children of the surveyed parents do not have a personal profile on any social media (59%), at least according to their parents’ knowledge.

The selection of the sample of respondents represents one of the limitations of the research. It is not at the national level and for that reason it is not representative. Therefore, there is a possibility that research at the national level would offer different results than those presented. One of the limitations is that the research was done through an online survey and for the most part only urban areas were covered. One of the limitations is that the research was done through an online survey and for the most part only urban areas were covered. It would be interesting to include parents from rural areas in the research, which could be carried out on the basis of field tests, and then it would be very useful to compare those results with the results of this research. Also, due to the specificity of the questionnaire, there was another shortcoming, namely that parents with a larger number of children in the questionnaire were asked to fill it in only for older children and/or children who are more active in using the Internet. The study suggests thinking about research in which parents with multiple children would answer for each child individually, and then the researchers could analyze in more detail within one family the degree of parental protection and control of children on the Internet, in relation to the child’s age.

Parents have recognized their role and responsibility in protecting their children online but are lacking in education which would enable them to make use of all available protection capacities. Parents showed a high level of awareness of the online privacy protection significance, yet the number of parents who often share photographs and videos of their children is not negligible. Such data partly correspond to the results of similar research highlighting a high level of sharing children’s photographs (Brosch, 2016), emphasizing child’s right to privacy and recommending children’s greater involvement in parents’ decision-making as to whether they will publish information about their children, and which information about their children they will post on their profiles (Lazard et al., 2019; Macheron, Ponte & Jorge, 2018). The studies show that there are several factors crucial for the protection of children from potential dangers on digital media. Primarily, it is good communication, that is, established trust between parents and children, and that parents themselves should display positive digital behavior and should include their children in setting up the limits (Čengić, 2019; UNICEF Montenegro and IPSOS, 2018).

**CONCLUSION**

Modern parenting has brought new demands around protecting their children in the virtual world. This, in turn, demands parents to model responsible behavior on the internet and on social media in particular. During their compulsory education, parents never had the opportunity to learn anything about these topics, while at the level of higher education there are courses related to media literacy only at those faculties where the journalism and communicology are being studied (Trninić, 2017; Trninić, 2021).

When it comes to projects focusing on parents and their media literacy, the most active sector in Bosnia and Herzegovina is a non-governmental one. However, these organizations mainly focus on the protective parental approach, due to potential threats and
undesirable effects that media can have on children (Čengić, 2019). It is good to have such projects, especially because those projects are the only source of education for parents; however, an educational approach that also highlights positive aspects of new technologies for both parents and children should be encouraged. For parents to acquire competencies which would help them become a good role model to their children, it is necessary to provide them with a systematic approach to media literacy-related education. Such a process should involve all relevant aspects: personal, family, social, educational, in the formal sense, media (Trninić & Kuprešanin Vukelić, 2021). When parents become empowered, they would be more efficient in helping their children protect themselves online.

In terms of the ISPs which have been recognized in this paper as one of the key actors in raising the level of children safety online “it is necessary to enable the integration of child rights into the corporate policies, which would imply that these companies will redirect all their available technical resources, […] as much as possible to the online protection of children” (Kuprešanin et al., 2022, p. 88).

Finally, our research topics are just the beginning of understanding Internet safety for children in BiH. For further research, we suggest topics like cyber violence, the influence of video games, harmful television programs, child pornography and pedophilia, and excessive use of phones and computers by children. In the meantime, it is vital that media literacy educators and practitioners in BiH partner with the government and school districts in facilitating trainings for parents and students on the many approaches to increase their Internet safety.

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