




Pavel Izrael

 <https://orcid.org/0000-0002-3426-1378>

Juraj Holdoš

 <https://orcid.org/0000-0001-5789-2896>

Angela Almašiová

 <https://orcid.org/0000-0003-3992-0878>


Katarína Kohútová

 <https://orcid.org/0000-0001-9846-4716>

Catholic University in Ružomberok

 <https://ror.org/05ra6d150>

Children's experience with harmful content online

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Abstract

Children's experience with harmful content online

Children and young people's use of the Internet inevitably involves the possibility of encountering what we collectively refer to as "harmful" or "toxic" content. In our research sample, approximately 40% of respondents reported such experiences. One prominent category of harmful content includes material promoting extreme thinness, including pro-anorexia and pro-bulimia websites. Among all respondents, 5% encountered such content daily, with a significant gender difference — 9% of girls compared with 1% of boys. The likelihood of exposure also increased with age. Young Internet users experiencing emotional difficulties or a strong tendency to seek out novel and risky experiences reported more frequent exposure to harmful content. While an accepting family environment appears to be a possible protective factor, the low correlation suggests this influence is limited.

Keywords: children, Internet, harmful online content, emotional problems, sensation seeking

The younger generation has always been open and receptive to new trends, a tendency that extends to emerging technologies. At the turn of the twentieth and twenty-first centuries, research already pointed to a strong inclination among children and adolescents to use computers and the Internet (Rideout et al., 1999). Many parents viewed these technologies as opportunities for educational enrichment and the development of skills necessary for the information age (Turow, 1999). The rapid evolution of digital media has since expanded children's online engagement — from content creation and sharing, to communication via social networks, and now to interactions with artificial intelligence. In simple terms, childhood and adolescence today unfold within an ecosystem of media and digital technologies that deeply permeate young people's lives. Dafna Lemish describes this as a global media culture shaped by multiple realities, technological convergence, consumerism, and globalization (Lemish, 2015, p. 526).

Technological innovation has diversified how children and adolescents access the Internet, with mobile phones becoming the primary means of connection. Although statistics vary by age group, sample type, and year of data collection, the trend over recent years is evident. According to the *Net Children Go Mobile* study, 46% of children aged 9–16 owned a mobile phone

(Mascheroni & Cuman, 2014). A 2017 Slovak study reported that 74% of children aged 6–10 already had their own device (Juszczuk et al., 2017). Regarding frequency of use, another study found that 72% of children aged 9–17 accessed the Internet daily via mobile phones, and 1 in 5 spent more than 4 hours online on school days (Izrael et al., 2020). Later Slovak studies confirmed this increase, showing that up to 90% of children aged 9–17 now go online daily using mobile devices (Holdoš et al., 2022a; 2022b).

Alongside smartphones, social networking has become one of the defining features of youth digital culture. Social networking sites (SNS) encompass Web 2.0 tools that center on interaction and the sharing of diverse content (Moreno & Cota, 2014, pp. 435–456). Although some “digital immigrants,” as Prensky (2001) famously termed those not born into the digital world, may view online environments as detached from “real life,” in practice they form an integrated virtual–social–physical world that young people actively shape and inhabit (Williams & Merten, 2008). As media are embedded in everyday life, children and adolescents treat social networks as natural extensions of their social world. They communicate, seek information and entertainment, share personal content, and engage in self-presentation. For young people, there is no longer a clear boundary between the digital and non-digital realms. These two spheres converge, forming a hybrid reality through which adolescents navigate during a sensitive stage of psychological and social development.

Harmful content

Intensive engagement with online environments offers young people new opportunities for communication, education, information, and civic participation. However, it also exposes them to various risks. The conceptualization of online risk, which underpins the *EU Kids Online* framework, includes four interrelated categories: content risk, contact risk, conduct risk, and contract risk, each of which may appear in aggressive, sexual, or value-related forms (Livingstone & Stoilova, 2021).

- Content risk refers to exposure to harmful material such as violent, graphic, racist, hateful, pornographic, or misleading content.

- Contact risk involves harmful interactions with adults, including harassment, stalking, sexual exploitation, unwanted surveillance, or sextortion.
- Contract risk occurs when a child is exploited through fraudulent or manipulative agreements such as phishing, scams, gambling, or identity theft.
- Conduct risk arises when a child witnesses, participates in, or becomes a victim of harmful online behaviors such as bullying, hate speech, exclusion, shaming, sexual messaging, or self-harm.

A considerable body of research has addressed the prevalence of harmful or unsafe online content. Early U.S. studies found that approximately 4% of children and adolescents aged 10–17 had encountered hateful material online, with predictors including age, male gender, and more frequent Internet use (Ybarra, Mitchell, & Korchmaros, 2011). Data from the *EU Kids Online* study (Livingstone et al., 2011) indicated that 12% of children aged 11–16 had seen hate sites, 10% had viewed content promoting anorexia, 7% had encountered self-harm material, and 5% had seen suicidal content.

Updated data collected in 2018 across 18 European countries showed that, among children aged 12–16, around 10% had seen self-harm content, 8% suicide-related content, 12% material promoting anorexia or bulimia, 17% hate-related content, and 13% gory or violent imagery, at least once a month (Smahel, 2020). Representative Slovak data based on the *EU Kids Online* methodology (Holdoš et al., 2022b) confirmed a rising trend: 12% of respondents reported exposure to self-harm material, 10% to suicide-related content, and 19% to hate speech.

Research consistently demonstrates that exposure to harmful content correlates with lower subjective well-being (Keipi et al., 2017) and increased engagement in risky offline behaviors (Branley & Covey, 2017). Online material promoting eating disorders may normalize harmful behaviors by providing tips on concealing them from parents (Campaioli et al., 2017). Suicide-related websites and forums often contain explicit discussions of methods, intentions, and death fantasies (Keipi et al., 2017). Hate or cyberhate content typically expresses hostility toward groups based on race, ethnicity, religion, gender, sexual orientation, or other characteristics (Wachs et al., 2017), while violent content frequently depicts torture, cruelty, or graphic aggression against people or animals (Livingstone & Stoilova, 2021).

Risk and protective factors

Adolescence is a developmental stage often characterized by emotional fluctuation and heightened sensitivity to negative affect. Problematic Internet use may serve as a coping mechanism for some adolescents facing emotional distress (Laconi et al., 2017, pp. 47–54). Prior studies have demonstrated links between adolescents' emotional problems and various risky online behaviors, including excessive Internet use (Helsper & Smahel, 2019, pp. 1255–1273) and sexting (Ševčíková, 2016, pp. 156–162). Adolescents who are more prone to negative emotions also tend to report greater exposure to harmful online content (Oksanen et al., 2016).

Although previous research suggests that emotional problems may contribute to problematic behavior online, their specific role in relation to exposure to harmful content remains underexplored. Comparative studies conducted in the Czech Republic, Finland, and Spain found a clear association between emotional difficulties and exposure to harmful online material (Kvardova et al., 2021, pp. 2294–2310). The same line of research confirmed a link between exposure to harmful content and sensation seeking—the tendency to pursue new, stimulating, and potentially risky experiences. Sensation seeking has been positively correlated with adolescents' interest in media content depicting alcohol use, violence, and sexuality (Khurana et al., 2019), as well as with exposure to “ana-mia” websites—online spaces discussing methods for extreme thinness (Almenara, Machackova, & Smahel, 2016, pp. 475–480).

Since relationships with parents and other family members influence adolescents' patterns of Internet use, the family environment may represent a significant factor shaping exposure to harmful content. A supportive and communicative family context may reduce risk, although such protection may vary depending on the adolescent's emotional and behavioral disposition.

Finally, digital skills can play a dual role—both a protective factor and a risk factor. While greater digital literacy may help young users critically assess online content, it can also increase the likelihood of encountering harmful material through broader and more autonomous exploration of the Internet (Tercova & Smahel, 2025).

Empirical findings also indicate that exposure to harmful online content is strongly associated with adolescents' psychological distress and that these associations vary by gender (Biswas et al., 2025).

Methods

Sample

The research was conducted with a sample of 1,932 children and adolescents aged 9–18 years. The sample included 49.1% girls ($n = 949$) and 50.9% boys ($n = 983$). The age distribution was as follows: 9–10 years (11.4%), 11–12 years (18.6%), 13–14 years (21.3%), 15–17 years (36.0%), and 18 years (12.7%). The mean age was 14.22 years ($SD = 2.70$). Data collection took place in June 2023 across all types of primary and secondary schools in Slovakia. Participants were selected using a representative sampling method based on a comprehensive list of Slovak schools.

Instruments

Data were collected using the CAPI (Computer-Assisted Personal Interviewing) method.

- Exposure to harmful online content was measured with six items from the *EU Kids Online Research Toolkit* (see lse.ac.uk/EUKidsOnline/Toolkit). Respondents reported whether, in the previous year, they had encountered any online content or discussions concerning the following topics: (1) ways of physically harming or hurting oneself; (2) methods of committing suicide; (3) ways of being very thin (e.g., pro-anorexia, pro-bulimia, or “thinspiration” sites); (4) hate messages targeting specific groups or individuals (e.g., based on religion, nationality, or sexuality); (5) experiences of drug use; and (6) gory or violent imagery involving people or animals. Responses ranged from 1 (*Never*) to 5 (*Daily or almost daily*). The scale’s internal consistency was satisfactory ($\omega = 0.86$).
- Emotional problems were assessed using four items from the *EU Kids Online Research Toolkit*. Respondents rated how factual the following statements were for them: “I worry a lot,” “I am nervous in new situations and easily lose confidence,” “I am often unhappy, sad, or tearful,” and “I have many fears and am easily scared.” Responses ranged from 1 (*Not true*) to 4 (*Very true*), with acceptable internal consistency ($\omega = 0.83$).
- Sensation seeking was measured with four items from the same toolkit, such as “I do dangerous things for fun” and “I do exciting things even

if they are dangerous.” Responses ranged from 1 (*Not true*) to 4 (*Very true*). The scale's internal consistency was acceptable ($\omega = 0.87$).

- Family environment was measured with three items assessing family support (e.g., “When I speak, someone listens to what I say,” “My family really tries to help me”) and feelings of safety (“I feel safe at home”). Responses ranged from 1 (*Not true*) to 4 (*Very true*). Internal consistency was acceptable ($\omega = 0.79$).

Results

Exposure to Harmful Content

The data revealed that nearly 40% of respondents had encountered at least one type of harmful online content in the previous year. The most frequently reported category was *hate content*—21% of children and adolescents had seen hate messages online. Exposure to *gory or violent imagery* was reported by 15% of respondents, while 13% had seen material related to *drug use*. Content promoting *extreme thinness* (pro-anorexia or pro-bulimia) was encountered by 10% of respondents, and content concerning *self-harm or suicide* by 8%.

A small but notable group—5% of respondents—reported exposure to such content *daily or almost daily*. The likelihood of encountering harmful material increased with age, and gender differences were significant: girls were more likely than boys to encounter pro-anorexia and pro-bulimia content (9% vs. 1%), while boys more often encountered violent or gory content.

Correlates of Exposure

Exposure to harmful content correlated positively with *emotional problems* ($r = .26, p < .001$) and *sensation seeking* ($r = .30, p < .001$). These results indicate that adolescents with higher emotional distress and stronger tendencies toward novelty-seeking behavior were more likely to encounter harmful material online.

A weak but statistically significant negative correlation was found between *family environment* and exposure to harmful content ($r = -.13, p < .001$), suggesting that a supportive and communicative home environment may serve

as a partial protective factor. However, the low magnitude of the correlation indicates that such influence is limited.

No significant gender differences were observed in the relationship between emotional problems, sensation seeking, and exposure to harmful content. The observed trends remained consistent across age groups.

Discussion

The results of this study confirm earlier findings that exposure to harmful online content is a common experience among children and adolescents. Nearly four in ten respondents reported encountering at least one type of such content within the past year. Consistent with previous *EU Kids Online* data, hate material remains the most prevalent category, followed by violent or gory content. However, the results also indicate that exposure to content promoting extreme thinness is more common among girls, while boys are more likely to encounter violent imagery.

The positive correlation between emotional problems and exposure to harmful content suggests that children and adolescents experiencing emotional distress may not only be more vulnerable to such material but may also be drawn to it as a form of maladaptive coping. These findings align with prior research showing that problematic Internet use and other risky online behaviors are often associated with emotional difficulties (Kvardova et al., 2021; Oksanen et al., 2016). The Internet may function as an easily accessible environment where adolescents attempt to regulate negative emotions, seek reassurance, or externalize distress.

The observed relationship between sensation seeking and exposure to harmful content corresponds with earlier findings that adolescents who actively seek novelty and stimulation are more likely to engage with risky online material, including content involving violence, substance use, or eating disorders (Almenara, Machackova, & Smahel, 2016; Khurana et al., 2019). While such exploration can reflect developmental needs for autonomy and experimentation, it may also increase vulnerability to harmful influences.

Although the family environment showed a weak negative correlation with exposure to harmful content, this finding should not be underestimated. Even a modest protective effect highlights the potential value of supportive parent–child communication in mitigating risk. Parental attention, openness,

and the establishment of trust-based dialogue about online experiences may reduce the likelihood of exposure or the adverse effects thereof. Nonetheless, as digital media increasingly permeate children's daily lives, the family's influence is often outweighed by peer and platform dynamics.

The findings underscore the importance of preventive education that goes beyond content regulation and focuses on *emotional resilience* and *critical media literacy*. Empowering young Internet users to recognize and respond to harmful content, while addressing their emotional and social needs, remains a key challenge for educators, policymakers, and parents alike.

Conclusion

The findings presented in this study highlight the growing need to address children's and adolescents' exposure to harmful online content as an integral part of contemporary discussions on digital safety and well-being. Approximately 40% of participants reported encountering at least one type of such material, with hate content, violent imagery, and pro-anorexia or pro-bulimia material being the most common.

Exposure to harmful content was associated with both emotional problems and sensation seeking, suggesting that adolescents' psychological characteristics play a key role in shaping their online experiences. A supportive family environment may offer partial protection, but its mitigating influence appears limited.

These findings underscore the importance of preventive and educational interventions to enhance young people's digital resilience. Programs should focus not only on technical safety or parental monitoring but also on emotional regulation, media literacy, and the ability to assess online content critically. Further research should explore the complex interactions among personal traits, family context, and digital environments to understand better how children navigate the risks of the online world.

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