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Introduction

Research **Risks of electronic/internet communication IV** represents the fourth nationwide research, which was conducted by the E-Bezpečí project (guaranteed by professional workplace of Centre for the Prevention of risky virtual communication Palacký University in Olomouc) in cooperation with Seznam.cz. The research was traditionally focused on the area of risky behaviour associated with information and communication technologies, especially the Internet, in a population of Czech children.

In the research the following phenomena were monitored:

A. **Cyberbullying** (various forms of cyberbulling in relation to selected means of communication).

B. **Establishing of virtual contacts** (communication with strangers and personal meetings with them; basis for cybergrooming).

C. **Sexting** (in the form of public sharing of intimate materials on the Internet and providing intimate material on request of another person).

D. **Sharing of personal data on the Internet** (with a focus on sharing face photos).

E. **Other related phenomena**.

In the following part we will therefore briefly describe the theoretical background, which was the basis of our investigation.

First, we will focus on the issue of cyberbullying, which is based on existing definitions of bullying (in Czech environment, M. Kolář is primarily engaged in bullying), which is perceived as aggressive, intentional, repeated action or behavior against any individual or group that cannot defend (Whitney & Smith 1993, Olweus 1999). Other authors understand cyberbullying as a form of harassment based on power imbalance and the systematic abuse of power (Smith & Sharp 1995, Rigby 2002).

A more specific definition of cyberbullying is by Hinduja and Patchin (2009) and Dehue, Bolman, Völlink,
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For our needs we have defined cyberbullying as a form of aggression that is carried out against individuals or groups by using information and communication technologies, which occurs repeatedly (Belsey 2004, Smith & Slonje 2007), whether by the original aggressor or the so-called secondary invaders. Kowalski, Limber and others add (2007–2008) that it is the bullying that occurs through e-mail, ICQ, mobile phones (SMS, MMS, phone calls), chat, website, and other ICT.

In the Czech environment, mainly Michal Kolář, David Šmahel, Veronika Krejčí and Kamil Kopecký are engaged in cyberbullying; they do not deviate from the foreign approach.

In the process of cyberbullying and other hazardous communication practices like sexting and cybergrooming, sharing of personal information by children on the Internet plays an important role. Many foreign studies deal with it and indicate a high percentage of children publishing their personal data on the Internet. For example, according to the research site eMarketer (2007), 75 % of American children are willing to share their personal data and information about the family with other Internet users in exchange for access to services and products offered on the Internet, which can be especially dangerous for example in relation to cybergrooming. Statistics of Zoomsphere (2013), which monitors the user’s largest social network Facebook, indicate that 23 % of registered Czechs users are aged 0–19 years.

According to Zoomsphere (2013), to 19th May 2013 the total number of Facebook users in the Czech Republic is 3 943 240, the estimated number of child users sharing their personal data on the network
is about 1 800 000 (957 460 aged 0-15). However, the real number will be lower due to the different age structure of defined users in demographic surveys of Zoomsphere (2013) (0–19 years).

There are, of course, several qualitatively oriented researches observing the factors influencing the sharing of personal data (by children, adults) on the Internet and from this point of view, there is an interesting research called Australian Research ACMA (2009) – Attitudes towards use of personal information online.

There are not many researches implemented on representative samples in the Czech Republic aimed at sharing of personal information by children through information and communication technologies. We can name research Risks of electronic communication II (Kopecký, Krejčí 2011) and Risks of Internet communication III (Kopecký, Szotkowski, Krejčí 2012). Both researches were conducted on representative samples. Research Risks of electronic communications II was carried out on a sample of 12 533 respondents under 18 years of age. Its final report released the data on which children can be traced in real life – name, along with surname, was published by 72,97 % of respondents and 60,22 % of the respondents say it to others; according to this study, 63,19 % of Czech children share the e-mail address, 22,8 % of children share mobile phone number. Research Risks of electronic communication IV was implemented on a much larger sample which consisted of 21 372 respondents under 18 years of age. The measured data (as in the previous research) showed that 75,64 % of respondents publish their name along with surname and 51,96 % of the respondents say it to others; 58,68 % of Czech children share the e-mail address and 16,78 % of children share their phone number.

Within our research, we again looked into the phenomenon called sexting. Sexting refers to sending electronic text messages, own photos or videos with sexual content (Kopecký 2010). It occurs in the virtual environment of electronic media, especially the Internet.
One of the first widely used definitions defines **sexting** as sending nude photographs depicting nudity among mobile phones or other electronic media such as the Internet (Streichman 2009), and now, according to some authors, sexting is primarily associated with younger generation, who takes its sexually suggestive materials (so-called youth-produced sexual images), send it and distribute it (Wolak, Finkelhor, Mitchell 2011–2012).

Sullivan (2011) adds the definition of sexting; he includes suggestive text messages and images depicting naked or partially naked children and adults, which are then spread by mobile phones or the Internet. Number of platforms and tools for spreading such materials has been complemented by Streichman (2009–2011) by social networks, especially Facebook and MySpace.

In the Czech environment, sexting is distributed primarily through social networks Facebook, Líbímseti.cz or digital storage of photos Rajče.net (Kopecký 2011).

The researches focused on the issue of sexting have been taking place since 2009 in many countries around the world, for example in the U.S., UK, Australia, Canada, China (Jolicoeur 2010) and the Czech Republic (Kopecký, Krejčí, 2011), (Kopecký, Szotkowski, Krejčí 2012). It is worth mentioning the research within The National Campaign to Prevent Teen and Unplanned Pregnancy (USA 2009), which presents remarkable results on the prevalence of sexting among young Internet and mobile phone users.

The first more extensive researches monitoring the current status of sharing and sending sexually tuned content to other Internet users in the Czech Republic were researches Risks of electronic communication II (Kopecký, Krejčí 2011) and Risks of electronic communication III (Kopecký, Szotkowski, Krejčí 2012). Research on Risks of electronic communication II (Kopecký, Krejčí 2011) worked with a sample of 10,414 respondents and revealed that 9.70% of children (11–17 years old) share their
Introduction

sexual material on the Internet and 10.44% then send it to other people. Research on Risk of electronic communication III (Kopecký, Szotkowski, Krejčí 2012) worked with a sample of 10,700 respondents revealed that 8.25% of children (11–17 years old) share their sexual materials on the Internet and 9.15% of them send it to others. The data showed that sexting is not so expanded in the Czech environment as it is in the U.S. and other countries.
Methods
Methods

In the description of the research procedure we will present the objectives of the research, which will be followed by a description of the research sample and research methodology. We will also mention the timetable and method of data processing.

The main objective of the research was to determine the incidence of risky behaviour among Czech children associated with information and communication technologies, particularly the Internet and mobile phones. In the descriptive level the aim of the research was to determine the number of victims and attackers involved in the various manifestations of cyberbullying. Simultaneously, it monitored from whom the victim would seek help if needed (teacher, parent, sibling or friend).

Another objective was to determine whether children communicate with strangers on the Internet, if they have been asked for a personal meeting and if they are willing to meet virtual friends or acquaintances in the real world, which is closely related to the phenomenon called cybergrooming.

The aim was also to find forms of public sharing of intimate materials on the Internet and reveal the motivation of pubescents and adolescent for this behaviour, for example, sexting. We also wondered how many of the respondents considered sexting to be risky.

In this context we focused on children sharing personal data on the Internet (especially the facial image) and their knowledge of social networks. Social networks represent a place of numerous cyber attacks, which are implemented with the use of personal information shared by particular users, and data that attackers will get if these networks security fails.

Due to the limited scope of the paper, we will present only partial results of the descriptive research; the relational level is not mentioned in the paper, as we have already published its results in other periodicals.
Methods

In the descriptive level we pay attention to the issue of cyberbullying among Czech children, cybergrooming (personal meetings with people with unverified identity, risk communication with unverified Internet users) and sexting.

As in the previous years (2009–2012), when we performed similar studies, the research sample consisted of users of the Internet and mobile phones among pupils in primary and secondary schools in the Czech Republic. Considering the research issue, the age of respondents was limited from 11 to 17 years, and than we divided this period into two age categories: 11–14 years, 15–17 years. The total number of respondents in the research Risks of electronic communication IV was 21 372. The following Table 1 shows the selected sample of respondents in detail.

Table 1: Structure of the sample of respondents by sex

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>11-14</td>
<td>7 923</td>
<td>6 731</td>
</tr>
<tr>
<td>15-17</td>
<td>3 920</td>
<td>2 798</td>
</tr>
<tr>
<td>Overall</td>
<td>11 843</td>
<td>9 529</td>
</tr>
</tbody>
</table>
The research sample consisted of 55.42% of cases of girls and 44.58% of the cases of boys. 68.57% of respondents were aged 11–14 years and 31.43% was 15–17 years old. All regions of the Czech Republic were included.

To increase the representativeness of the research sample, we tried to get proportional numbers of respondents to match the demographic distribution of the individual regions.

To select elements in the research sample, we chose a controlled selection (proportional stratified selection), in which the number of respondents is collected into notional subgroups (in our case regions) proportional to the number of respondents in the population.

With regard to the intended number of respondents the actual research was oriented quantitatively and as a starting research method the questionnaire was chosen. The research tool with verified properties (validity, reliability) contained a total of 71 items (40 dichotomous, 2 polytomous, 22 of multiple choice and 7 open), which were based on theoretical knowledge and were arranged in such a way to reflect the objectives and problems.

The questionnaire was distributed electronically (on-line) through a questionnaire system of the E-Bezpečí project, which has e-mail addresses of 8,641 schools, educational institutions, associations aimed at children and young people and other institutions in the Czech Republic.

Team members of the E-Bezpečí project made the list of addresses in 2009–2012 from publicly available sources, due to the realization of previous researchs. Anonymous questionnaire automatically verified where it was sent from (IP address, regional affiliation, monitored the behavior of respondents by use of Google Analytics, etc.), it offered the possibility of
Methods

stating the e-mail address of school, through which the school could be in contact with the research team - some schools involved in the research asked the isolation of their data and their subsequent processing.

The preparation of the research was launched on 1st May 2012; the data were collected from 1st November 2012 to 31st January 2013. The evaluation of the data was carried out in February 2013.

The measured data were mostly at nominal and ordinal level, which corresponded to a subsequent processing, numerical operations and statistics.

The advantage of the electronic version of the research instrument (questionnaire) was the automatization of the data collection to the appropriate tables. Subsequently, the sorting, processing and evaluation was made.

On the descriptive problems we were looking for answers through the fundamentals of descriptive statistics (calculation of the characteristics of the area – central tendency measures, the calculation of standard deviation, percent calculation, etc.) including the graphical representation.

To verify the hypothesis, we used inductive statistics, namely the test of independence chi-square for foursquare table. As mentioned above, with regard to the length of the paper we have not showed the details here.
Results

Czech children and cyberbullying

A substantial part of our research was focused on cyberbullying. 21,372 respondents took part in the research and it consisted of the following topics:

A) **Victims of cyberbullying** (the number of victims in relation to individual acts of cyberbullying and platforms on which cyberbullying takes place).
B) **The originator of cyberbullying** (number of attackers in relation to individual acts of cyberbullying and platforms on which cyberbullying takes place).
C) **Persons involved in addressing cyberbullying** (who the victim would contact in the situation of cyberbullying).
D) **Other related phenomena** (specific forms of cyberbullying realized, for example, by breaking account and subsequent identity theft, etc.).

Within the research we observed these forms of cyberbullying:

a) **Verbal attacks in cyberspace – harm through humiliation, insulting and embarassing of the child.**
b) **Bothering by drop-calls.**
c) **Threats and intimidation of the child.**
d) **Identity theft.**
e) **Blackmailing of the child.**
f) **Humiliation, embarassing realized by spreading photographs.**
g) **Humiliation, embarassing realized by spreading video.**
h) **Humiliation, embarassing realized by spreading audio.**

In the following text we will focus on selected results of descriptive part of the research based on the above-mentioned topics.
Results

A) Victims of cyberbullying
(the number of victims in relation to individual acts of cyberbullying and platforms on which cyberbullying takes place).

Graph 1: The most common forms of cyberbullying from the perspective of victims

n=21 372
Results

The most common forms of cyberbullying that children experience include harm in the form of humiliation, insulting and embarrassing (verbal aggression). These forms of aggression experienced over 33.44% of respondents as a victim.

An important indicator of the observed phenomenon is a communication platform on which cyberbullying takes place most often.

Graph 2: Cyberbullying according to communication platforms

n=7 809
Results

B) The originator of cyberbullying
(number of attackers in relation to individual acts of cyberbullying and platforms on which cyberbullying takes place).

Graph 3: Cyberbullying from the attackers’ perspective

- Verbal attacks: 10.68%
- Bothering by drop-calls: 5.65%
- Threats and intimidation of the child: 5.35%
- Identity theft: 2.41%
- Blackmailing: 2.47%
- Humiliation, embarrassing realized by spreading photographs: 5.59%
- Humiliation, embarrassing realized by spreading video: 2.76%
- Humiliation, embarrassing realized by spreading audio: 1.90%

n=19,360
Results

Attacks associated with humiliation, insulting and embarrassing of the victim are mostly conducted in an environment of social networks to attack another person, the social networks were used by 37.17% attackers, also private chats or instant messengers (21.02%) and SMS (18.49%) are used for the attacks.

Graph 4: Communication platform misused by attackers to cyberbullying

n=2131
Results

C) Persons involved in dealing with cyberbullying
(who the victim would contact in the situation when experiencing cyberbullying)

Graph 5: Who the victim would contact in the situation when experiencing cyberbullying
Results

Within this range we asked children about whom to confide in if they are victims of cyberbullying. Our attention was focused mainly on humiliation, insulting or verbal embarrassing – verbal assaults, humiliation, insulting, embarassing by using photographs; humiliation, insulting, embarassing by using video, humiliation, insulting, embarassing by using sound, threats or intimidation, abuse of the electronic account, bothering by drop-calls or by sending large numbers of messages; blackmailing.

D) Other related phenomena

(specific forms of cyberbullying realized as breaking account and subsequent identity theft, etc.). A surprising finding compared to previous years is still continuing trend associated with the attackers within cyberbullying and their "pleasure" to break other people's electronic account. Approximately one quarter of respondents (22.48 %) enrolled into electronic account without the owner’s permission and 10.36 % of them abused this account to get the owner into trouble.
Personal meetings of children with strangers

The research has also monitored the willingness of respondents to communicate with strangers with an unverified identity on the Internet and respondents’ reactions to the invitation for a personal meeting. More than half of the respondents (53.16%) communicate with strangers on the Internet. It should be pointed out that not every communication with strangers on the Internet is dangerous for the child and lead to the sexual abuse of a child. As shown by case histories, sexual attackers use ICT platform not only to establish contact with the child, but also for obtaining personal, intimate or otherwise discrediting materials which can then force the victim to a personal meeting (called cybergrooming).

If you were invited by your internet friend to personal meeting, would you go?

Graph 6: The willingness of respondents to go for a personal meeting

- **Yes**: 35.98%
- **No**: 64.02%

**n=9132**
Results

Have you ever been invited by your internet friend to a personal meeting?

Graph 7: Invitation of respondents by unknown person for a personal appointment.  
n=9,203

From the above Table 7 it is clear that 43.82% of respondents received an invitation to a personal meeting by unverified Internet user (the child has never met the person in the real world, their contact is virtual).
Results

Have you ever gone to a personal meeting with a stranger that you know only from the internet?

Graph 8: Respondents who had gone with an unknown person on a personal meeting.  

Very alarming finding is the high percentage of children (49.19%), which attended a personal meeting with an unknown person. Children knew this person only from the Internet and they had never met him/her in the real world before.

In relation to children’s personal meetings with strangers from the Internet they do not know personally, it was also observed if children consider such behavior to be risky or dangerous. 57.99% of respondents...
Results

considered communication with people on the Internet who do not know personally risky. 76,07 % of respondents considered personal meeting with people from the Internet they do not know personally to be dangerous. Despite this fact, 54,95 % of them would attend a personal meeting. 25,67 % of respondents were also asked by unverified Internet users not to tell anyone about their communication and what they talked about.

Interesting facts who the victim would contact if the Internet user requested a personal meeting were also revealed. 58,70 % of children would confide in friends or siblings who are younger than 18 years, 41,06 % of children would tell the parents about the meeting. The worrying thing is that teachers should be entrusted only by 3% of respondents, and even 15,01 % would not tell anyone about the meeting!
Sexting
As mentioned above, the research Risks of internet communication IV also dealt with sexting. We followed two basic forms of dissemination of sexting – the location of sexually oriented material on the Internet (e.g., the social network profile or digital storage databases of photos) and direct sending of sexual material to others (e.g., boyfriend, girlfriend, friends, partners, etc.).

Personal sexually suggestive materials (photos, videos) were placed in 2012 on the Internet by 7.23% of Czech children. 8.99% of the respondents sent the materials to another person (65.93% of girls, 34.07% of boys).

The most common motives for children trying sexting include boredom, trying to establish intimate contact with a person of the opposite sex; sexting is seen as a form of self-presentation and self-promotion. In some cases, sexting has been produced under the influence of other people (e.g., a group of girls shot sexually oriented materials, they got over the shame and sent the photos to other people).

Although 75.32% of the respondents perceive sexting to be risky and dangerous, 6.24% of respondents share in spite of the relatively high percentage of children that share or send sexually oriented materials (photos, videos), within our research we noted slightly declining trend in sexting, which is evident from the Graph 9 below.
Graph 9: Sharing and sending sexually oriented materials (photos, video) by Czech children.
References


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other high-risk sexual behaviors. Psychiatric Quarterly, 82, 10.1007/s11126-010-9165-8.


References


References


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About Centre

Centre for the Prevention of risky virtual communication (the Centre) focuses mainly on prevention of risk behaviours associated with the use of information and communication technologies (ICT) by children. It aims especially at cyber bullying, cyber grooming, cyber stalking, hoax and spam, sexting, methods of social engineering, the issue of sharing personal information through social networks and other hazardous communication techniques.

The Centre builds on the activities of the E-Bezpečí project (www.e-bezpeci.cz), which will continue to develop its activities as a central project of the Centre. The Centre implements the primary victim and situational prevention.

The Centre provides a complex system of continuous primary prevention at several levels:

A. Education
- Education for schools - series of preventive educational activities aimed at the above mentioned topics organized in cooperation with the Police of the Czech Republic.
- Lectures for the public.
- Lectures for students of pedagogic and non-pedagogic courses at PdF (+ selective seminars).
- Educational events for PIS (Police of the Czech Republic).
- Educational events for the social institutions and legal protection workers.
- Certified training under the Further Education of Pedagogical Workers (DVPP; PdF UP).

B. Preventive programs for school
- The comprehensive prevention programmes in the area of risk behaviour.
- Competitions for elementary and high school students focused on hazardous communication practices.
About Centre

C. Intervention
- Online counselling cooperating with organizations specializing in the issue (BKB, Police, PP counselling, etc.), which participates in the direct solution of individual cases. The Centre provides 5layer counselling (primary, legal, psychological, socio-legal and police).
- In the area of intervention the Centre cooperates with specialized departments of Pedagogical Faculty of Palacký University (more here) and with other expert and intervention institutions from the entire country.

D. Research
- Local research programmes for schools - researches aimed at analyzing the existence of dangerous phenomena in a particular school (victims, aggressors, prevention, and intervention).
- Area-wide surveys in the Czech Republic (regions, provinces, entire Czech Republic).

All activities of the Centre further develop E-Bezpečí Partner Programme for schools in practice. More than 80 schools from the entire country, who wish to pursue actively the issue of hazardous communication practices and integrate this system of prevention in their prevention plans, are involved in this programme. The purpose of the partnership program is a mutual sharing of experience, information on issues and creating and sharing educational materials.
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