

## JRC TECHNICAL REPORTS

# How children (10-18) experienced online risks during the Covid-19 lockdown - Spring 2020

*Key findings from  
surveying families  
in 11 European  
countries*

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## **Abstract**

Covid-19 pandemic impacted the lives of most children in Europe dramatically. The lockdown affecting most European countries in spring 2020 saw the sudden shift of most children's activities into the digital world. Since then, children's schooling, leisure time, social contacts, home life have mostly been conducted at home via digital media. Embracing new tools and services and spending several hours per day online changed dramatically daily schedules. The online world offers opportunities and new possibilities, substituting face-to-face interactions. However, it opens the door to well-known online risks (inappropriate content, overuse, cyberbullying, cyberhate, disinformation, misuse of personal data, cyber-risks, etc.)

This report provides a snapshot of how children across Europe perceived and experienced different known online risks during the Covid-19 spring lockdown in eleven countries, and which steps parents and children took to mitigate and cope with these risks. In particular, changes that occurred in children's online risk experiences during the Covid-lockdown, compared to the situation before the crisis, were identified.

## Acknowledgement

The project "Kids' Digital lives in Covid-19 Times" (KiDiCoTi) is conducted in collaboration with 26 research centres in 15 European countries, the research office of UNICEF, and it is coordinated by the Joint Research Centre. This report was made possible with many individuals contributing to it at different stages of the process. Indebted to their dedication and thankful for their knowledge, the authors highest gratitude for the finalisation of this report goes to the following team members:

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The data at the basis of the report have been collected via a survey implemented in Austria, France, Germany, Ireland, Italy, Norway, Portugal, Romania, Slovenia, Spain and Switzerland.

## Executive summary - Key Findings

This report presents the findings from a survey of children aged 10–18 from 11 countries in Europe. The data was collected between June and August 2020 from 6.195 children and 6.195 parents by national teams participating in the international research project ‘Kids’ Digital lives during Covid-19 times’ (KiDiCoTi) coordinated by the JRC.

Research questions and a common methodology based on a survey was developed collegially by the KiDiCoTi partners under JRC coordination, between March and June 2020. It is presented in more details in a dedicated section of this report.

The survey’s questionnaire addressed the following areas: digital technology use-related habits; use of digital technology for school purposes; parental worries regarding technology use; exposure to online risks such as cyberbullying and harmful content online; and positive aspects of digital media use for the family, such as the acquisition of digital skills.

This report focuses on the **changes in dynamics of encountering online risky situations that children (10-18 years old) from 11 countries experienced during the Covid-19 lockdown (spring 2020) and the reactions or steps taken by children or their parents in order to mitigate these online risky situations.**

We present here the key findings on the evolution of use of digital technology by children during Covid-19 lockdown in terms of **(1) Time spent online; (2) Online risky situations** at a general level and specifically regarding **screen overuse, cyberbullying, cyberhate, disinformation, misuses of personal data, cybersecurity;** and **(3) Parents and children’s reactions to mitigate online risks.**

Throughout the report, findings are presented according to the countries surveyed, and comparable across countries. We conclude on the important points raised by these new findings and their policy implications for children’s online opportunities and risks in Europe.

Important research gaps are also discussed.

### Time spent online

Over the 11 countries, **nearly one parent out of two worries more** about their children’s online time during the lockdown than before. At national level, the rates vary between 37% in Austria to 59% in Portugal and Ireland. At the same time nearly **half of the children felt an online overuse**, with a variability at national level from 38% declaring such a statement in Germany to 59% in Ireland and Romania.

Effectively, **children reported spending between 6 hours to 7.5 hours online a day** in weekdays during lockdown and that more than half of this time was dedicated to school activities.

### Excessive use

**Half of the children reported never having gone without eating or sleeping because of time spent on the internet. A quarter of them** declared experiencing these routine disruptions **more during the lockdown than before.** This rate varies at national level from 17% in Slovenia to 40 % in Romania.

### Children’s attempts to reduce internet use

When considering all 11 countries, the shares are balanced. Nearly one-third of children declared to have succeeded in trying to spend less time on the internet. Still, **the struggle did not change for another third and was even more difficult for more than one-third of children during lockdown** compared to the prior period. The highest rates of children struggling more in trying to spend less time on the internet during lockdown were found at national level in Portugal (45%), Romania and Ireland (43%).

## Online risks encountered by children during the Covid-19 lockdown

### Experiences with bothering/ upsetting situations online

Bothering/upsetting online experiences can include a wide range of issues, from frustrations over technical failures, to serious risks like sexual grooming from adults. Indicatively, nearly half of the surveyed children declared never been bothered or upset by something online. One quarter reported an increase of bothering/upsetting online experiences during the Covid-19 spring lockdown. At country level, this share spans from 14% in Slovenia to 28% in Ireland. These figures need to be considered carefully given the variety of issues they can relate to. Results focusing on cyberbullying, cyberhate, user-generated content, disinformation, personal data misuse and cybersecurity provide more precise indicators.

### Cyberbullying

Results show that **half (51%) of the children in the sample have never encountered cyberbullying situations**, meaning also that the other half declared having been cyberbullied at some point. At national level, this share is the highest in Italy (59%), Ireland (59%), Germany (58%) and Romania (57%) and the lowest in Slovenia (32%).

Over all countries, **among the children that have already been victim of cyberbullying, nearly half (44%) reported an increase of the phenomenon during the Covid-19 spring lockdown**. At national level, this share is the highest in Germany (51%), Italy (50%), Spain (50%) and Ireland (48%) and the lowest in Slovenia (24%). On the other hand, more than a fifth of the children (22%) of the international sample felt cyberbullying occurring less during the lockdown period compared to before. Notably, the highest decrease at national level shows in Slovenia (38%), well above its follower, Romania (29%).

### User-generated content related risks

**User-generated content risks – negative content** (e.g. inappropriate content, violence, drugs, self-harms) **created and published by users for**

**users, typically via social media – have been growing steadily since one of their first observances in 2010** by the EU Kids Online research. At that time, around one-quarter of children had experienced these types of risks (Livingstone et al., 2011). Results of this survey show these percentages increasing.

### Disinformation

**Three-quarter of children have reported encountering disinformation**. Norway is the country with the most children prone to denounce disinformation (only 12% saying they have never encountered information online that they suspect is untrue), whereas France is at the opposite pole (40% of children saying it never happened).

**The results also show an increase in self-assessed disinformation during the lockdown period for at least a third of the surveyed children**. At national level, an increase of disinformation experiences during the lockdown in spring 2020 was reported by children the most in Ireland (48%) and Portugal (45%), and the least in France (28%) and Germany (29%).

### Cyberhate

In all countries, the percentage of children who have ever been exposed to cyberhate messages (Figure 11) ranges between one-half, with 52% in Austria, to over two-thirds in Romania (71%); exceptions made for the French children, who reported this experience in 45%. **Four in ten children have never encountered hate messages; however, almost three in ten reported an increase in this risk during the spring lockdown 2020**, the larger percent being in Ireland (37%) and the smallest in France (22%).

### Exposure to violent or gory content

**At least half of the children surveyed reported to have seen gory or violent images in all countries** with the exception of France where only 42% of the respondents reported this experience. Children in Romania (67%) declared this experience the most.

### Exposure to self-harm practices

**The risk of exposure to self-hurting practices touches nearly half of the surveyed children.** The percentage of children who have ever been exposed to this risk is the highest in Romania (59%) followed by Germany (52%) and the lowest in Slovenia (31%) and France (36%).

**During the lockdown in spring 2020, this kind of experience did not increase for the majority of children already exposed. Still, close to a fifth of the sample experienced it more.** Specifically, children reported more exposures to gory or violent content during lockdown than before, the most in Ireland (25%), Italy (25%) and Romania (26%). The part of children who saw more self-harming content are the highest in Portugal (23%) and the lowest in Slovenia (7%) and Norway (10%).

### Personal data and cybersecurity risks

Using digital technologies inevitably leads to leaving all sorts of digital footprints, passively (user's web-browsing activity) or actively (information deliberately shared by users), which can expose citizens to privacy risk violations. **Over two-thirds of youngsters reported to have never experienced that somebody used their personal information in a way they did not like,** at the exception of Germany showing a lower share (57%). The highest percentage of children who declared never being the victim of personal data misuse is observed in Slovenia (88%) and Norway (84%).

The mappings are closely the same for reporting **the misuse of their personal password** and for reporting **the hostile or hurtful use of personal data** (e.g. images). **One-third of children across countries reported these negative experiences at some point.** Approximately one-tenth (13%) of all children reported to experience them more during the lockdown.

**Almost two-thirds of youngsters across countries reported their device never got virus or spyware, one-third reporting this experience.** More than one-tenth (14%) of children noted an increase in this kind of obstructive experience during lockdown.

### Reactions - attempts to mitigate online risk

#### Parental mediation practices

The vast majority of parents do talk to youngsters about what they do with digital technology, suggest ways to use internet safety (90% or more for all countries, except Norway where 86% of parents only reported to talk with their child about their use of digital technology). Most of them also (at least 85%) limit or forbid access to certain types of content (e.g violent, gore or sexual content). Parents are less numerous, showing more variance in between countries in using technical solutions such as parental controls or other technical means of blocking, filtering, keeping track of the websites or apps that their child uses (between two-thirds in Slovenia, Norway and Austria and more than nine out of ten in Ireland and Spain).

**Overall, on average, nearly half of parents (44%) reported having increased some active parental mediation during the lockdown in spring 2020.** Despite most parents reporting not having changed technical monitoring practices during the lockdown, one-third did it more than before.

#### Protecting Devices

**Parents (95% overall) are used to taking steps towards protecting devices more than their children (85% overall).**

Overall, **one-third of users in the surveyed families took additional steps to protect their devices during the lockdown.**

In all countries, the percentage of parents (34% in average) who enacted more protection of digital devices during the lockdown was higher than the percentage of children (28% in average).

Finally, schools, to some extent, participated in protecting technical devices of children. **One-fifth to one-third of schools have been reported providing digital security packages to protect devices from virus and other threats during lockdown in spring 2020**

# 1 About this report and the study

Covid-19 was declared a global pandemic by the World Health Organisation on March 11 2020<sup>1</sup>, followed rapidly by drastic lockdown measures of containment in most European countries. As a reaction, digital transformation accelerated unprecedentedly in all dimensions of society. On Apr. 7 2020, the European Commissioner Margrethe Vestager, the EC program leader for the digital transformation (A Europe Fit for the Digital Age) highlighted that *'Digital learning, digital working, digital socialising, everything, and obviously e-commerce has increased substantially.'*<sup>2</sup> She further pointed out that *'amid this crisis, we have had a full-scale crash test of everything digital'*. More than ever, probably, economic growth and human wellbeing depend upon integrating digital technologies<sup>3</sup>.

In days of unprecedented crisis, most children in Europe experienced home confinement for weeks for the first time in spring 2020. Schooling, leisure time, social contacts, took place at home and via digital media for most, following the increasing curves of digitalisation of our lives. However, previous research<sup>4</sup> noted that *'Increased time spent online should increase the likelihood of negative experiences - and also opportunities'*. One can expect that the more children spend online, the situation opens to new opportunities, but also to more experiences with online risk such as encountering inappropriate content, overuse, commercial pressure, unwanted contact, cyberbullying, physical and mental health impact, etc. In March 2020, the JRC initiated a study<sup>5</sup> (KiDiCoTi) on children and families' digital experiences during the Covid-19 lockdown in fifteen European countries. The goal was to understand how children and parents engaged with digital technology while staying at home and how this may have impacted children's online safety and overall family wellbeing.

This report presents the findings on online risk experiences from this study. The findings are based on data collected in a survey with children aged 10–18 from 11 countries in Europe. The data was collected between June and August 2020 from 6.192 children and 6.192 parents by national teams participating in the international research project "Kids' Digital lives during Covid-19 times' (KiDiCoTi) coordinated by the JRC.

Research questions and a common methodology based on a survey was developed collegially by the KiDiCoTi partners under JRC coordination, between March and June 2020. It is presented in more details in a dedicated section of this report. The survey's questionnaire addressed the following areas: digital technology use-related habits; use of digital technology for school purposes; parental worries regarding technology use; exposure to online risks such as cyberbullying and harmful content online; and positive aspects of digital media use for the family, such as the acquisition of digital skills.

This report focuses on the changes in dynamics of encountering online risky situations that children (10-18 years old) from 11 countries experienced during the Covid-19 lockdown (spring 2020) and the reactions or steps taken by children or their parents in order to mitigate these online risky situations.

We present here the findings on the evolution of use of digital technology by children during Covid-19 lockdown in terms of: 1. Time spent online; 2. Online risky situations at a general

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<sup>1</sup> <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

<sup>2</sup> <https://www.euractiv.com/section/digital/news/vestager-its-not-a-choice-between-fighting-the-virus-and-protecting-privacy/>

<sup>3</sup> OECD, 'OECD Digital Economy Outlook 2020'. Accessed: Dec. 21, 2020. [Online]. Available: <http://www.oecd.org/digital/oecd-digital-economy-outlook-2020-bb167041en.htm>.

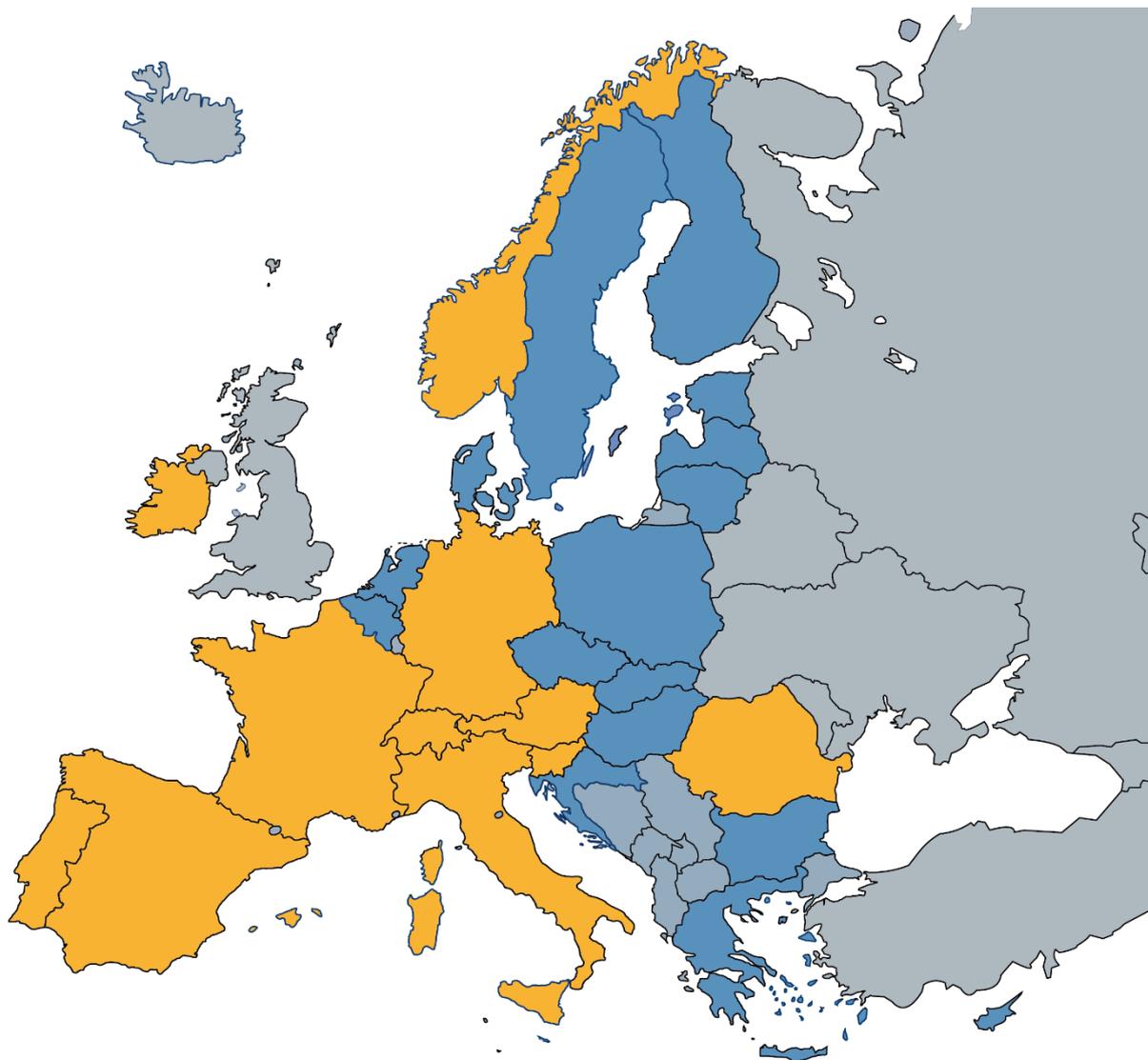
<sup>4</sup> Uwe Hasebrink (2019), Young European's online environments: a typology of user in Eds Livingstone S., Haddon L & Gorzig A, *Children, Risk and Safety on the Internet: Research and Policy Challenges in comparative perspective*, Policy Press.

<sup>5</sup> <https://ec.europa.eu/jrc/en/science-update/kidicoti-kids-digital-lives-covid-19-times>

level and specifically regarding screen overuse, cyberbullying, cyberhate, disinformation, misuses of personal data, cybersecurity; and 3. Parents and children's reactions to mitigate online risks.

#### COUNTRIES PARTICIPATING IN THE SURVEY

Austria, France, Germany, Ireland, Italy, Norway, Portugal, Romania, Slovenia, Spain and Switzerland



### 1.1 Methodology

The present report is based on the results of the project study "Kids' Digital lives in Covid-19 Times" (KiDiCoTi), conducted by the European Commission's Joint Research Centre of the European Commission in collaboration with UNICEF and European research centres in each participating country (see the Acknowledgement section for more details). The aim of this study is to understand how children, youths and their parents engage with digital technology and to identify potential benefits and risks associated with their (online) interactions with digital technology during the Covid-19 lockdown spring 2020, compared to the situation before the lockdown.

## 1.2 Questionnaire design

Children and parents participating in the survey filled out an online questionnaire that was provided via online panels in participating countries.

The questionnaire was divided into two parts: the parental and children's part. In both parts, the included questions addressed the following areas: digital technology use-related habits; use of digital technology for school purposes; parental worries regarding technology use; exposure to online risks such as cyberbullying and harmful content online; and positive aspects of digital media use for the family, such as the acquisition of digital skills. Parents and children were asked to answer separately. Still parents could have been present while children were filling in the questionnaire.

A majority of questions and scales, especially, from practices, activities and risks areas for parental and children's part, were ad verbatim uses and/or adaptations of questions from the 2018 EU Kids Online study<sup>6</sup>. Some of the questions were designed by groups of cooperating researchers. The well-being scales were previously used and largely tested to measure children's wellbeing, provided by UNICEF research unit. For a description of the sample and data collection procedure, please see Annex I of this report.

## 1.3 Ethical consideration

Data collection followed ethical guidelines and procedures for research set forward by the Joint Research Centre as well as national ethical conditions. In most cases, the survey instrument was reviewed by national universities' ethical committees. Informed consent was obtained from parents and children prior to the beginning of the survey, and both children and parents were informed that they could withdraw from the survey at any time and without any negative consequences should they wish to do so.

In addition, an information sheet with all relevant information pertaining to the handling of personal information, anonymity, confidentiality and data security information were provided in line with data protection national and European legislation, to which parents agreed in two steps (for themselves and giving permission for their children to cooperate).

## 1.4 How to read the findings and graphs in this report

The core sections of the report are presenting the results of the study mainly via bar graphs. In the graphs, just like the example below, each bar represents the total sample of children interviewed in each country. This bar is segmented in four sections, colour-coded respectively in green, yellow, orange and red, as shown in the example Figure below.

- Green colour shows the percentage of children that have never experienced the risk (e.g., Example Figure "I have been bothered or upset by something online" - Austria 55%)
- Yellow shows the percentage of children that have experienced the risk less or much less than before the lockdown (e.g., Example Figure "I have been bothered or upset by something online" - Austria 9%)
- Orange shows the percentage of children that have experienced the risk the same as before the lockdown (e.g., Example Figure "I have been bothered or upset by something online" - Austria 20%)
- Red shows the percentage of children that have experienced the risk more or much more than before the lockdown (e.g., Example Figure "I have been bothered or upset by something online" - Austria 16%)

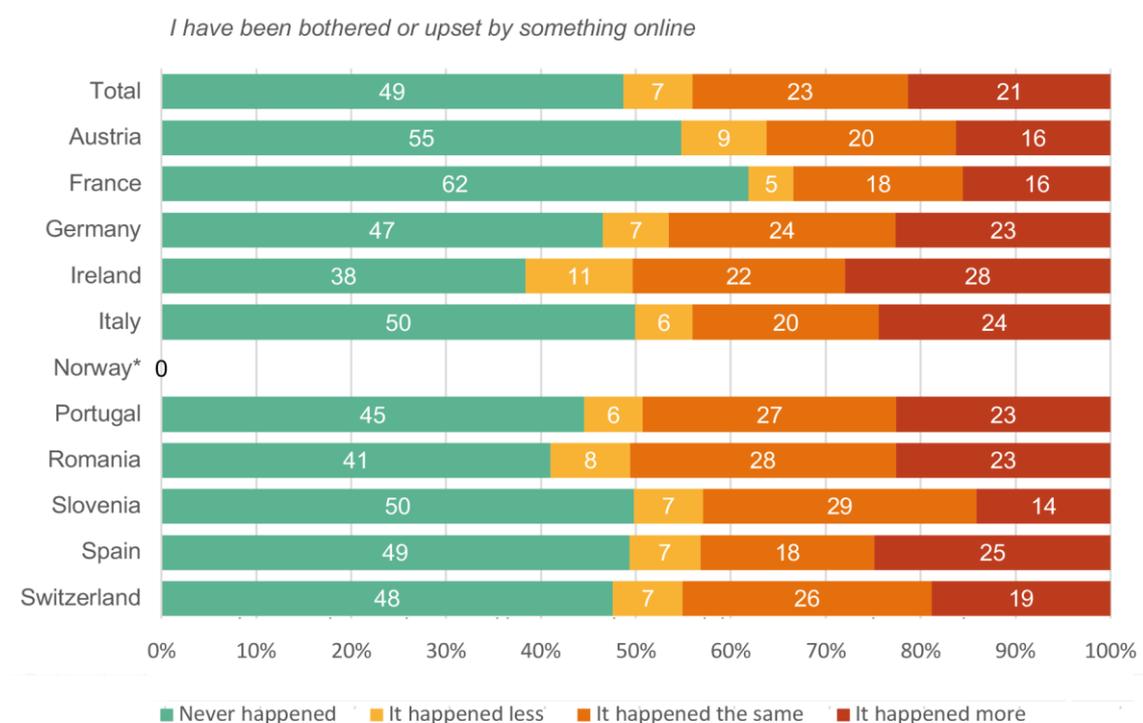
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<sup>6</sup> The EUKIDS questionnaire 2018 was developed in collaboration with the international team led by Professor Elisabeth Staksrud (University of Oslo in Norway), together with Kjartan Ólafsson (University of Akureyri, Iceland and University of Oslo, Norway), and Professor David Smahel (Masaryk University, Czech Republic). For more information, see [www.eukidsonline.net](http://www.eukidsonline.net)

- Within each bar, the reader encounters percentages leading to the sum of warm colours (yellow, orange and red) indicating the percentage of children that have ever experienced the risk. Each colour is representing the relative change during the Covid-19 spring lockdown (e.g., Example Figure "I have been bothered or upset by something online" - Austria 45% [9%+20%+16%])
- Rounded number: Due to results being rounded to the nearest integers (0.0-0.4 being rounded down and 0.5-0.9 being rounded up) automatically by Excel when preparing the graphs, there might be cases with 101% sum of all bars (e.g. 12.58 is rounded to 13%, 2,59--> 4%, 30,56--> 31% and 53,25-->53%) and with 99% sum of all bars (e.g., 38,39-->38%, 11,27 --> 11%, 22,34--> 22% and 27,98 --> 28%). This 1%, either being added or missing, cannot be assigned to any specific category but is rather distributed across all bars due to rounding procedure as the examples above suggest.
- \* In this precise example, Norway does not show any data as, due to an error at survey time, no data have been collected in Norway for this question.

### Example of Figure

Figure 7 - Encountering general bothering situation online and changes that occurred in it during the lockdown period (spring, 2020), by country



Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.1: "I have been bothered or upset by something online (e.g., made me feel upset, uncomfortable, scared, or that I shouldn't have seen it)."

## 2 Framing the findings

In this report we focus on children's experiences of various online risks during the Covid-lockdown in Europe spring 2020 and children's general perceived safety and well-being online. Online risk is a substantial field of research, and there is a complex interrelationship between online risks and online opportunities. We also know how online risk experiences might reinforce each other, making some children more vulnerable to harm than others. While this report will not go into depth on online risk and how this is distributed across age, gender, cultural settings, it is important to emphasise that **experience with risk does not necessarily mean harm**. Risk experiences can also be something that utilises coping strategies and strengthens resilience.

With this in mind, this report provides a snapshot of how children across Europe perceived and experienced different known online risks during the spring Covid-19 lockdown, and which steps parents and children themselves took to mitigate and cope with these risks. **The main aim of the report is to identify potential changes that occurred in children's online risk experiences during the Covid-lockdown, compared to the situation before Covid.**

### 2.1 Children's general feelings of safety: at home, at school, online

In this section we describe how children perceive their home, school and online environments with regards to feeling safe. Assessing children's well-being, online and offline, general feelings of safety in the contexts of their everyday lives is an important factor.

We therefore asked the children to evaluate, how true or not true for them the following statements are: "I feel safe at home.", "I feel safe at school." And "I feel safe online."

Looking at Figure 1, we can notice a slightly linear trend, with the highest percentage of children reporting to feel safe at home. This percentage lowers for the school environment and it goes further down for the online environment.

Overall, children reported to feel safest in Norway, and the least safe in Portugal and France. Within countries, the highest difference in feeling safe between environments is noticed in France, Portugal, Romania and Slovenia, whilst the smallest difference is observed in Norway and Germany.

The graph below shows that in all countries, all children feel safest at home as opposed to feeling safe in schools and online. The percentage of those, who do not feel safe at home, is below 5% in all countries but Switzerland where 9% of children reported not feeling safe at home. Approximately every tenth child reports to partially feel safe at home. The exception to this are Austrian, Irish, Norwegian and Slovenian children, where the percentage of those partially feeling safe is lower, ranging from 6-3% (see Figure 1 below). The percentage of children who reported to feel safe at home ranges from 80% in Switzerland to 96% in Slovenia.

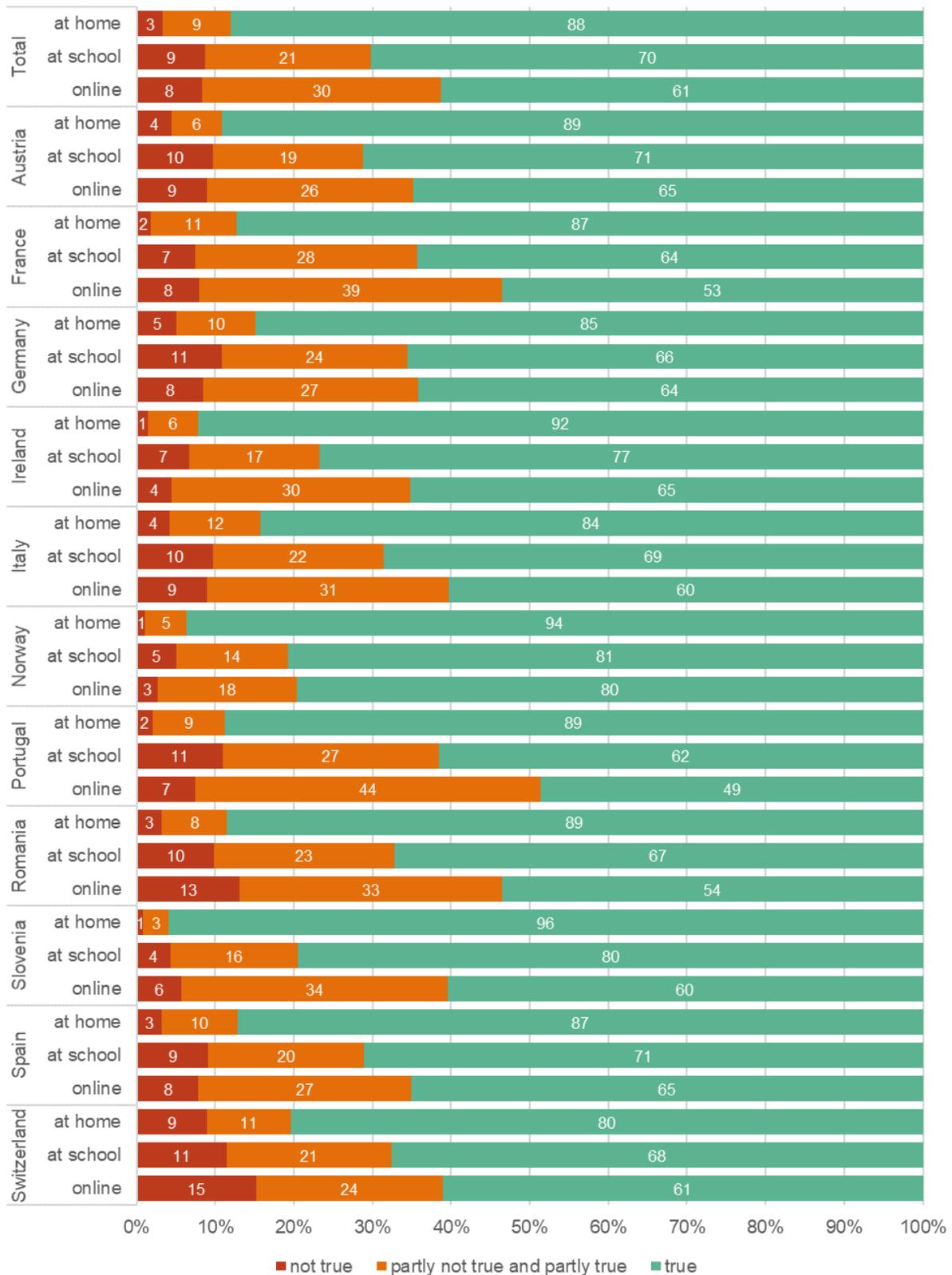
In general, approximately one in ten children reported not to feel safe at school. This percentage is slightly lower in France and Ireland (7%) and halving in Norway (5%) and Slovenia (4%). The percentage of children who partially feel safe at school raises considerably, from approximately one fifth to over one fourth in the majority of countries. The exception is Irish (17%), Slovenian (16%) and Norwegian (14%) children, where the share of those who partially feel safe at school is lower. The percentage of children who reported to feel safe in school ranges from 62% in Portugal to 80% in Slovenia.

The percentage of children who reported not to feel safe online ranges from 3% (in Norway) to 15% (in Switzerland). Further, the percentage of those who partially feel safe online ranges between 14% (in Norway) to 44% (in Portugal). Having an overall view, Figure 1 shows us how the percentage of those who do not feel safe online or partially feel safe online increases even more in comparison to those who do not feel safe or partially feel safe at home and in schools. However, having a closer look, the percentage of those who do not feel safe online is in some countries lower as opposed to those who do not feel safe in schools (e.g. Austria, Germany, Ireland, Italy, Norway, Portugal and Spain). Also, the percentage of children who partially feel safe online is increased in all countries. The percentage of children, who reported to feel safe online, ranges between 49% in Portugal to 80% in Norway.

When comparing our results to the latest EU Kids Online findings (Šmahel et al, 2020), we can notice a similarity in patterns of feeling safe online. In EU Kids Online study, similar high shares of children reported to always or mostly feel safe online and only 2% to 16% of children reported never feeling safe online.

Figure 1 - Children's general feelings of safety at home, at school and online

How much do children feel safe at home, at school, online



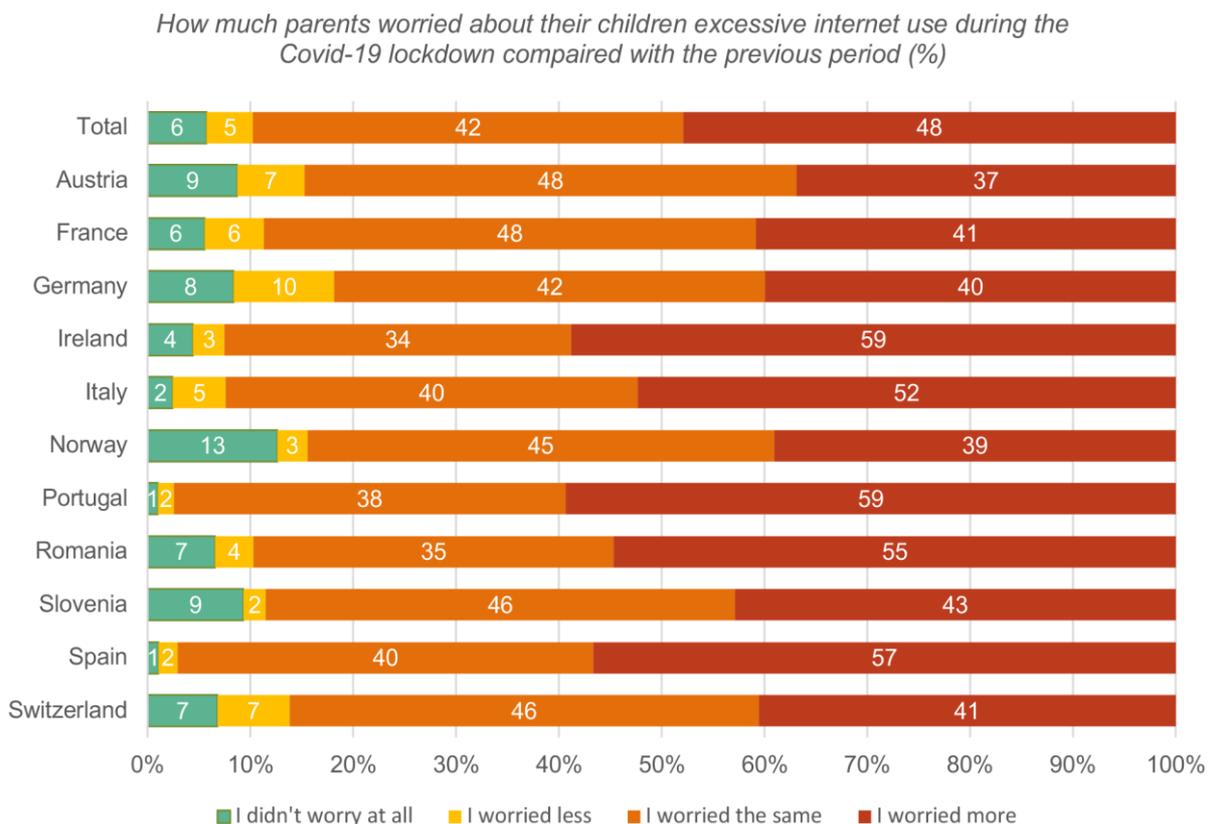
QC19: Below, there are some statements listed about you. Please read the statements and indicate how true or not true these statements are of you. QC19.8; 9 and 10 'I feel safe at school', 'I feel safe online' and 'I feel safe at home'

### 3 Time spent online

Previous studies about children and online risk experience have emphasised the link between time spent online, risk experienced, opportunities and digital skills (see for instance de Haan, 2009; Hasebrink, Livingstone, Haddon, & Ólafsson, 2009; Livingstone, Mascheroni, & Staksrud, 2015; Livingstone et al., 2017; Staksrud & Milosevic, 2017; Livingstone et al., 2018: *'Increased time spent online should increase the likelihood of negative experiences - and also opportunities'* (Hasebrink, 2012). One can therefore expect that the more time children spend online, the more online risks and opportunities they experience. Moreover, online experiences can be perceived as good or bad, depending on the context, situation and the people involved. Experiencing risk online does not necessarily mean harm. What is important is how a child is able to cope with bothering situations online.

How much time children spend online is one of the major concerns for parents (Staksrud & Ólafsson, 2020). During the Covid-lockdown children's need for digital use for leisure and socialisation, combined with the potential increased use of digital devices for schoolwork might have added to the pressure and worry of parents regarding time spent online by their children. The results of the study confirm this tendency as Figure 2 shows.

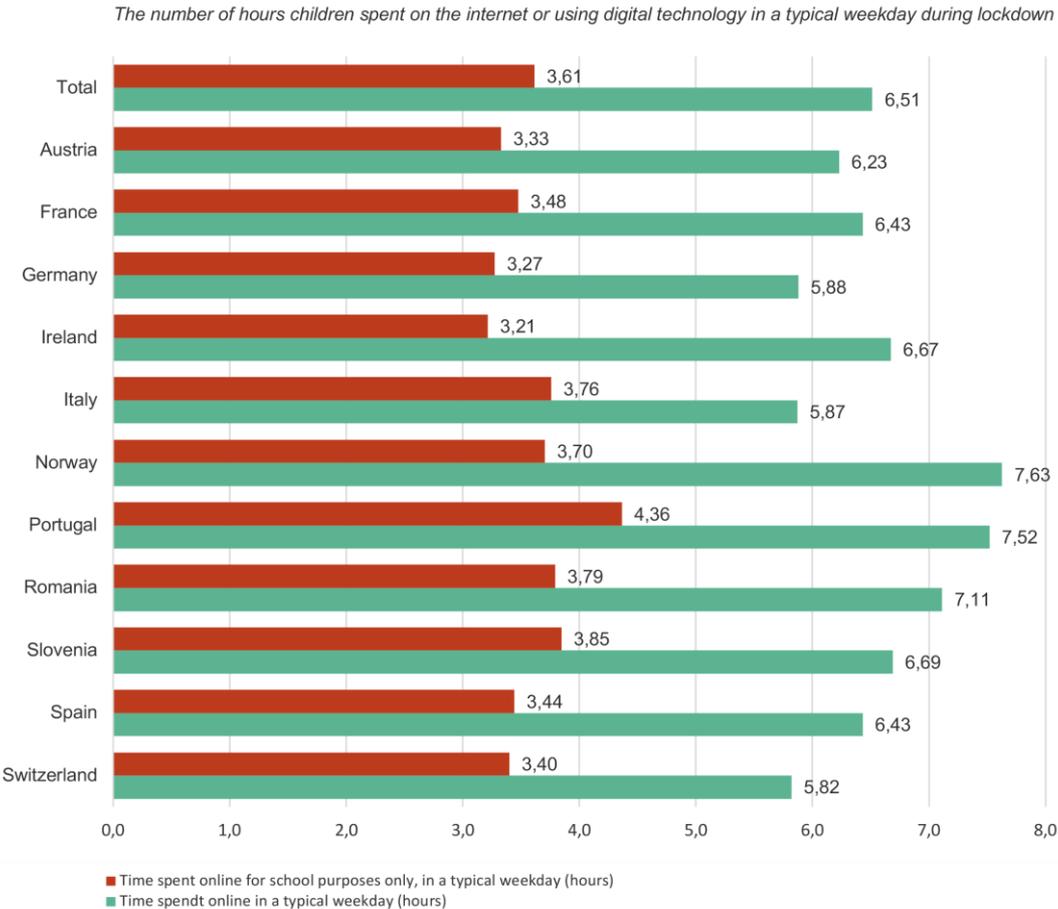
*Figure 2 - Parents worries about excessive internet use by their children during the lockdown in spring 2020 compared to the previous period*



*Question: Q10. Below, you'll find some issues related to your child's digital technology use. Compared to the period before lockdown, please evaluate how much did you worry – if at all – about these issues during lockdown? Q10.1. "Excessive use (e.g. spending too much time playing games, watching videos, using social networks)"*

The Figure 3 below shows the time children and youth have spent using digital technologies in general and for school activities during the spring Covid-19 lockdown. The average hours range from 7.6 in Norway to 5.8 hours a day in Switzerland for general use and from 4.4 in Portugal to 3.2 hours a day in Ireland for school activities. For comparison, in 2018 the average estimated time spent online in Norway was 3.65 hours a day according to EU Kids Online study (Šmahel et al, 2020). The European average in 2018 was estimated to be 2.7 hours a day, which is less than the average time spent online for school activities only during the lockdown period in spring 2020.

Figure 3 - The number of hours children reported spending on the internet or using digital technology in total and for school purposes



### 3.1 Excessive use

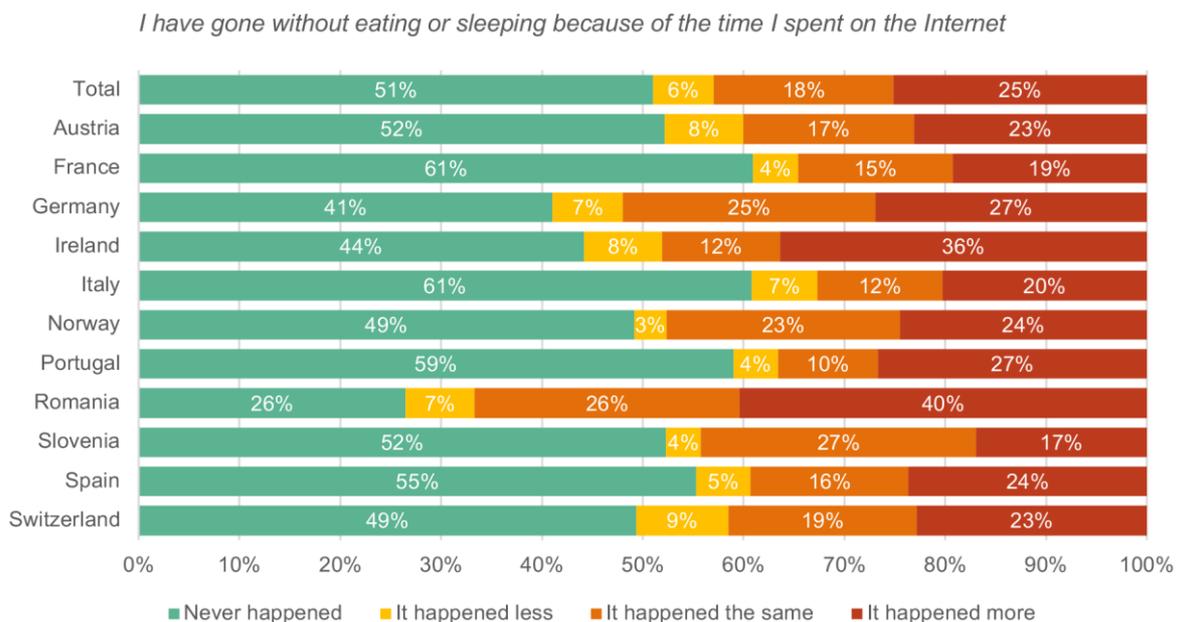
Excessive internet use has been a continuous area of the public (parents, caretakers, teachers) and experts' debates. As noted in the EU Kids Online 2019 comparative report from 19 countries (Šmahel et al, 2020: 77), the time spent online is not the only indicator of whether someone is an excessive user. Rather, it is important to look how the internet use affects the user's life, for better or for worse (I.e., in opportunities and in risks). Moreover, who appreciates the amount of internet use as being excessive (or not) is important. Adults might for instance be more prone to overstate their appreciation compared to children's actual use.

During the Covid-19 spring lockdown many aspects of children's lives were moved online (i.e., remote schooling, entertainment, socializing, communication) and the amount of screen time has been expected to grow considerably. In line with our child-centered approach, the KiDiCoTi project asked the children themselves to find out if they experienced their internet usage as excessive, here operationalised as "going without eating or sleeping because of the time spent online".

Of the children from the 11 countries participating in this survey, Figure 4 shows half (51%) of them reported never having gone without eating or sleeping because of the time spent on the internet, before and during lockdown likewise. The percentage of those who never went through this kind of experience is the lowest in Romania (26%) and the highest in France (61%), Italy (61%) followed by Portugal (59%).

Of those children who reported having gone without eating or sleeping because of time spent on the internet more during than before the lockdown, the largest group was found in Romania (40%), followed by Ireland (36%). The smallest groups were found in Slovenia (17%) and France (19%) and Italy (20%).

Figure 4 - Example of excessive use and changes that occurred in it during the lockdown period (spring, 2020), by country – going without eating or sleeping because of time spent on the internet.



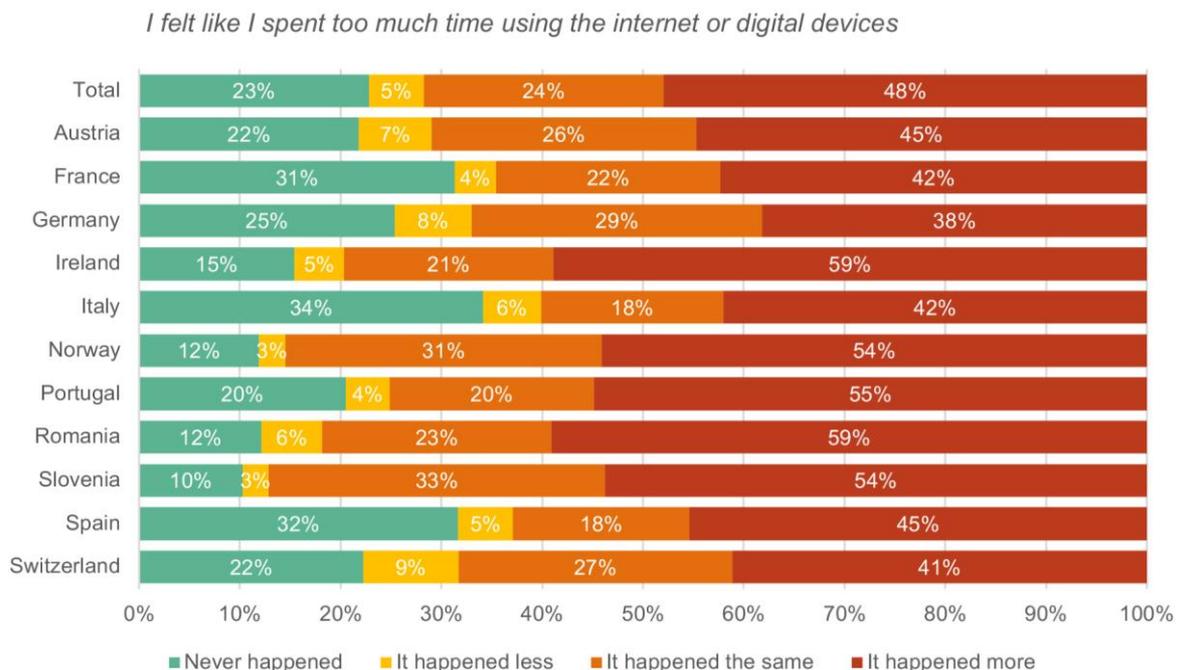
Question: QC8. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC8.1. "I have gone without eating or sleeping because of the time I spent on the internet."

### 3.2 Children's attempts to reduce time spent online

In the previous section on excessive use, we just reported children's evaluation of neglecting eating or sleeping because of the internet (QC.8.1. "I have gone without eating or sleeping because of the internet"). Now, let us have a look at how they reported their perception of spending too much time on the internet and on their attempts to reduce the excessive internet use during the Covid-19 spring lockdown.

Figure 5 shows that the percentage of children who never felt they had spent too much time using the internet or digital devices ranges between 10% and 34%. We observe the lowest rates in Slovenia (10%), Norway (12%) and Romania (12%), whilst the highest percentages of children who never felt spending too much time on the internet or digital devices in are reported in Italy (34%), Spain (32%) and France (31%). During the lockdown, 38% to 59% of children reported an increase of this perception. The highest shares are registered in Ireland (59%) and Romania (59%), followed by Portugal (55%), Norway (54%) and Slovenia (54%). The lowest rates of children acknowledging an increase in that overuse during the lockdown are reported in Germany (38%), Switzerland (41%), France (42%) and Italy (42%).

Figure 5 - Children's feelings of spending too much time on digital devices during the lockdown (spring, 2020), by country



Question: QC8. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC8.3: "I felt like I spent too much time using the internet or digital devices."

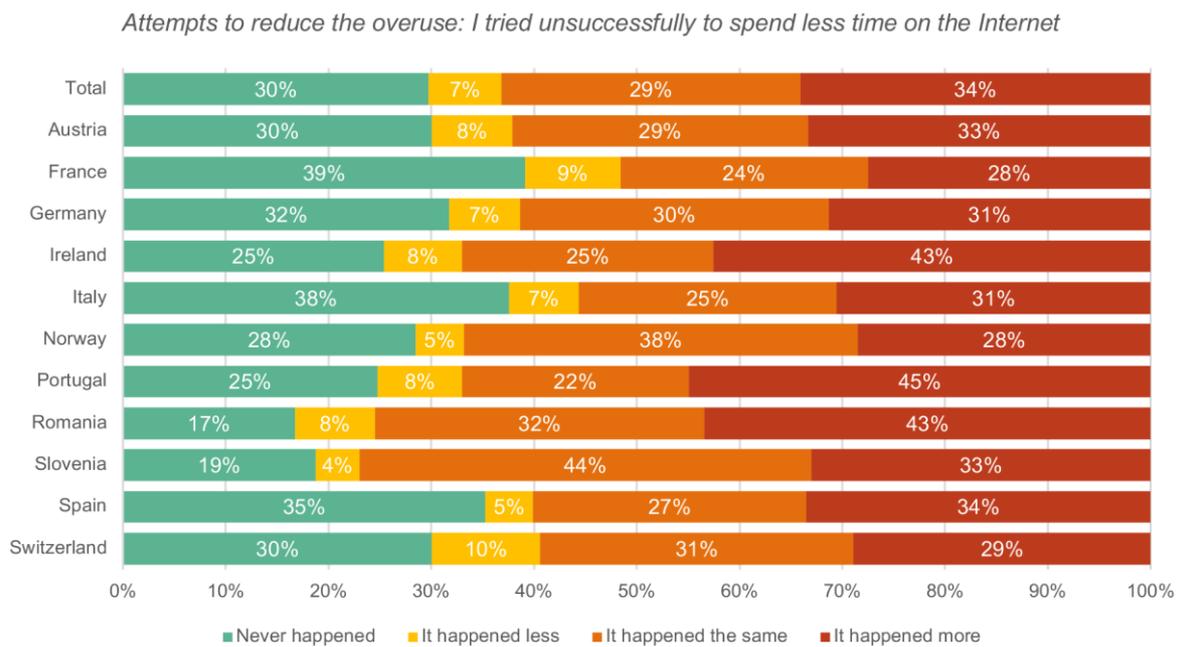
Further, we asked children about their attempts to reduce their time spent online during the Covid-19 spring lockdown (Figure 6). The question was linked to the following statement, "I tried unsuccessfully to spend less time on the internet". Across countries, 17% to 40% of children declared that this experience never happened to them. This share is the lowest in Romania (17%) and Slovenia (19%) and the highest in France (39%) and Italy (38%).

During the lockdown for 22% (in Portugal) to 38% (in Norway) of children, their attempts to reduced time spent on their Internet were unsatisfying at the same during lockdown as before (orange bars). However, others struggled even more (red bars), with the smallest

rates shown in Norway (28%), France (28%) and Switzerland (29%) and the highest in Portugal (45%), Ireland (43%) and Romania (43%).

Our findings indicate that at least one-third of the children were not successful in spending less time on the internet during the lockdown when they wanted to do so. This could be because of an increasing demand for screen-time in the period, but other explanations may also be possible. Overall countries, 10% of them to the maximum have reported having improved this behaviour.

Figure 6 - Children's attempts to reduce time spent on the internet use during the lockdown (spring, 2020), by country



Question: QC8. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC8.2: "I tried unsuccessfully to spend less time on the internet".

# 4 Online risks encountered by children during the Covid-19 lockdown

For most children, spending time online is mostly a pleasant experience. Social interaction with other people – such as peers – is an important element of children’s digital engagements. This has also been confirmed in previous studies. In the EU Kids Online survey from 19 countries, most children reported to always (28%) or often (37%) feeling safe online, while 10% reported never feeling safe online (Šmahel et al, 2020). The same survey found how between 3 % (Norway) and 44% (Spain) of the children never see people online as kind and helpful.

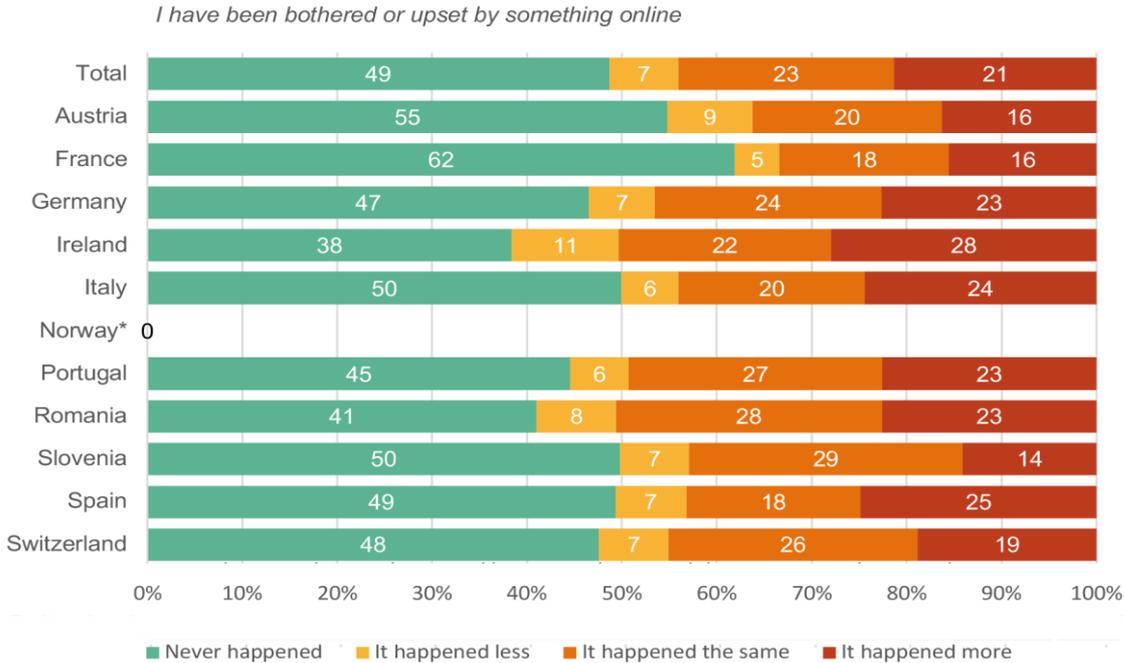
During lockdown, schooling, leisure time, and social contacts have taken place at home and via digital media for most. We therefore wanted to know if negative experiences online in general were perceived as more or less frequent, or the same, during the lockdown, as it was before.

## 4.1 Experiences with bothering and upsetting situations online

As shown in Figure 7, the percentage of children who have never been bothered or upset with something online across the 11 surveyed countries is 46%. There are some variations across countries. Notably, a vast majority of Irish (38%) children reported to have been bothered or upset by something online the same or more during the lockdown period, while only 11% said this happened less than before. In Ireland (61%) and Romania (59%), nearly two-thirds of children reported this experience. The smallest percentage reporting having this experience was observed in France (38%).

During the COVID -19 spring lockdown, the percentage of those to whom this happened at the same rate as before varied from 18% in France and Spain, to almost one-third in Slovenia (29%) and Romania (28%). However, there was some growth observed as well. The percentage of children who were bothered or upset online more or much more than before the Covid-19 spring lockdown was the highest in Ireland (38%) and the smallest in Austria (16%), France (16%) and Slovenia (14%). In all other countries, one-fifth to one-third of the children experienced this more or much more during lockdown than before.

Figure 7 - Encountering general bothering situation online and changes that occurred in it during the lockdown period (spring, 2020), by country



*Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.1: "I have been bothered or upset by something online (e.g., made me feel upset, uncomfortable, scared, or that I shouldn't have seen it)."*

Importantly, this general question does not say anything about what situation(s) the child is thinking about when answering "yes" to this question. "Bothered" is a term that can include a wide range of issues, from frustrations over technical failures and bad internet connection, to serious risks like sexual grooming from adults. In our survey, the question was primarily asking about content-related experiences. Previous research has shown that such content related issues can include everything from violent and sexual material, bullying, harassment and hate speech, but also – news related material (see for instance Livingstone, Kirwil, Ponte, & Staksrud, 2014).

To understand more about the specific risk experiences that might have bothered children online, and how this might have changed during the Covid-19 lockdown, the rest of this report will focus on different known risks – such as experiences with cyberbullying and cyberhate, excessive internet use, disinformation and personal data misuse and risks related to potential harmful user generated content. Finally, we will present some findings on parental mediation practices and reactions.

## **4.2 Cyberbullying**

Cyberbullying is one of the risks that causes great concern. We know from previous research that cyberbullying often leads to harm, and even to long-term harm (see for instance Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Erdur-Baker, 2009; Goerzig, Milosevic, & Staksrud, 2017; Görzig, 2014a, 2014b; Görzig & Ólafsson, 2012; Hinduja & Patchin, 2010; Hinduja & Patchin, 2008; Perren & Gutzwiller-Helfenfinger, 2012; Ybarra, Boyd, Korchmaros, & Oppenheim, 2012). In a situation where society is in lockdown, face-to-face social interactions are limited. Therefore, one would expect that peer interactions (communication with people about one's same age) primarily take place online. For most young people, online interactions are a welcome experience that enables friendships and positive social exchanges. But for some, such interactions can result in bullying and hurtful experiences. We thus wanted to know whether children and adolescents' cyberbullying experiences – both as victims and perpetrators of cyberbullying – changed during the lockdown period.

Cyberbullying – and bullying - research is a massive field, where the definitions and measurements of (cyber)bullying are somewhat contested (Kofoed & Staksrud, 2019; Smith et al., 2013; Ybarra et al., 2012). In this survey children were asked about four situations that measure cyberbullying: (1) "Nasty or hurtful messages were sent to me", (2) "Nasty or hurtful messages about me were passed around or posted where others could see", (3) "I was left out or excluded from a group or activity on the internet" and (4) "I was threatened on the internet". These measures are also based on the EU Kids Online measurement of cyberbullying experiences (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

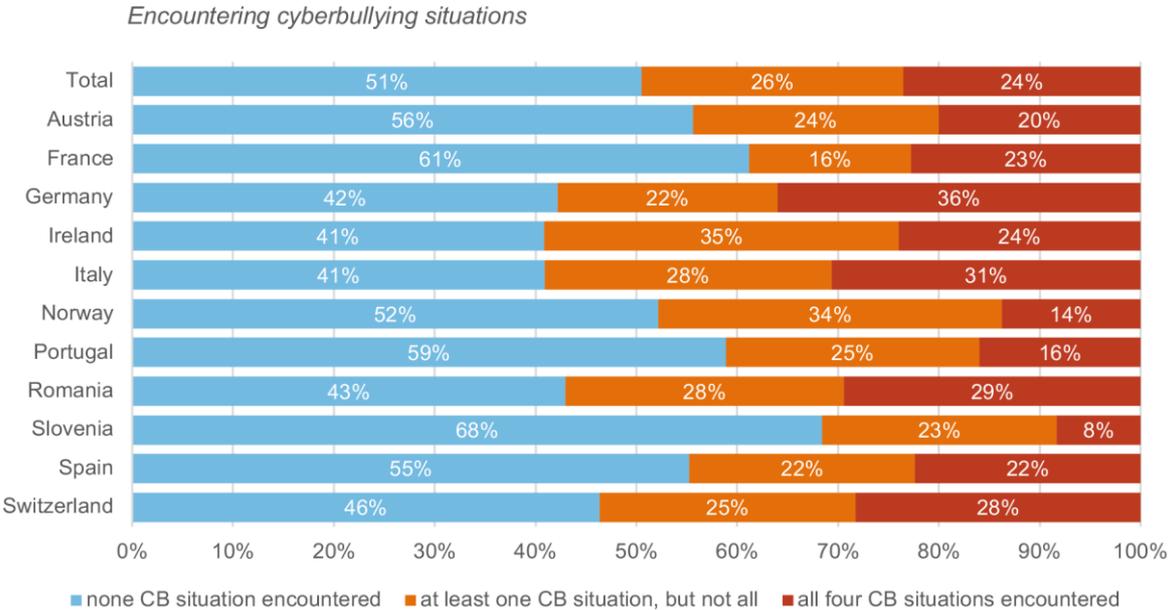
Please note that our questions do not measure how often this happens in terms of repetitiveness. Consequently, we do not separate between sporadic acts of aggression, and systematic and extensive cyberbullying.

### 4.2.1 Being a victim of cyberbullying

Figure 8 shows the percentage of children who have ever experienced situations of cyberbullying as victims that in our survey were made explicit with the following situations: (1) "Nasty or hurtful messages were sent to me", (2) "Nasty or hurtful messages about me were passed around or posted where others could see", (3) "I was left out or excluded from a group or activity on the internet" and (4) "I was threatened on the internet". Specifically, it shows the percentages of those who have encountered none of these situations (blue part of the bars), those who encountered some situations (orange part of the bars) and those who encountered all situations that they had been asked about (red part of the bars).

Results show that half (51%) of the total children in the sample have never encountered cyberbullying situations, meaning also that the other half has been a victim of at least one of the four cyberbullying situations monitored by the survey. Moreover, a quarter of children reported to have encountered all four situations. The country with the highest share of children who have never been a victim of cyberbullying experiences is Slovenia (68%), followed by France (61%) and Portugal (59%). In Spain, Austria, and Norway over half of children reported to experience none of cyberbullying situations insofar. In Germany, Ireland and Italy, nearly two-thirds of children reported encountering at least one of the listed situations. Countries, in which the highest percentage of children reported to have encountered all four cyberbullying situations are Germany with 36%, Italy with 31%, Romania with 29% and Switzerland with 28% of children. The lowest percentage was reported in Slovenia (8%), followed by Norway (14%) and Portugal (16%). For the rest of the countries the encounters of all cyberbullying situations ranged between one in five (Spain, Austria) and one in four children (Ireland and France).

Figure 8 - Children who have been victims of cyberbullying situations, by country



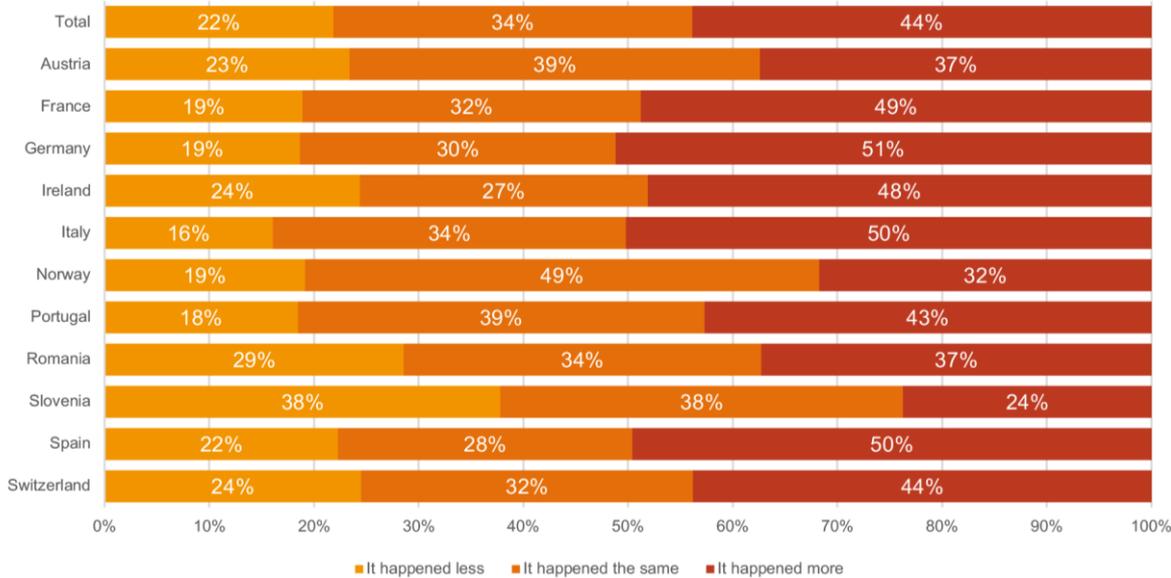
Percentage of children who have ever experienced situations of cyberbullying as victims that in our survey were made explicit with the following situations: (1) QC6.2 "Nasty or hurtful messages were sent to me", (2) QC6.3 "Nasty or hurtful messages about me were passed around or posted where others could see", (3) QC6.4 "I was left out or excluded from a group or activity on the internet" and (4) QC6.5 "I was threatened on the internet". Note: this graph presents the general picture with those who have encountered or not the cyberbully situations; the graph does not present the changes during the lockdown.

Let us have a look at the percentages of children who have ever been victims of cyberbullying (have experienced at least one of the measured cyberbullying situations) and how their experience changed during the Covid-19 spring lockdown.

Figure 9 shows that in most countries, more children said that incidents of cyberbullying happened more or much more than before (red part of the bars) in comparison to the share of children who reported them to happen at the same rate as before (orange part of the bars). Three countries show less marked tendency: Norway, where nearly half (49% of the bullied children, therefore 24% of all Norwegian children of the sample) reported that cyberbullying events happened at the same rate during lockdown as before and one-third (32% of bullied children, 15% of all children) that they happened more than before; in Slovenia (38% of bullied children, 12% of all children, reported that they happened the same and 24% of bullied children, 8% of all children, that it happened more than before lockdown) and Austria (39% of bullied children, 18% of all children, reported that they happened the same and 37% of bullied children, 16% of all children, that they happened more than before the lockdown). In Germany, Italy, Spain, France, and Ireland, approximately half of children who had ever experienced at least one form of cyberbullying reported to experience it more than before. This concerns around 30% of all children surveyed in all countries. In Switzerland, 44% of bullied children, 24% of all children, reported to experience cyberbullying more during lockdown than before.

It is important to emphasise that a part of children has experienced less cyberbullying in all countries (22% of bullied children, 11% of all children) during lockdown in spring 2020. This part is the smallest in Italy (16% of bullied children, 9% of all children), and the highest in Slovenia (38% of bullied children, 12% of all children), Switzerland (24% of bullied children, 13% of all children), Ireland (24% of bullied children, 14% of all children) and Romania (29% of bullied children, 17% of all children).

Figure 9 – Changes in being a victim of cyberbullying during the Covid-19 lockdown (compared with the previous period) (spring, 2020)

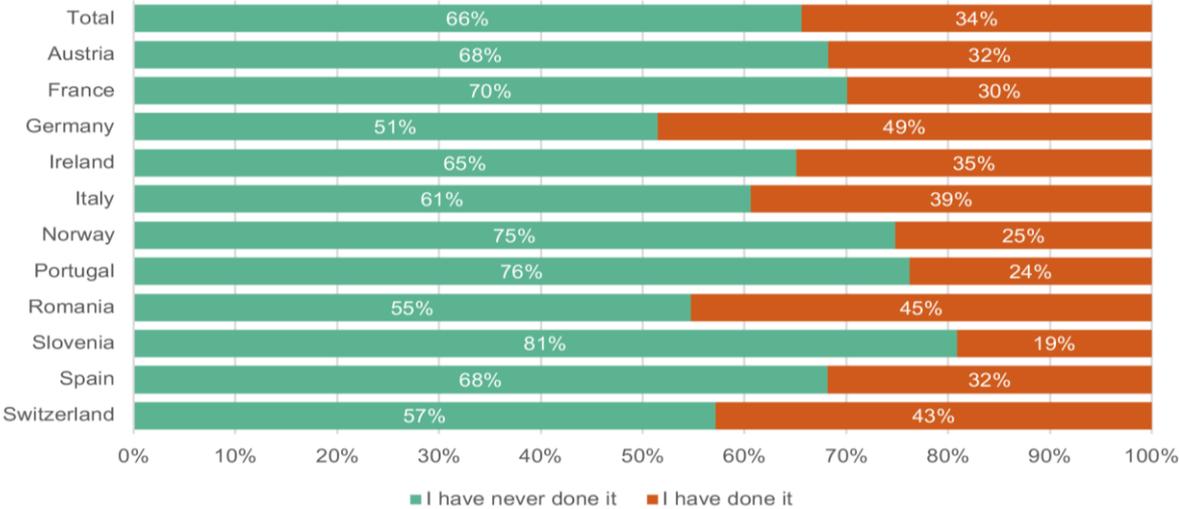


Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.2 "Nasty or hurtful messages were sent to me", QC6 .3 "Nasty or hurtful messages about me were passed around or posted where others could see", QC6 .4 "I was left out or excluded from a group or activity on the internet" and QC6 .5 "I was threatened on the internet". Note: this graph presents the general picture with those who have encountered or not the cyberbully situations; the graph does not present the changes during the lockdown.

### 4.2.2 Being a cyberbully

Children were also asked whether they themselves have ever been perpetrators of cyberbullying and having treated someone else in a hurtful or nasty way online. Figure 10 shows that in most countries, over two-thirds of children have never engaged in this experience (66%). The highest portions of children reporting having bullied others online were found in Germany (49%), Romania (45%) and Switzerland (43%).

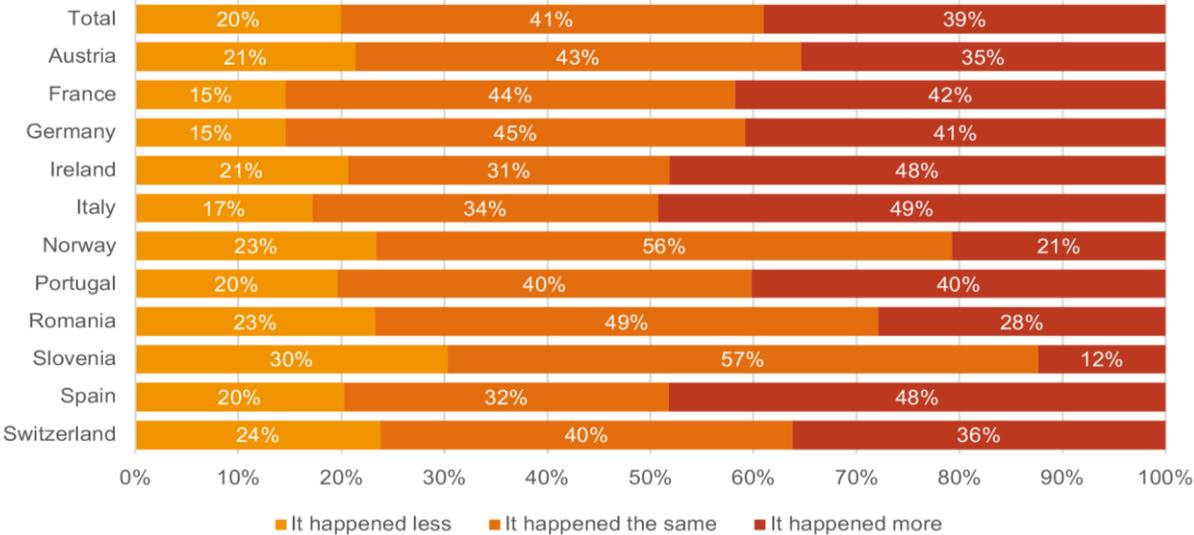
Figure 10 - Children who report to have bullied others online by country



Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.6 "I have treated someone else in a hurtful or a nasty way".

For those who reported having acted as cyberbullying perpetrators (Figure 11), this was done more or much more than before by 49% of bullying children, 19% of all children, in Italy, 41% in of bullying children, 20% of all children, in Germany. Further, in Italy, Ireland as well as in Spain, this percentage is higher in comparison to those who experienced it at the same level as before lockdown. In Norway, 21% of bullying children, 5% of all children, reported to have cyberbullied more or much more than before and in Slovenia, 12% of bullying children, 2% of all children, but these two countries, along with Portugal, have the smallest percentage of children acting as perpetrators in general.

Figure 11 - Change in being a cyberbully (perpetrator of cyberbullying) during the Covid-19 lockdown (compared with the previous period) (spring, 2020)



Question: QC6: as in Figure 10.

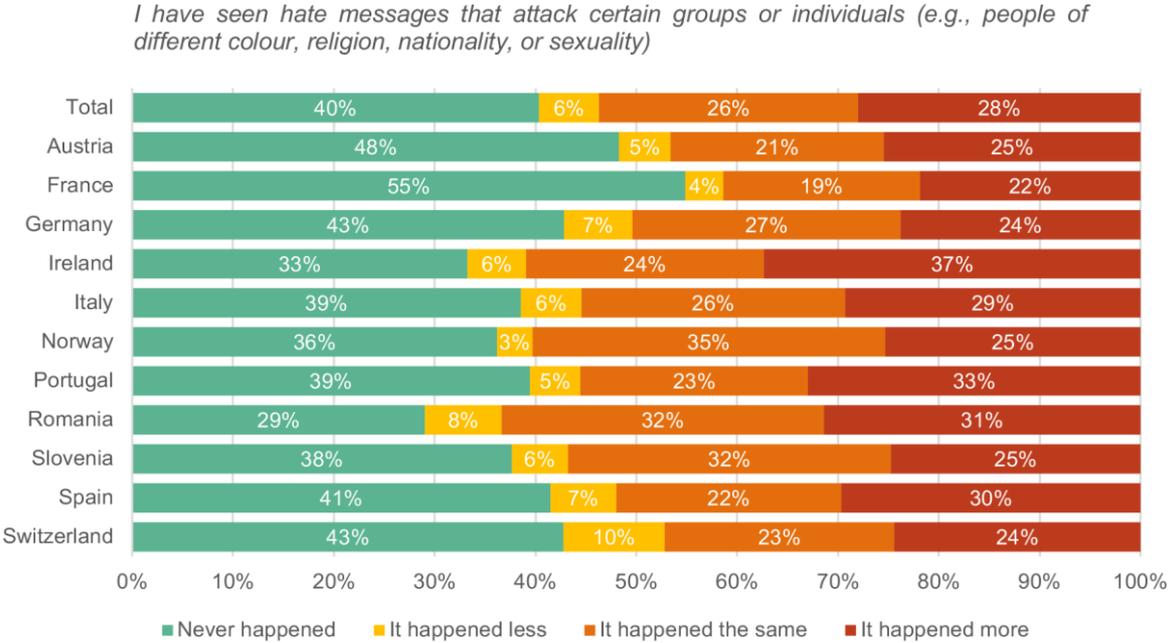
### 4.3 Cyberhate

Cyberhate, or online hate, refers to hate speech expressed on the internet or via information and communication technologies (Machackova, Blaya, Bedrosova, Smahel, & Staksrud, 2020). While cyberbullying refers to exchanges between individuals, often peers, hate speech is defined expressions which spread, incite, promote, or justify hatred, discrimination, xenophobia, and other forms of hatred based on intolerance (Europe, 2018). The definition includes all forms of such expressions, regardless of distribution format or channel. Online hate speech can be found in the form of text, visual presentations and moving images, as well as in communication between internet users.

To try to encompass this variety, we asked the children in our survey if they had seen hate messages that attack certain groups or individuals. We gave examples: offensive messages, related to people, e.g., of a different skin-colour, religion, nationality, or sexuality.

In all countries, the percentage of children who have ever been exposed to cyberhate (Figure 12) ranges between one-half, with 52% in Austria, to over two-thirds in Romania (71%). The exception is the French children, who reported this experience in 45%. We can further observe that this risky experience happened at the same level during the lockdown to approximately one-third of children in Norway (35%), Slovenia (32%) and Romania (32%); a quarter in Italy (26%), Portugal and Switzerland (23%) and one-fifth for the other countries and minimum of 19% in France. Also, between a quarter to over a third of children (Ireland, 37%) declared having encountered cyberhate expressions more during the lockdown. In France, only 22% of children shared this declaration.

Figure 12 - Encountering online risks related to user generated content (hate speech/ cyberhate) and changes in occurrences perceived by children during the lockdown period (spring, 2020), by country



Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.10: "I have seen hate messages that attack certain groups or individuals (e.g., people of different colour, religion, nationality, or sexuality)".

### 4.4 User-generated related risks

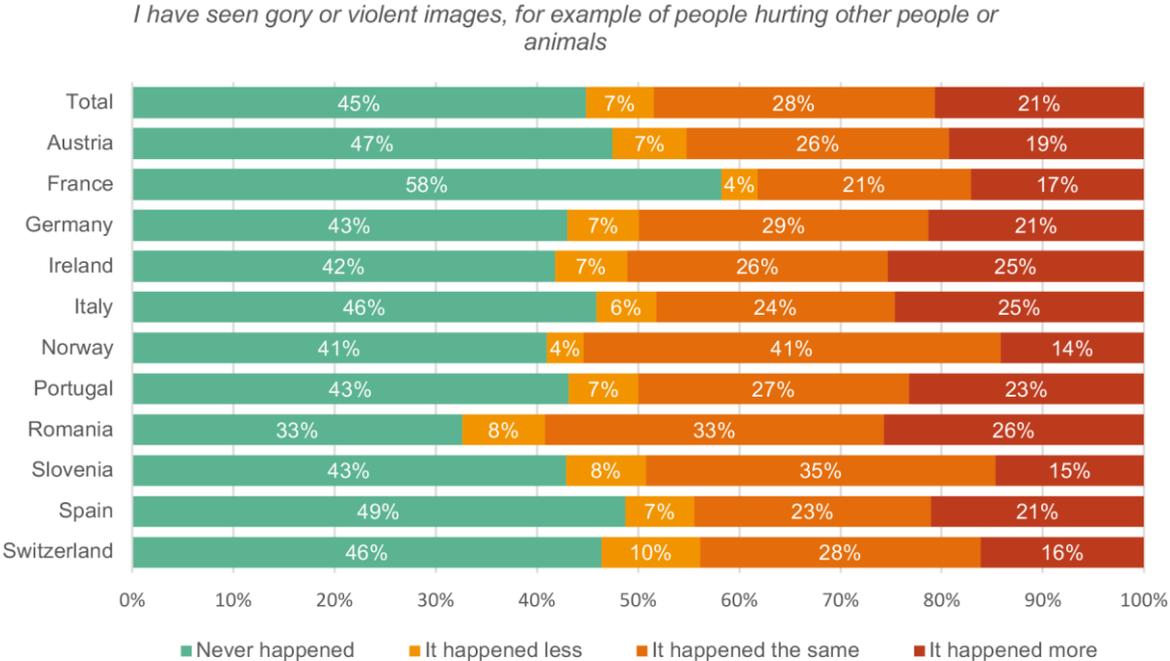
As noted in the introduction, the internet is a place for socialisation and interaction with other users. Most of this interaction is positive and made of exchanges between friends. However, some social interactions, such as bullying, harassment and hate speech are negative with potential severe consequences.

One of these risks that can potentially come from other users is what we generically call potential harmful user-generated content. These types of content, often not curated by a media-institution gatekeeper, represent harmful interactions and include content that glorifies and promote self-harm, suicide, violence, hate speech, drugs and dangerous dieting practices, such as anorexia and bulimia. User generated content risks have been growing steadily already since the first observance of these in 2010 by EU Kids online research. At that time, around one-quarter of children between 11-16 years had experienced these types of risks (Livingstone et al., 2011) growing to more than one-third in the recent years (Smahel et al, 2020).

Figure 13 (as well as Figure 14 below) shows these percentages growing, with at least half of the children surveyed reporting to have seen gory or violent images in all participating countries except France where only 42% of the respondents experienced this risk. The highest percentage of children that reported having already had this experience is encountered in Romania (67%).

During the COVID-19 spring lockdown, among children who have seen gory or violent images online, the experience has mainly stayed at the same level as before for the majority of children, over all countries. The part of children who experienced this risk more or much more than before reaches a quarter in Ireland, Italy and Romania.

Figure 13 - Encountering user generated content related risks (gory or extreme violence content) and changes that occurred in it during the lockdown period (spring, 2020), by country

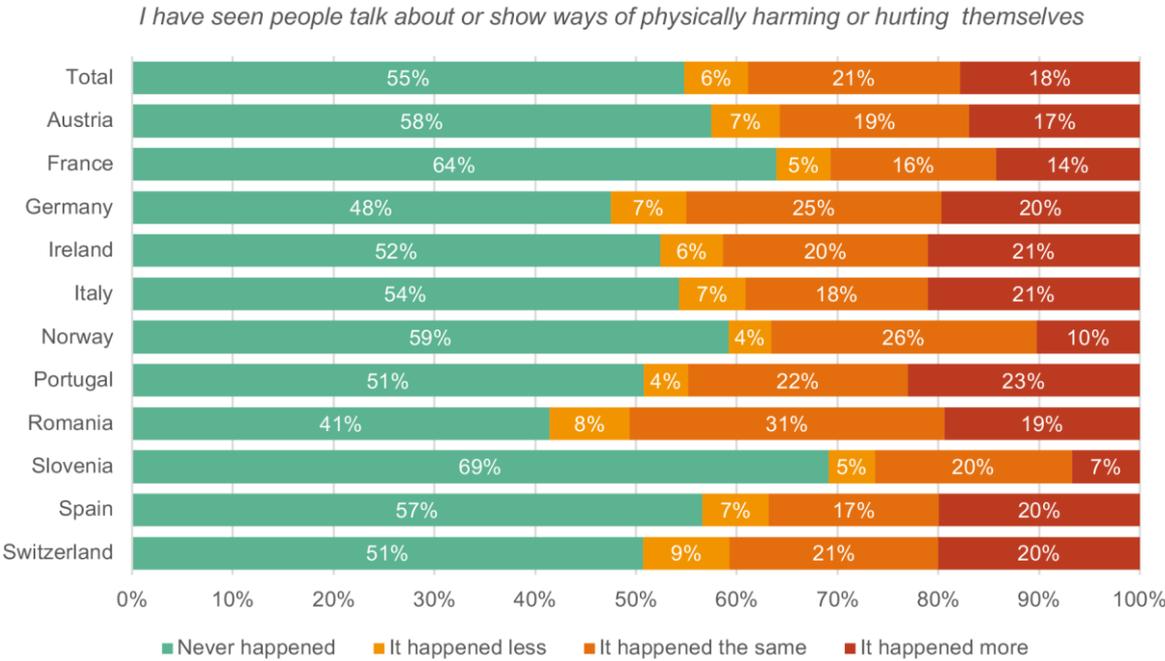


Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.10: "I have seen gory or violent images, for example of people hurting other people or animals."

Figure 14 addresses exposure to self-hurting practices across countries. The percentage of children who have ever been exposed to this risk is the highest in Romania (59%) followed by Germany (52%) and the lowest in Slovenia (31%) and France (36%).

Looking at the changes in Covid-19 spring lockdown, we can conclude that over all countries the percentage of children who experienced this risk at the same level as before and the percentage of children who experienced it more than before lockdown are roughly the same - approximately one-fifth. The percentage of children who experienced this risk more than before lockdown was the highest in Portugal (23%) and the lowest in Slovenia (7%) and Norway (10%).

Figure 14 - Encountering user generated content related risks (self-harm-related content) and changes that occurred in it during the lockdown period (spring, 2020), by country



Question: QC6: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC6.7: "I have seen people talk about or show ways of physically harming or hurting themselves."

### 4.5 Disinformation

When one is confined at home during a worldwide pandemic, access to reliable information and news is vital. As for adults, the internet represents a valuable and much-used source of information also for children. Meanwhile, due to the increasing amount of fake news and disinformation circling social media and other news sites during the Covid-19 times, seeking out information can also pose a risk.

To assess children’s own experiences, we asked if they had ever encountered online information during the lockdown that they perceived as untrue, and how such experience(s) changed compared to the period prior to the lockdown.

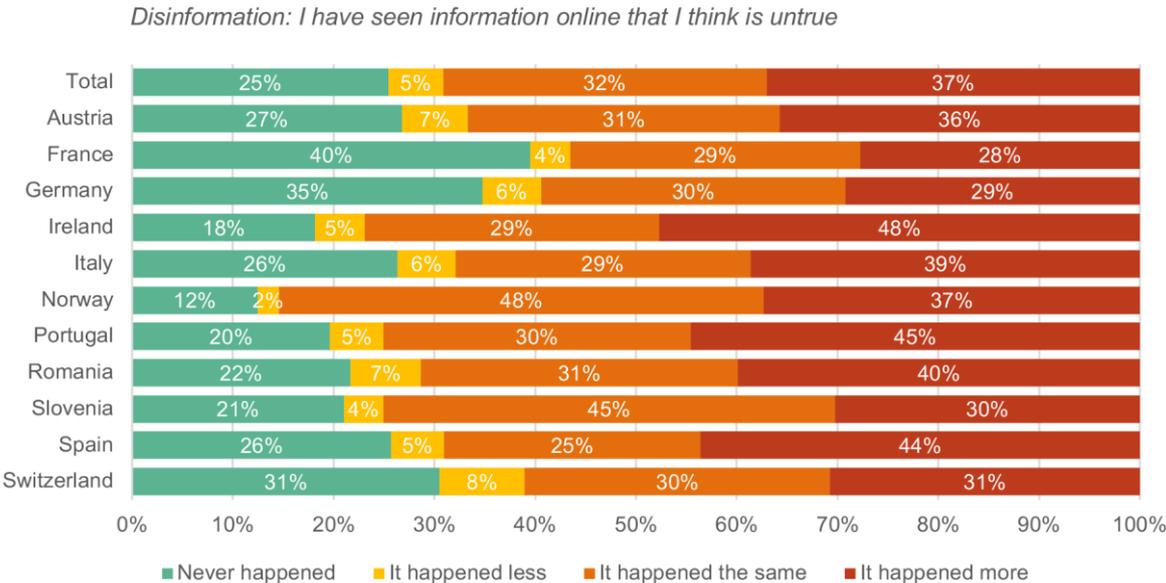
Looking at Figure 15, we can see that, in all countries, children report that they have run into, what they judge, untrue information. The highest share of children, who reported never to have seen this kind of disinformation is 35% of children in Germany and 40% of children in France. In Norway, only 12% of children reported never encountered untrue

information. In other countries, this share of children ranges between one-fifth and one-third.

During the Covid-19 spring lockdown for approximately one-third of children in all countries, this experience stayed the same. The exceptions were Norwegian (48%) and Slovenian (45%) children, where this share is close to one-half.

In general, from one-third to nearly one-half of the children reported encountering more disinformation during the spring lockdown. This percentage was the highest in Ireland (48%), Portugal (45%) and Spain (44%) and the lowest in France (28%), Germany (29%) and Slovenia (30%).

Figure 15- Encountering online disinformation during the lockdown period (spring, 2020), by country



Question: QC7: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC7.7: "I have seen information online that I think is untrue."

In general, these results show that children report some sort of critical distance when getting information from the internet, with three-quarter of them declaring encountering disinformation. More specifically, the results also show an increase of what children perceive as disinformation during the lockdown period.

The results also show an increase in the perception of this risk during the lockdown period with at least a third of children reporting this experience which was reported the most by Irish children (48%) followed by the Portuguese (45%), while the phenomenon was spotted the least by the French (28%) and German (29%) part of the sample.

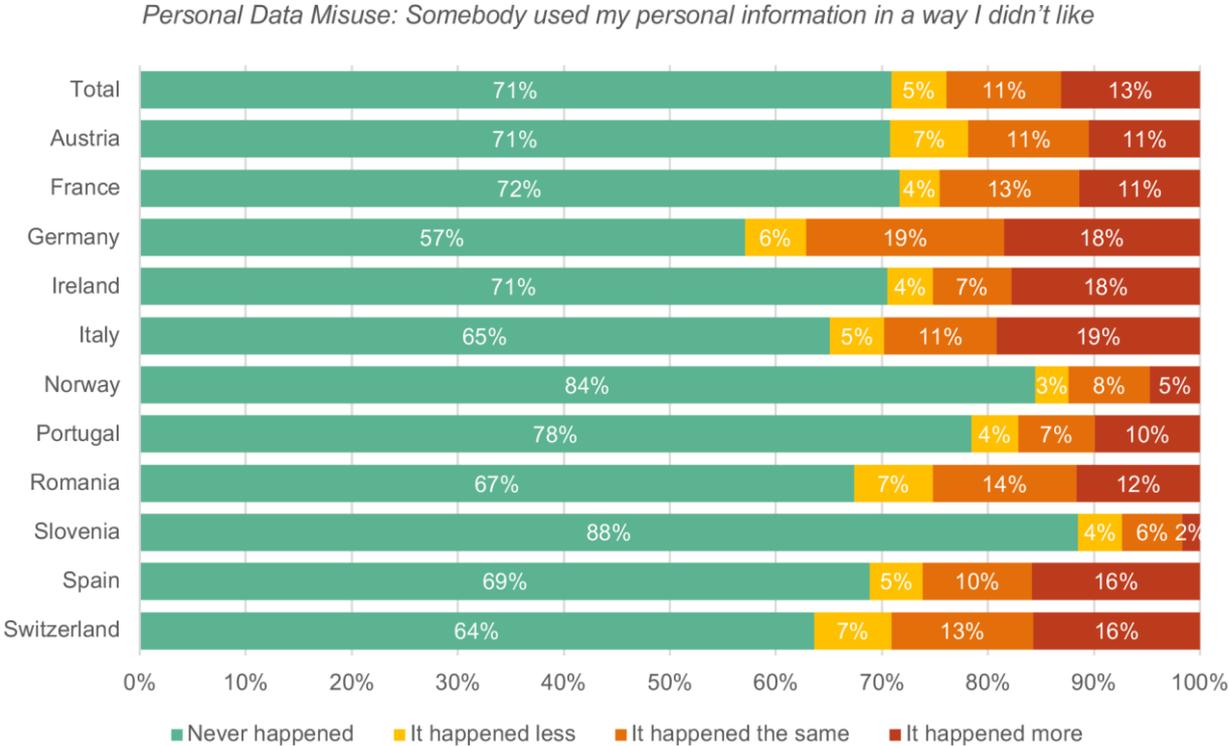
### 4.6 Personal data misuse

Using digital technologies inevitably leads to leaving all sorts of digital footprints, passively (user’s web-browsing activity) or actively (information deliberately shared by users). The EU General Data Protection Regulation has strengthened citizens’ fundamental rights for the protection and management of personal data in the digital age. The increased digitisation of society as a strategy to face the Covid-19 pandemic may have significantly exposed citizens to privacy risk violations.

On this basis, children were asked if they experienced personal data misuse during the Covid-19 spring lockdown and how it changed from the prior period. Specifically, we asked them to report the change in experiencing the following: "Somebody used my personal information in the way I did not like", "Somebody used my password to access my information or to pretend to be me" and "Somebody created a page or image about me that was hostile or hurtful".

Figure 16 shows that except German children, over two-thirds reported never experienced that somebody would use their personal information in a way they did not like. The highest percentage of children to whom this never happened is observed in Slovenia (88%) and Norway (84%). Consequently, the shares of those for whom online personal data misuse has grown during the lockdown is the lowest in Slovenia and Norway as well. In other countries, this percentage of children to whom the misuse of personal information happened more during lockdown than before ranges between 10% (Portugal) and 19% (Italy).

Figure 16 - Online personal data misuse (general situations) during the lockdown (spring, 2020), by country



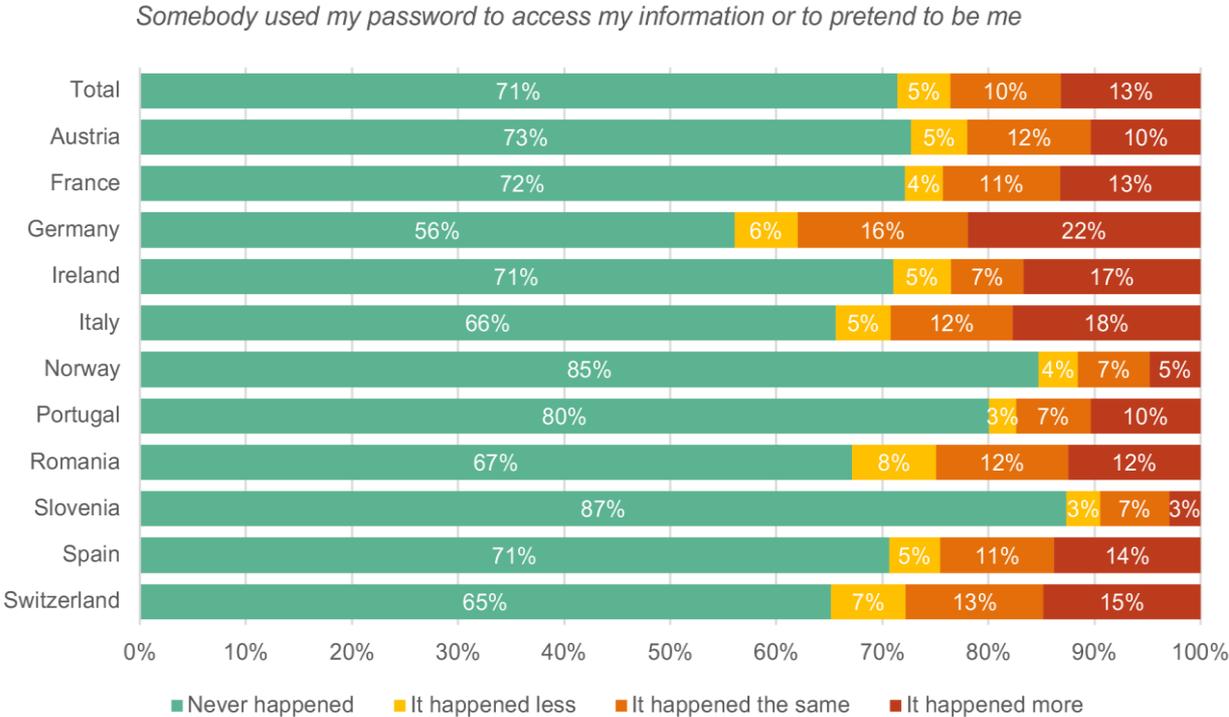
Question: QC7. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC7.1: "Somebody used my personal information in a way I didn't like".

Figure 17 focuses on data misuse in the form of a stolen password or impersonation during the Covid-19 spring lockdown. The highest percentage of children who reported experiencing this specific situation more during the lockdown are German children, followed by Italian children. The smallest shares of children who reported an increase of this experience during lockdown are observed in Slovenia (3%) and Norway (5%).

Figure 18 focuses on data misuse in the form of the creation of hate pages about individuals during the Covid-19 spring lockdown. In the majority of countries, over two-thirds of children did not experience this risk. The exception was German children, of which 57% never experienced this specific misuse of personal data. Meanwhile, the highest share of children who never experienced this is observed in Slovenia (91%), Norway (86%) and Portugal (83%).

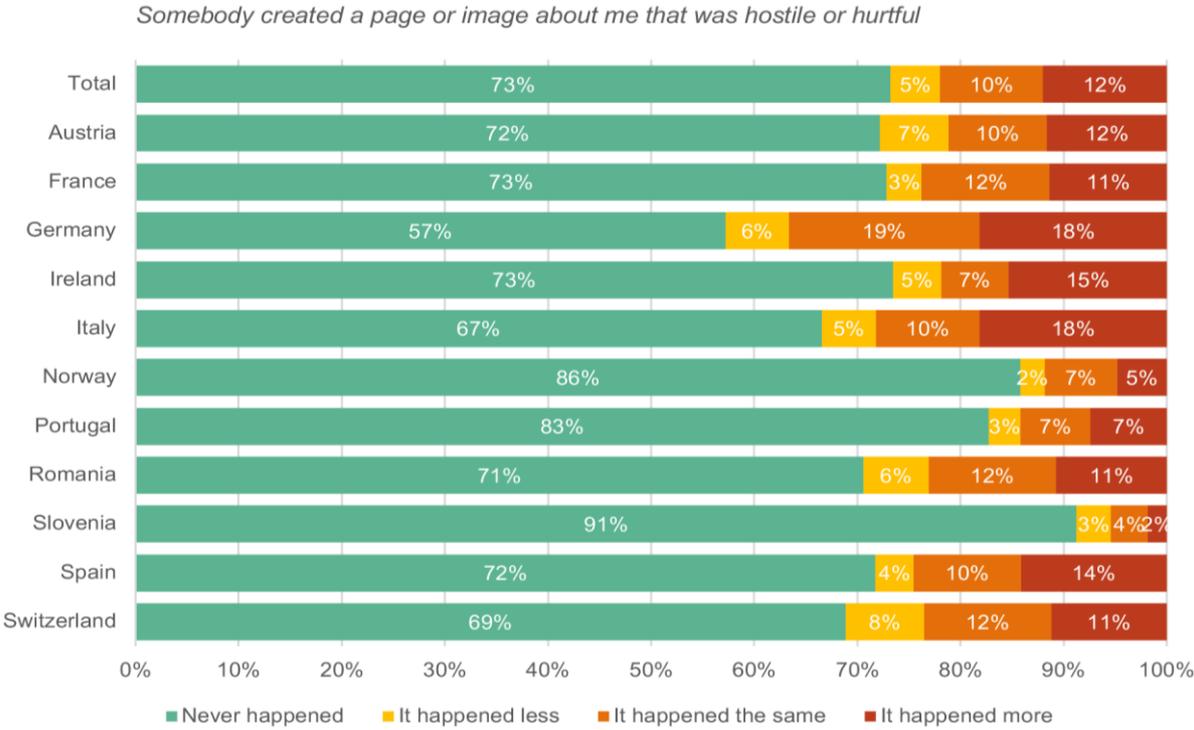
Looking at the relative change during the lockdown for those who ever experienced this specific personal data misuse, we see that the highest percentage of children who reported it to happen more than before were children from Germany (18%) and Italy (18%).

Figure 17 - Online personal data misuse – stolen password or impersonation situations – during the lockdown (spring, 2020), by country



Question: QC7. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC7.4: "Somebody used my password to access my information or to pretend to be me".

Figure 18 - Online personal data misuse: impersonation and hate pages, during the lockdown (spring, 2020), by country



Question: QC7: Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC7.5: "Somebody created a page or image about me that was hostile or hurtful".

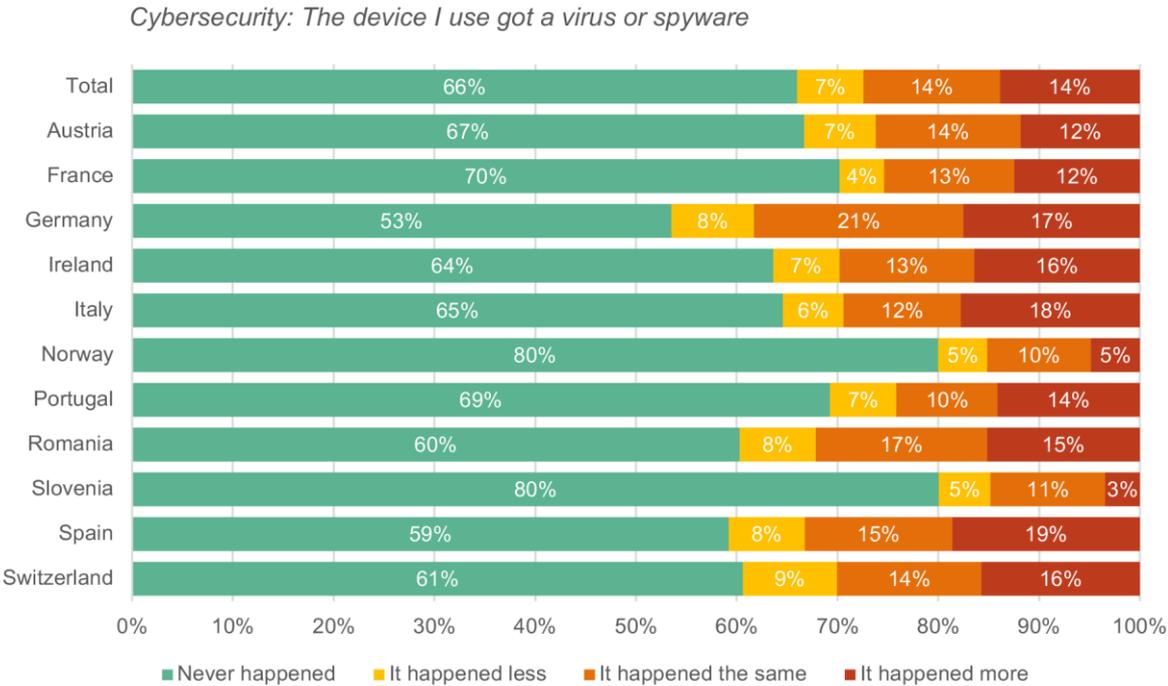
### 4.7 Cybersecurity

Cybersecurity is the ability to protect or defend the use of cyberspace, mostly the internet, from cyber-attacks. A cyber-attack is an attempt to disrupt, disable, destroy or to control a computing system maliciously via cyberspace (the internet) to destroy the integrity of data, steal access-restricted information or use maliciously computing power. Cyber-attacks can be implemented through different channels, such as phishing and malware, for the more trivial.<sup>7</sup>

To evaluate the cybersecurity risk, we asked children to report if any of the devices they use ever got a virus or spyware. We also demanded how their experience of cybersecurity risks in the form of viruses or spyware has changed during the Covid-19 spring lockdown.

Figure 19 shows, in general, over two-thirds of children across countries reported this never happened to them. The exception was German children, for whom this share was lower (53%). In Slovenia and Norway, 80% of children never had this experience. Similar to the case of personal data misuse, in Germany, Italy and Spain, nearly a fifth of children (respectively 17, 18 and 19%) reported to have experienced virus or spyware threat more during the lockdown than before. By contrast, only 5% Norwegian and 3% of Slovenian children experienced this risk more compared to the prior period.

Figure 19 - Encountering cybersecurity risks during the lockdown (spring, 2020), by country



Question: QC7. Below, there are some statements about situations that can happen online. Think about the lockdown period. Please indicate how much have any of these things happened to you online during lockdown in comparison to the period before the lockdown. QC7.2: "The device (e.g., phone, tablet, computer) I use got a virus or spyware".

<sup>7</sup> **Phishing** - A phishing attack entails use of email or websites for tricking users into giving required information by masquerading as a genuine entity known to the user.

**Malware** - Malware is a computer program that performs malicious actions on another computer. Malware, when downloaded from the internet, is disguised as a genuine application. Once it gets access to a user's computer, it can perform malicious acts including secretly retrieving data on the computer, use computing power or destroying existing data.

## 5 Reactions - Attempts to mitigate online risk

Children's use of digital technologies partly depend on which steps children's parents take to mediate their digital uses and practices. In our surveys we measure various parental mediation practices, that can be, according to the latest EU Kids Online report (Šmahel et al., 2020) divided into three types of mediation (see also Dürager & Sonck, 2014; Haddon, 2015; Helsper, Kalmus, Hasebrink, Sagvari, & de Haan, 2013; Livingstone et al., 2017): 1.) **active mediation**, which includes parents talking to their children, sharing online activities and suggesting ways to use the internet safely; 2.) **technical monitoring**, which comprises using technological solutions to monitor children's use with specialised software solutions and 3.) **restrictions**, which involve setting rules that generally limit time use and/or limits or forbid access to certain types of content. Online schools' strategies play another important role in mitigating online risks. Schools may develop those strategies following the same three axes, active mediation, technical monitoring and restrictions. Children themselves can be considered as efficient actors of mitigation of online risks by peer-to-peer active mediation and strategies that include technical solutions. Finally, note that the impacts of other actors in online risks prevention such as media educators, Safer Internet Centres, other NGO's or industry in the field are out of the scope of this study.

### 5.1 Parental mediation practices

Figure 20 shows the percentage of parents who never practice active mediation, technical monitoring or restrictions. In general, the share of parents who practice **active mediation** in the form of *talking to their children about they do with digital technologies* ranges between 99% in Spain and 91% in Norway. Figure 20 shows the reduced share of parents that never applied this strategy (from 1% in Spain to 9% in Norway). The percentage of parents who never practice active mediation in the form of *suggesting them ways to use the internet safely* spans from nearly 3% in Italy to 14% in Norway.

Looking at the **technological monitoring**, we can see that percentages of parents who never used it is the highest in Slovenia (33%), followed by Norway (32%) and Austria (27%), whilst the lowest in Spain (8.7%) and Ireland (9.9%).

Looking at the **restriction** in the form of limits or forbid access to certain types of content, we can observe that the countries with the lowest percentage of parents who never put in place those restrictive measures are Italy (3.8%) and Spain (4.3%). The highest rate of parents who never practice content-related restrictions is reported in Slovenia (16%) and Norway (16%).

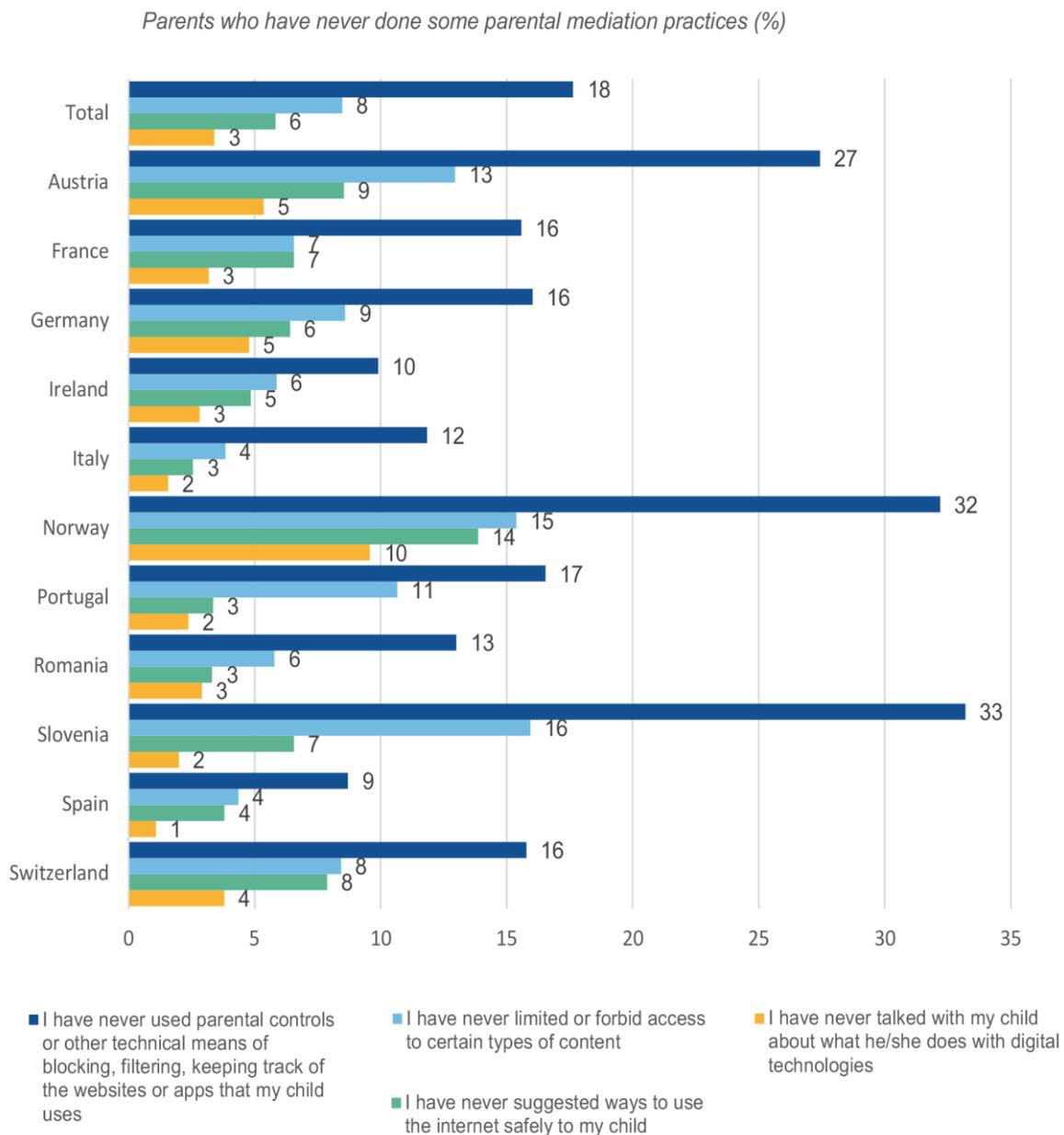
#### Active mediation

Figure 21 shows how parental active mediation practice in the form of *talking to their children about what they do with digital technologies* has changed during the Covid-19 spring lockdown.

Looking at how many parents increased this practice (talking to children), we can see that this percentage is the highest in Spain (58%), Romania (57%) and Italy (53%). By contrast, the lowest shares of parents who reported to talk more with their children about digital technology use during the lockdown are observed in Slovenia (26%), Austria (33%) and Norway (34%). However, even in these countries, at least one-quarter to one-third of parents reported to do it more.

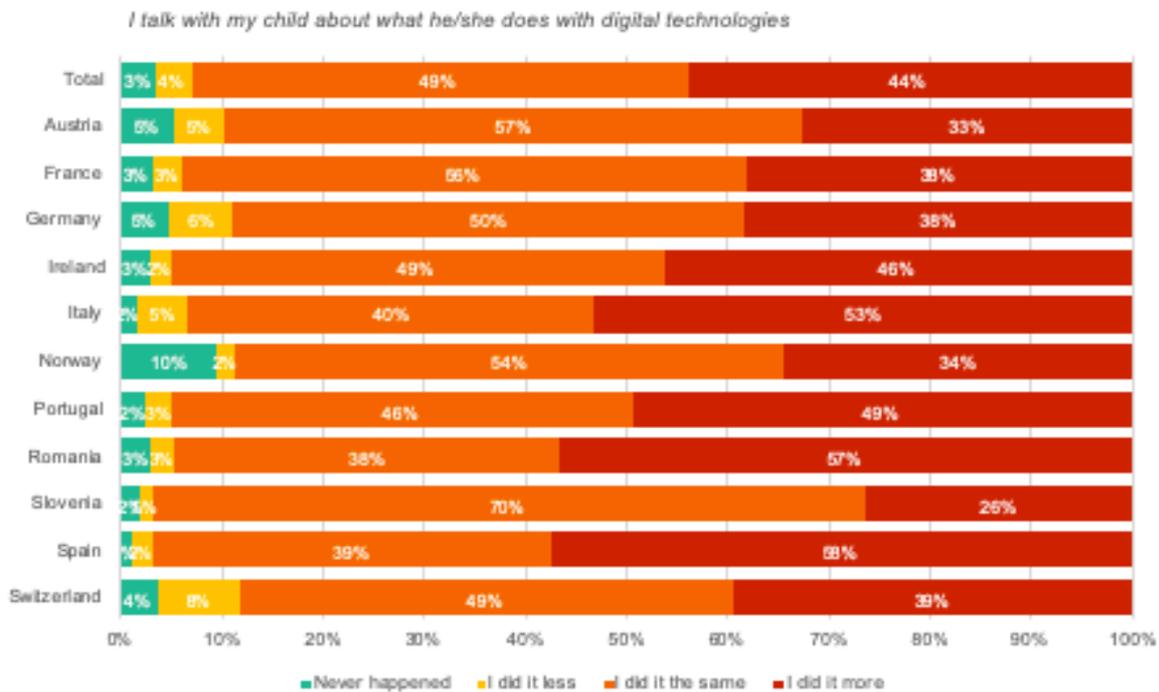
Notably, we can see that in Slovenia, 70% of parents did not change the practice. Further, the practice remained the same for more or less fifty per cent of the parents in Austria (57%), France (56%), Norway (54%), Germany (50%), Ireland (49%) and Switzerland (49%).

Figure 20 - Parents who have never done some parental mediation practices, by country



Question: Q8. Below, you'll find some statements about different ways in which you can handle your child's use of digital technology (e.g. tablets, computers, smartphones). Think about the lockdown period. Compared to the period before the lockdown, how much more or less did you do the following things, if ever? Q8.5: "I limit or forbid access to certain types of content (e.g. extreme violence, glory content, sexually explicit content)". Q8.6: "I talk with my child about what he/she does with digital technologies". Q8.10: "I use parental controls or other technical means of blocking, filtering, keeping track of the websites or apps that my child uses". Q8.12: "I suggest ways to use the internet safely to my child".

Figure 21 - Active parental mediation during the lockdown (spring, 2020), by country



Question: Q8: Below, you'll find some statements about different ways in which you can handle your child's use of digital technology (e.g. tablets, computers, smartphones). Think about the lockdown period. Compared to the period before the lockdown, how much more or less did you do the following things, if ever? Q8.6: "I talk with my child about what he/she does with digital technologies."

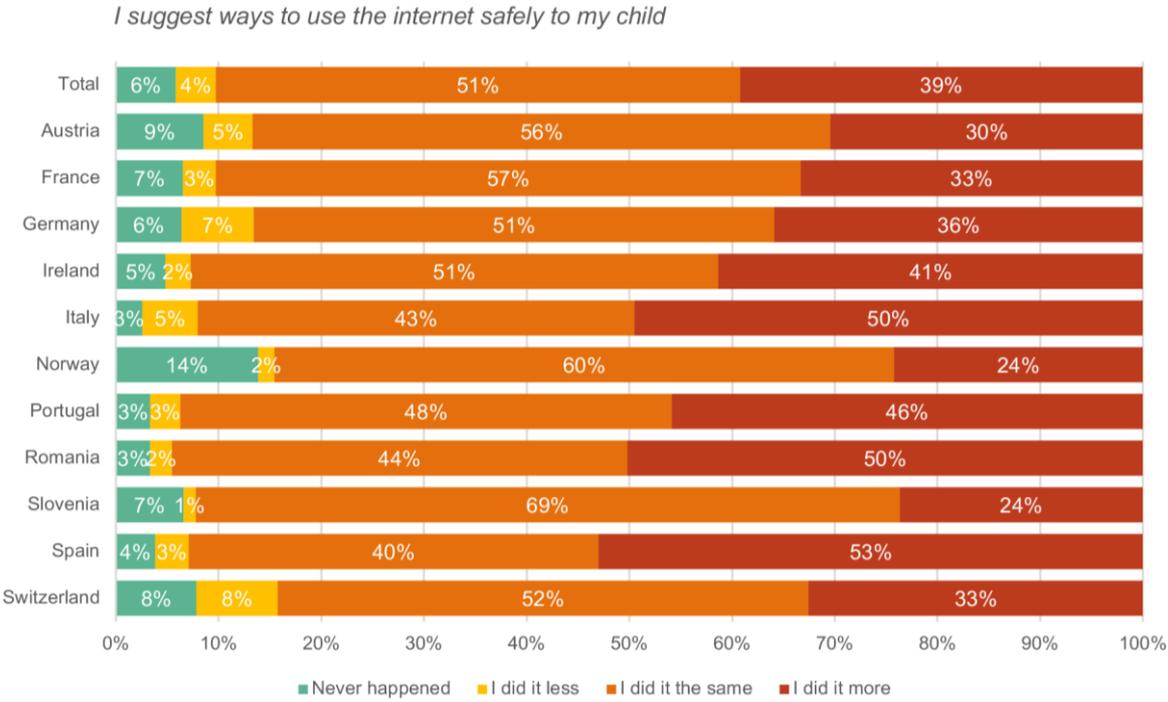
Figure 22 shows how active mediation practice in the form of *suggesting ways to use the internet safely to their children* has changed during the Covid-19 spring lockdown. Looking at how many parents increased suggesting ways to use the internet safely, we can see that this percentage is the highest in Spain (53%), Romania (50%) and Italy (50%), whilst the lowest in Slovenia (24%) and Norway (24%). Similar to the other active mediation practice, we can see that 69% of Slovenian parents did not change the practice. Further, the habit remained the same for above fifty per cent of the parents in Norway (60%), France (57%), Austria (56%), Switzerland (52%), Germany (51%) and Ireland (51%). Still, we can conclude that overall, the active mediation practices were increased by at least one-quarter of parents across countries during the spring lockdown.

### Technical monitoring

In Figure 23, we see how technical monitoring has changed during the Covid-19 spring lockdown. In general, from 44% (in Germany) to 54% (in Slovenia) of parents reported practicing it at the same level as before.

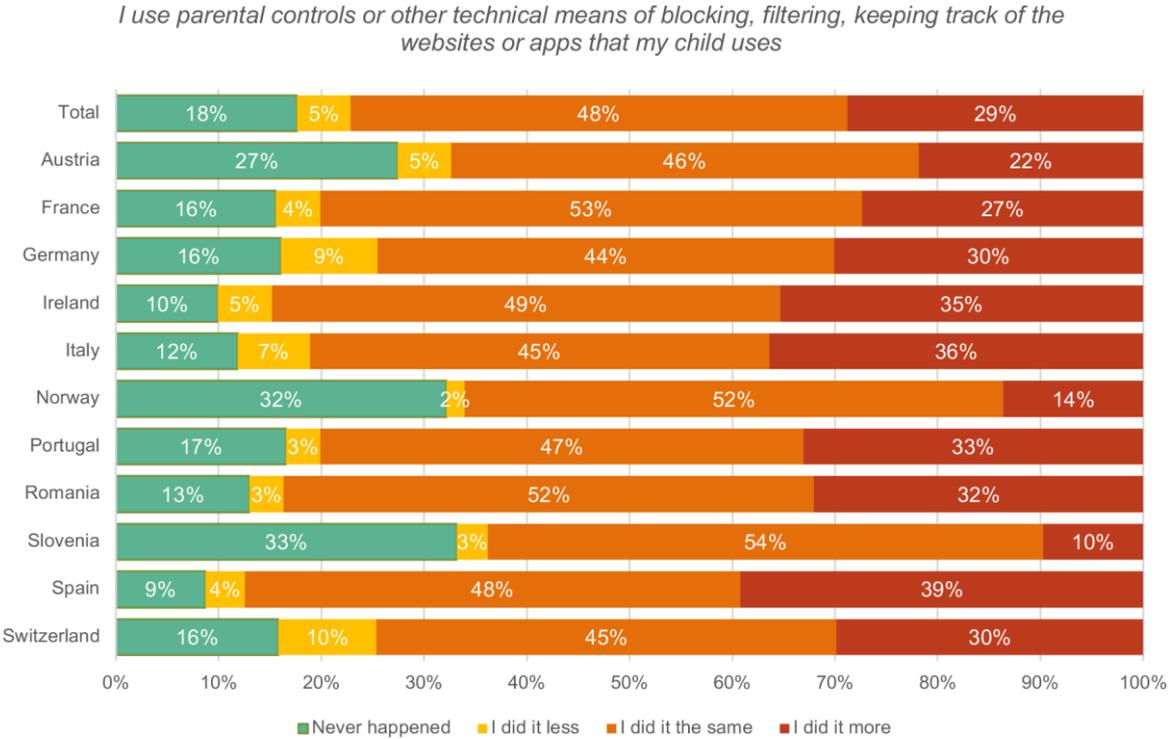
Looking at how many parents increased technical monitoring, Figure 22 shows that only 10% of Slovenian and 14% of Norwegian parents reported to implement it more than before. By contrast, except for Austria (22%) and France (27%), in all other countries, at least one-third of parents reported practicing technological monitoring more during the lockdown than before. Spanish parents report the highest growth of this practice (39%).

Figure 22 - Safety mediation practices during the lockdown (spring, 2020), by country



Question: Q8: Below, you'll find some statements about different ways in which you can handle your child's use of digital technology (e.g. tablets, computers, smartphones). Think about the lockdown period. Compared to the period before the lockdown, how much more or less did you do the following things, if ever? Q8.12: "I suggest ways to use the internet safely to my child".

Figure 23 - Technical parental mediation practices during the lockdown (spring, 2020), by country



Question: Q.8 - Q8.10: "I use parental controls or other technical means of blocking, filtering, keeping track of the websites or apps that my child uses".

## 5.2 Cybersecurity, protecting devices

Children and their parents were asked to report on how to take steps towards protecting their own devices (e.g. using anti-viruses, passwords, filters) during Covid-19 spring lockdown. Figure 24 shows that parents are used to taking steps towards safeguarding devices more than their children. The share of parents who never took safeguarding measures is of 10% and below in all countries. On the children's side, this rate is higher, ranging between 11% (in Romania) and 30% (in Norway) but still surprisingly low.

For all those parents and children that ever took steps to protect their devices, the practice has largely remained the same during the lockdown. Overall, more parents than children took additional steps to protect their devices during the lockdown. The percentage of parents who did it more ranges between 18% in Norway and 46% in Spain. Meanwhile, the highest shares of children who undertook more protective actions are reported in Italy (38%), Romania (37%) and Spain (37%), whereas the lowest are in Norway (13%) and Slovenia (14%). In all countries, the percentage of parents who took more protective measures was higher than the rate of children. The most significant increases of additional cybersecurity protections implemented during lockdown are observed between Irish (39% vs 29%) and Spanish (46% vs 37%) parents and children.

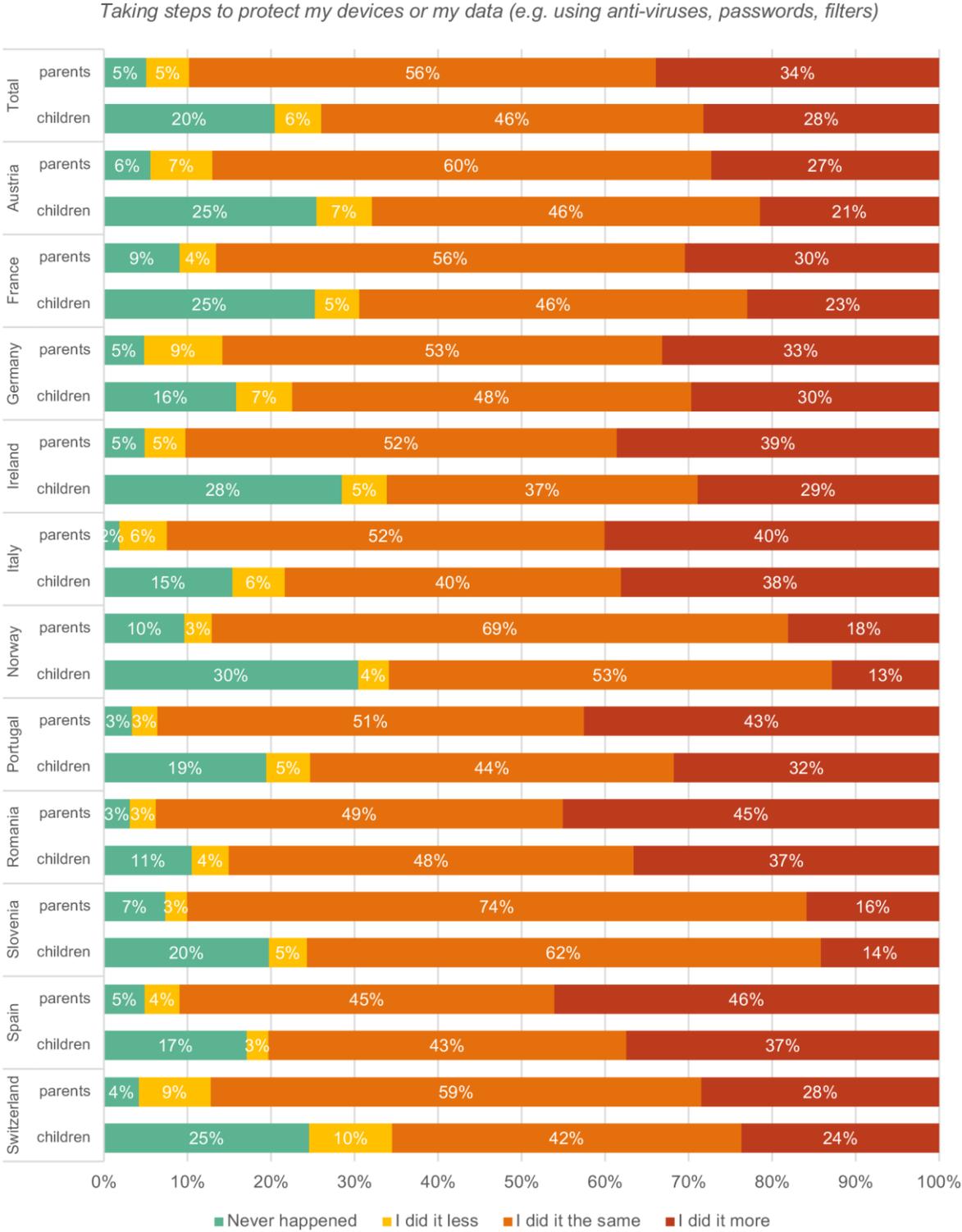
In the parents' part of our survey, we asked parents whether their children's schools provided any digital security packages to protect devices from viruses and other threats. Moreover, we asked them to report if, in addition to what schools provided, they used some other digital security packages to protect children's devices from viruses and other threats that were used for children's education during Covid-19 spring lockdown.

As Figure 25 shows, in all countries, the school provision of protection was reported to be lower than own parental steps towards protection. The highest difference between what school provided and parental actions for protection is observed in Romania (17% vs. 33%). The smallest difference between these two sources of device protection is reported in France (schools 23% vs. additional parental protection 25%).

The country with the lowest percentage of both types of protection is Slovenia, where only 7% of parents reported the school as a provider of additional cybersecurity and 18% of parents saying their initiative to extra protection. The country with the highest rates for both types of protection is Italy (schools 29% vs. parents 35%).

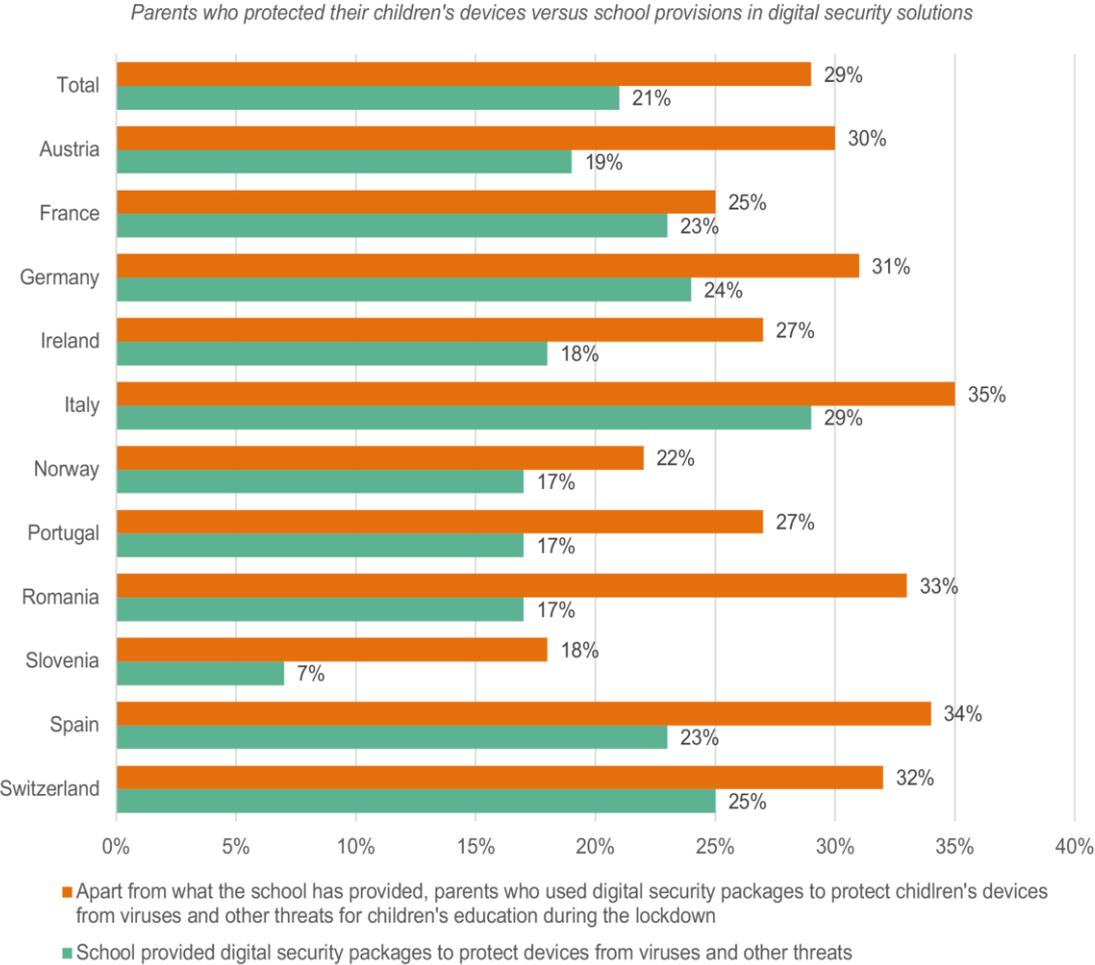
Looking at percentages over all countries, schools' cybersecurity provisions were reported by approximately a quarter of parents in Switzerland (26%), Germany (24%), Spain (23%) and France (23%). Parental additional protection was reported by approximately one-third of the parents in Austria (30%), Germany (31%), Switzerland (32%), Romania (33%), Spain (34%) and by already above-mentioned Italian parents (35%).

Figure 24 - Tacking steps to protect their own devices, children versus parents, during the lockdown (spring, 2020), by country



Question: Q7 & QC4: Think about the lockdown period lockdown. Please indicate how much more or less did you do any of these things online during lockdown, in comparison to the period before the lockdown. Q7.7 & QC4.13: "Taking steps to protect my devices or my data (e.g., using anti-viruses, passwords, filters)".

Figure 25- Parents who protected their children’s devices used for education versus school providing digital security packages for children’s devices for remote/ online schooling during the lockdown (spring, 2020), by country



Question: Q13. Did your child’s school provide any of the following during the lockdown? Q13.4. "Digital security packages to protect devices from viruses and other threats." & Q14. Apart from what the school has provided, did you use any of the following for your child's education during the lockdown? Q14.5. "Digital security packages to protect devices from viruses and other threats."

## 6 Conclusions

The Covid-19 pandemic dramatically impacted the lives of most children in Europe. The lockdown affecting the majority of European countries in spring 2020 saw the sudden shift of most children's activities into the digital world. Since then, children's schooling, leisure time, social contacts, home life have mostly been conducted at home via digital media. Thanks to technology, children in strict lockdown situations could enjoy peer interactions and social contacts in some way, which helped avoid complete social isolation. During the Covid-19 crisis, the online world proved to offer opportunities and new possibilities, substituting face-to-face interactions. However, it also comes with well-known online risks: inappropriate content, overuse, cyberbullying, cyberhate, disinformation, misuses of personal data, cyber risks, etc.). Previous research (Hasebrinck, 2012) noted that *"Increased time spent online should increase the likelihood of negative experiences - and also opportunities"*. The aim of this study is to measure if effectively this hypothesis can be verified for children in distance schooling modalities during Covid-19 lockdown, in spring 2020.

This report provides a snapshot of how children across Europe perceived and experienced different known **online risks during the spring Covid-19 lockdown in 11 countries**, and which steps parents and children themselves took to mitigate and cope with these risks. A special focus of the report allows to identify changes that occurred in children's online risk experiences during the Covid-19 lockdown, compared to the situation before the Covid pandemic.

It is important to note that the findings presented in this report should be interpreted considering some limitations that relate to the nature of the data and their collection. Firstly, the data are self-reported, therefore we need to consider possible error and bias due to the imprecision of memories or social desirability. Secondly, as respondents answered to the survey online in their own households, parents may have been close by during the data collection, influencing somehow the children's answer.

In this study, we specifically measured children's experiences and perceptions on screen excessive use, cyberbullying, cyberhate, disinformation, misuses of personal data, cybersecurity; the change they perceived in this kind of experience during lockdown compared to the previous period; and parents and children's reactions to mitigate online risks.

### Children, time spent online and excessive use

- First, regarding the online context that the lockdown enforced on children at home, results of the study show that **children aged between 10 and 18 years old spend on average 6.5 to 7 hours on a weekday online during the first lockdown period**. Half of this time was dedicated to school related activities.
- **The majority of the surveyed children felt like they spent too much time using the internet or digital devices (77%) and nearly half (48%) felt an increase of this feeling during the lockdown period.**
- Parents worrying about the time their children spent online were even more numerous (86%) and nearly half of parents (48%) worried more about an excessive use of the technology by their children during lockdown compared to the previous report.
- Effectively, half of the children declared having gone without eating or sleeping because of the internet, and a quarter of respondents declared an increase of this behaviour during the lockdown period. More than two-thirds of children (70%) reported having failed in trying to reduce the time spent online and a third (34%) noticed to struggle even more during the lockdown period.

## Children and other online risks

Overall, three out of five children felt safe using the internet, while two out of five young users reported to feel some danger in the online space. Further analysis helped us to understand more specifically from where this relative feeling of insecurity can come.

- **Disinformation** is the experience that children felt encountering and reported the most (75%) and *during lockdown, more than a third (37%) felt an increase of that experience.*
- **Hate-speech** is the second risk that children most reported (60%) and *more than a quarter (28%) reported to have seen an increase of hate messages that attack certain groups or individuals (e.g people of different colour, religion, nationality or sexuality)*
- **Violent or gory content** follows, with more than half of children (55%) reporting to have already seen gory or violent images online such as hurting other people or animals, for example. *A quarter of children (21%) stated a noticeable increase of this type of experience during the lockdown compared to the previous period.*
- **Self-harm content shows lower figures.** Nearly half of children (45%) declared having already seen people talk about or show ways for physically harming or hurting themselves. *Nearly a fifth (18%) reported an increase of this type of experience during lockdown.*
- The **cybersecurity risk of using a device that suffered from a virus or a spyware has** been relayed by nearly half of the young users (44%), *a sixth (14%) noticed an increase of the phenomenon during lockdown.*
- The **use of personal data** in a way respondents did not like, the misuse of personal passwords, the use of personal information with hurtful consequences were declared as a personal experience by nearly a third of the respondents (respectively 29%, 29% and 27%). *More than 1 out of ten children reported an increase of this experience during the lockdown (respectively 13%, 13% and 12%).*

## Some attempts to mitigate online risks other online risks

### Parents

We have seen already that parents showed major concerns regarding the time children spent online during lockdown. Here are the measures they chose to put in place regarding parental mediation and their evolution during lockdown.

- Most parents are used to engage actively in mediating this use, e.g. by talking with their child about their online activities (97%), by suggesting ways to use the internet safely (94%). Most parents also forbid access to certain online content (92%).  
*During lockdown, nearly half of parents felt the need to talk more about online practices with their children (44%), more than a third (39%) engage in conversation with their child regarding safe use of the internet.*
- Parents were numerous to use parental control or other technical means to keep track of their children's online activities (82%) already before the pandemic. *They were nearly a third (29%) to invest more in this kind of mediation during lockdown.*
- Most parents (95 %) declared to have taken steps to protect their child's device or data, *and a third (34%) reported to have major actions in this strategy during lockdown.*

## Children

Children, on their side, also act to mitigate some of the online risks. Results of the study highlight the following.

- Eight out of ten children (80%) followed their parents' example in taking steps to protect their device or data, and *three out of ten children (28%) undertook further actions to improve this protection during lockdown.*
- We already saw that some children attempted to reduce the time they spent online with some difficulties. Still a third of the respondents manage this time well and *nearly one out of ten (7%) declared to fail less often in this attempt during lockdown than before.*

## Schools

Finally, results underline that besides parents and children, schools also acted to improve cybersecurity.

- A fifth of the schools (21%) provided *digital security packages for children's devices for remote/ online schooling during the lockdown.*
- Still, nearly a third of parents (29%) felt the need to deploy further in digital security solutions in this period.

## Further research

Results show that for some children, the online risks considered in this study intensified during the lockdown. This part is spanning from one-fifth to one-third of children depending on the risk (see paragraph above). The shares are relatively close for the children for which the risks stayed the same over the period. Some children (between 5 to 10%, depending on the risk category) encountered online risky experiences to a lesser extent than the previous period. Finally, a significant number of children have never discovered certain types of online risk. This share varies from one-quarter (disinformation risk) to three-quarters (misuse of personal data).

The results depict online risks in children's use and its evolution during the Covid-19 lockdown, but not how children react to them and are affected by them. This calls for future work to distinguish risks from harm on one side, and resilient behaviour. Neither does the report provide information on how children could benefit from online opportunities during the Covid-19 crisis. Previous analysis (Vuorikari et al., 2020) showed that, fortunately, most children sampled could access the internet to keep up with school, social interactions and manage leisure time and space.

Finally, among other factors digital skills matter in online prevention, previous research has shown: 'digital skills can mediate between exposure to online risks and harm or resilience by reducing the harmful consequences of exposure to risks and making children more resilient', while, at the same time 'the more online opportunities children benefit from, the more children develop digital skills, and vice versa' (Šmahel et al, 2020, p.35). Therefore, future work needs to consider questions such as: How did children seized online opportunities during Covid-19 crisis? How have children's digital skills evolved in the period? Does the evolution of skills show correlations with the change of online opportunities and risks? Answers to those questions will undoubtedly provide a more precise picture of children's online experiences.

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## Annex – Sample description and data collection procedures

Table 1 shows basic information of data collection per country, including the period in which data was collected, the average duration of the survey in each country and the number of parents and children pairs that respondent per each country.

*Table 1. Basic information about data collection per country.*

COUNTRY	START	END	AVERAGE DURATION	MEDIAN	SAMPLE SIZE
<b>AUSTRIA</b>	15.7.2020	30.7.2020	00:29:51	00:27:11	510
<b>FRANCE</b>	22.7.2020	23.7.2020	00:29:07	00:22:16	544
<b>GERMANY</b>	22.7.2020	24.7.2020	00:24:20	00:19:31	513
<b>IRELAND</b>	17.7.2020	08.08.2020	00:33:26	00:29:23	504
<b>ITALY</b>	15.7.2020	22.7.2020	00:27:05	00:22:03	1028
<b>NORWAY</b>	24.7.2020	9.8.2020	00:42:34	00:38:07	525
<b>PORTUGAL</b>	20.7.2020	27.7.2020	00:33:24	00:29:44	510
<b>ROMANIA</b>	14.7.2020	29.7.2020	00:32:16	00:28:08	518
<b>SLOVENIA</b>	23.6.2020	3.7.2020	00:36:11	00:32:35	506
<b>SPAIN</b>	21.7.2020	23.7.2020	00:27:28	00:22:16	554
<b>SWITZERLAND</b>	21.7.2020	11.8.2020	00:32:54	00:27:12	502

### Sample description and data collection procedure

The target population for this study was children between 10 and 18 years of age and one of their parents.

The data collection was conducted by the research company VALICON. Respondents were drawn from the Valicon panel sample and panel samples of their respective partners in each of the included countries. Based on the VALICON's existing data (census of the age of household members), a pre-selection of individuals with children aged between 10 and 18 was made. If the parent respondent had more than one child in the target age group who was willing to participate in the second half of the survey, parents were advised to invite the child who would be the next to have their birthday to participate.

The final database consists of the answers of those respondents where both the parent part and the child part were completed. The database was not weighted. The basic data collection information on data collection per country, including the period in which data was collected, the average duration of the survey in each country and the number of parents and children pairs that respondent per each country, is available in table 2.

Table 2 shows basic sample characteristics for parents and children. In general, all country samples except the sample of Slovenian parents, show a good gender balance. The gender imbalance is slightly larger among the children, and in all countries except Norway, the sons are in majority. Moreover, demographic results show distinct sample differences in the distribution on degree of urbanity, housing arrangements, educational level and partly in self-reported level of income. For instance, while the majority of families of the sample from Spain and Romania live in large cities and in apartments, only 19 % of the Swiss

families live in a large city, and only 16 % of the Irish families live in apartments. These differences may be relevant for the interpretation of the country differences reported (Vuorikari et al., 2020).

*Table 2. Sample characteristics by gender, living arrangement, age of children and parental self-reported socio-economic status (SES).*

	<b>AT</b>	<b>FR</b>	<b>DE</b>	<b>IE</b>	<b>IT</b>	<b>NO</b>	<b>PT</b>	<b>RO</b>	<b>SI</b>	<b>ES</b>	<b>CH</b>	<b>Total</b>
<b>Parent (n)</b>	<b>510</b>	<b>544</b>	<b>513</b>	<b>504</b>	<b>1028</b>	<b>525</b>	<b>509</b>	<b>518</b>	<b>506</b>	<b>554</b>	<b>484</b>	<b>6195</b>
<i>Gender</i>												
<i>Female</i>	45%	57%	47%	51%	49%	51%	48%	47%	68%	44%	47%	
<i>Male</i>	54%	43%	52%	48%	51%	49%	52%	53%	32%	56%	51%	
Lives in a large city	36%	29%	37%	37%	36%	36%	37%	57%	23%	51%	19%	
Lives in apartment	52%	31%	46%	16%	61%	27%	55%	64%	33%	69%	59%	
<b>Child (n)</b>	<b>510</b>	<b>544</b>	<b>513</b>	<b>504</b>	<b>1028</b>	<b>525</b>	<b>509</b>	<b>518</b>	<b>506</b>	<b>554</b>	<b>484</b>	<b>6195</b>
<i>Gender</i>												
<i>Female</i>	47%	44%	46%	45%	40%	51%	39%	41%	45%	35%	46%	
<i>Male</i>	53%	56%	54%	55%	60%	49%	61%	59%	55%	65%	54%	
<i>Age</i>												
<i>10-12 years</i>	37%	31%	26%	30%	34%	28%	35%	35%	25%	36%	35%	
<i>13-15 years</i>	32%	42%	45%	41%	40%	41%	37%	34%	42%	41%	37%	
<i>16-19 years</i>	31%	28%	29%	29%	26%	31%	28%	31%	34%	23%	28%	
<i>Parent's self-reported income level</i>												
<i>below average</i>	22%	23%	16%	26%	22%	23%	25%	21%	20%	12%	27%	
<i>average</i>	45%	47%	45%	41%	58%	39%	54%	47%	63%	51%	39%	
<i>above average</i>	33%	30%	39%	33%	20%	37%	21%	32%	17%	37%	34%	

Note: due to results being rounded to the nearest integers (0.0-0.4 being rounded down and 0.5-0.9 being rounded up) automatically by Excel, there might be cases with 101% or 99% sum. This 1%, either being added or missing, cannot be assigned to any specific category but is rather distributed across all.

The data was collected via CAWI (computer assisted web interviewing). Children and parents who agreed to participate in the study answered a questionnaire on their own digital devices (computers/mobiles/tablets). Parents and children were asked to complete their questionnaires separately from each other.

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