



Internet Watch Foundation in partnership with Microsoft

Emerging Patterns and Trends Report #1 Online-Produced Sexual Content

10 March 2015

Contents

Executive summary.....	3
Background.....	4
Purpose of the study	5
Methodology	6
Definitions	6
Preliminary analysis of data	7
Data relating to under 15s.....	12
Conclusions	16
Limitations on the study	17
Recommendations for future research	18
References / Further Resources	19
Appendix A.....	21
Appendix B.....	22
Appendix C.....	23

Executive summary

This Paper introduces the key findings of a quantitative study of youth-produced sexual content online (“the Study”).

The Study took place over a three month period between September and November 2014 and used a combination of proactively sourced¹ content from search engines, historic IWF data² and leads from public reports to locate “youth-produced sexual content”³ depicting “young people”⁴.

Where the content was assessed as meeting these criteria the content was analysed in accordance with IWF’s standard procedures for actioning child sexual abuse content, capturing data about each image/video including image category⁵, site type, commerciality, hosting location, device used to create the content and the assessed age and gender of the individuals depicted.

During the course of the Study, **3,803** images and videos were assessed as meeting the research criteria.

The key findings of the Study were as follows:

- **17.5% of content depicted children aged 15 years or younger.**
- **85.9% of content depicting children aged 15 or younger was created using a webcam.**
- **93.1% of the content depicting children aged 15 or younger featured girls.**
- **46.9% of content depicting children aged 15 years or younger was Category A or B⁵ compared to 27.6% of content in the 16-20 years age range.**
- **89.9% of the total images and videos assessed as part of the Study had been harvested from the original upload location and were being redistributed on third party websites.**

The Study was carried out by Internet Watch Foundation (IWF) in partnership with Microsoft and was initially designed to expand upon an earlier study carried out by IWF in 2012 which provided a snapshot of the availability of self-generated sexual content featuring young people online and the extent to which control over that content is lost once it has appeared online.

However, on analysis of the data it became apparent that the scope of the 2012 study and the definition of “self-generated sexual content”⁶ as used therein was inadequate in describing the observed trends. This was particularly the case in relation to methods of creation of the content and age of many of the individuals depicted.

What emerged from the data in this Study is an increasing trend for the distribution of sexually explicit content produced by younger children using laptop webcams which, due to the nature of the technology used, they are aware is being shared with at least one other party. To reflect this finding, we instead propose a new definition of “youth-produced sexual content” as:

“Nude or semi-nude images or videos produced by a young person of themselves engaging in erotic or sexual activity and intentionally shared by any electronic means.”

IWF did not have direct contact with any of the individuals depicted in the content assessed in the course of this Study. The findings of the Study are based solely on analysis of the content of the images and videos assessed. It is therefore not possible to extrapolate the circumstances of the individuals depicted at the time when the content was created and an examination of the persuasive influences or coercive measures which caused the young people to produce this sexual content is

¹ From April 2014 the IWF was granted the ability to search for child sexual content online rather than work only from public reports into the hotline.

² This refers to URLs which had been previously assessed by IWF as containing youth-produced sexual content. For avoidance of doubt all of the content assessed during the course of this Study was online at the time the data was collected.

³ “Youth-produced sexual content” is defined as “Nude or semi-nude images or videos produced by a young person of themselves engaging in erotic or sexual activity and intentionally shared by any electronic means”.

⁴ “Young person” is defined as “an individual assessed as being 20 years of age or younger”.

⁵ The IWF assess child sexual abuse imagery according to the categories detailed in the [Sentencing Council’s Sexual Offences Definitive Guideline](#). These are set out in full at Appendix B.

⁶ The 2012 study defined “self-generated sexual content” as “Nude or semi-nude images of a young person knowingly engaging in erotic or sexual activity”

therefore outside the scope of this Study. It is beyond dispute that the coercion of young people, particularly those within the younger age ranges captured within the Study, to produce and share sexual content online must be considered a form of sexual abuse. However we believe that our findings provide further evidence to support the typologies proposed by Wolak and Finkelhor in their paper “Sexting: A Typology” (2011)⁷ as we outline further below.

In several instances the time taken for children aged 15 years or younger to begin engaging in erotic or sexual activity was extremely short, even in cases where the content had been initially shared via websites which connect the user with a random stranger with whom the child would have had no previous interaction. This indicates a need for further research to identify potential changes in the nature of online grooming and risk factors which may make children vulnerable to responding so quickly to such approaches.

Whilst in some instances it was clear that the children depicted were aware and intended that the content they were creating should appear on public internet sites, all of the content assessed as depicting children aged 15 years or younger had apparently been harvested from its original upload location and collected on third party websites, meaning that control over its removal or onward distribution had been lost.

For ethical reasons, much of the research which has previously been carried out into the creation and distribution of sexual content by young people has largely focussed on those aged 11 years and above. However, this Study found that of the 3,803 images and videos assessed, 286 (7.5%) depicted children assessed as being 10 years old or younger. The findings of the Study highlight the need for further initiatives and awareness-raising campaigns aimed at younger children and their parents.

This paper also sets out the limitations on the Study and makes recommendations for further research which can be undertaken to expand upon and clarify the findings and to inform effective targeting of future educational initiatives relating to youth-produced sexual content. It is hoped that by raising awareness of this issue, a multi-agency approach can be taken to help protect children from the immediate and long-term effects of distributing youth-produced sexual content online.

Background

The global issue of the creation and distribution of youth-produced sexual content depicting young people is well-documented and has formed the subject of much recent research.

The research findings to date have varied widely as to the extent to which sexting occurs. Research carried out in the UK by University of Plymouth in partnership with South West Grid for Learning in 2009⁸ found that 40% of 11-18 year olds taking part in the study said they knew someone who had sent sexually explicit self-generated content via any electronic means, whilst research carried out in the United States by Pew Internet and American Life Project⁹ in the same year found that in a representative sample of cell-phone owning teens aged 12-17 years 4% had sent a sexually suggestive nude or nearly nude image by text and 15% had received one.

The popular term “sexting” is often used in the media to describe the phenomenon, however as noted by Lounsbury¹⁰ (2011) the lack of a consistent definition for what constitutes “sexting” (i.e. whether it refers to only content sent via a mobile phone or includes content sent by any electronic means, whether it includes text only content, whether the content may be merely sexually suggestive or must be sexually explicit) is one possible reason for the wide disparities in the findings of many studies which have been carried out to date.

⁷ Wolak, J and Finkelhor, D “Sexting: A Typology” http://www.unh.edu/ccrc/pdf/CV231_Sexting%20Typology%20Bulletin_4-6-11_revised.pdf

⁸ Sharing Personal Images and Videos Among Young People <http://www.blackpollscb.org.uk/contents/documents/sexting-detail.pdf>

⁹ Lenhart, A. (2009) ‘Teens and Sexting: How and why minor teens are sending sexually suggestive nude or nearly nude images via text messaging’. Pew Research Centre Report. <http://pewresearch.org/assets/pdf/teens-and-sexting.pdf>

¹⁰ Lounsbury, K, Mitchell, K and Finkelhor, D “The True Prevalence of Sexting” http://www.unh.edu/ccrc/pdf/Sexting%20Fact%20Sheet%204_29_11.pdf

Much of the research to date is qualitative in nature, focussing on young people's experience of creating, distributing and/or receiving such content from their peer group. Typically the research focusses on the prevalence and likelihood of the young people being questioned to create this content, their reasons for doing so and their attitudes to those members of their peer group who also participate (Ringrose et al 2012¹¹)

Where quantitative data exists, this is typically related to the extent to which children claim to have received sexual messages or encountered sexual content online (Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011)¹²).

In 2011, in their paper "Sexting: A Typology"¹³ Janis Wolak and David Finkelhor presented a typology of sexting episodes based on a review of 550 cases obtained from a survey of national law enforcement agencies in the United States of "youth-produced sexual images" – images created by minors of minors which would qualify as child pornography under applicable criminal statutes. This Study adopted similar thresholds by defining "nude or semi-nude images" as images which would meet IWF thresholds for action as child sexual abuse images under UK law where the individuals could be assessed as being under the age of 18 years, though as outlined below without verification of the age of the individuals depicted in the content within the 16-20 years age range no further action was taken to seek its investigation or removal.

Due to the ethical considerations attendant in carrying out such research, studies to date have focussed on speaking to those aged 11 years or above when examining the motivations or extent of children's creation and distribution of sexual content.

However there is a lack of data focussing on the online availability of the content itself, the individuals depicted, the methods of production of the content or the way in which it is being distributed.

Purpose of the study

The initial study carried out by IWF in 2012¹⁴ responded to the increase in availability of self-generated sexual content depicting young people and attempted to provide a snapshot of data to quantify the extent to which control over this content was lost once it had been posted online.

The results of the original study evidenced the messages delivered by child protection agencies regarding permanence of information on the internet and the risks inherent to young people in creating and distributing this type of content. The 2012 study is still widely quoted in the media and by stakeholders and commentators involved in the protection of young people online. At the time of publication it was proposed that the study be regularly repeated to enable trends in the distribution of self-generated sexual content featuring young people to be mapped and monitored.

The purpose of the Study was therefore to:

- a) Update the research to provide a current picture of the situation;
- b) Incorporate recommendations of the initial 2012 study, and
- c) Respond to specific queries raised by stakeholders relating to data which is not currently available but which IWF may be able to provide – for example with regard to the age and gender breakdown of the individuals depicted and the severity of the content.

¹¹ Ringrose et al, A Qualitative Study of children, young people and 'sexting'
<http://www.nspcc.org.uk/globalassets/documents/research-reports/qualitative-study-children-young-people-sexting-report.pdf>

¹² Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children. Full findings*. LSE, London: EU Kids Online. Available at <http://eprints.lse.ac.uk/33731/>
NB 2014 update for UK Livingstone, S., Haddon, L., Vincent, J., Mascheroni, G., and Ólafsson, K. (2014) *Net children go mobile: the UK report. A comparative report with findings from the UK 2010 survey by EU Kids Online*. Net Children Go Mobile, Milan, Italy. Available at <http://eprints.lse.ac.uk/57598/>

¹³ See Supra note 7

¹⁴ Study of Self Generated Sexually Explicit Images & Videos Featuring Young People Online
(https://www.iwf.org.uk/assets/media/resources/IWF%20study%20-%20self%20generated%20content%20online_Sept%202012.pdf)

Methodology

The data collection phase of the Study took place over a three month period between September and November 2014 and used a combination of proactively sourced content from search engines, historic IWF data and leads from public reports to locate “youth-produced sexual content” depicting “young people”. These terms are more precisely defined below.

Where the content was assessed as meeting these criteria, the image or video was assigned a unique report number and analysed in accordance with IWF’s standard procedures for actioning child sexual abuse content, capturing data about each image/video including image category¹⁵, site type, commerciality, hosting location, and the assessed age and gender of the individuals depicted.

Where it was possible to identify, information was captured regarding the suspected original provenance of the content and also the type of device which had been used to create the content – such as a webcam or mobile device.

A full list of the data captured for each of the images/videos assessed appears at Appendix A.

A quantitative analysis was then performed on the dataset, focussing on age, gender, category of severity, device used and site type/hosting information to establish trends or patterns emerging specifically from this data.

Definitions

To define the terms used for the purposes of this study:

- **“Youth-Produced Sexual Content”** is defined as **“Nude or semi-nude images or videos produced by a young person of themselves engaging in erotic or sexual activity and intentionally shared by any electronic means”**.

The IWF assesses child sexual abuse material according to the levels set out in the Sentencing Council’s Sexual Offences Definitive Guideline (reproduced in full at Appendix B). The use of the term “erotic” in this context was intended to reflect the IWF’s standard threshold for actioning content assessed as meeting Category C of the Guidelines in that the predominant focus of the image is on the naked genitalia of the person(s) depicted. “Sexual activity” sufficiently encapsulates the criteria for Categories A and B of the Guidelines.

IWF did not have direct contact with any of the individuals depicted in the content assessed in the course of this Study. The findings of the Study are based solely on analysis of the content of the images and videos assessed. It is therefore not possible to extrapolate the circumstances of the individuals depicted at the time when the content was created and an examination of the persuasive influences or coercive measures which caused the young people to produce this sexual content is therefore outside the scope of this Study. It is beyond dispute that the coercion of young people, particularly those within the younger age ranges captured within the Study, to produce and share sexual content online must be considered a form of sexual abuse.

- **“Young person”** is defined as **“an individual assessed as being 20 years of age or younger”**.

IWF’s standard categories for age assessment of victims depicted in child sexual abuse content are as follows:

- 0-2 years
- 3-6 years
- 7-10 years
- 11-13 years
- 14-15 years
- 16-17 years

¹⁵ The IWF assess child sexual abuse imagery according to the levels detailed in the [Sentencing Council’s Sexual Offences Definitive Guideline](#).

However, for the purposes of the Study, the upper age category was broadened to include young people assessed as being 16-20 years of age.

This broadened upper age range reflects one of the major challenges faced by the IWF in taking action regarding this type of content. Section 45(1) of the Sexual Offences Act 2003¹⁶ defines a child as anyone under the age of 18 years. In the course of their daily work, IWF Analysts are assessing content to attempt to establish whether the person depicted is under the age of 18.

However, particularly in relation to youth-produced content featuring young women, age assessment can be complicated by the fact that the young women depicted are usually pubescent and will often have attempted to appear more adult-looking. IWF must therefore err on the side of caution in taking action to takedown content in cases where age verification is not possible, even where there is a strong suspicion that the individuals depicted are under the age of 18 years. For the purposes of the Study it was therefore decided to broaden the age range to mitigate this.

Preliminary analysis of data

During the course of the Study, 3,803 images and videos were assessed as meeting the research criteria. The images and videos were hosted across 230 different websites.

On commencing analysis of the data it was immediately apparent that there were differences in the characteristics of the content depicting individuals in the 16-20 years age range and those assessed as being aged 15 years and younger. In relation to the younger age ranges these findings were particularly surprising. It was therefore decided to initially break down the data into two sets – the content assessed as depicting 16-20 year olds and the content assessed as depicting children aged 15 years and younger.

A more detailed analysis of the reports depicting children assessed as being aged 15 years or younger appears separately below.

Age

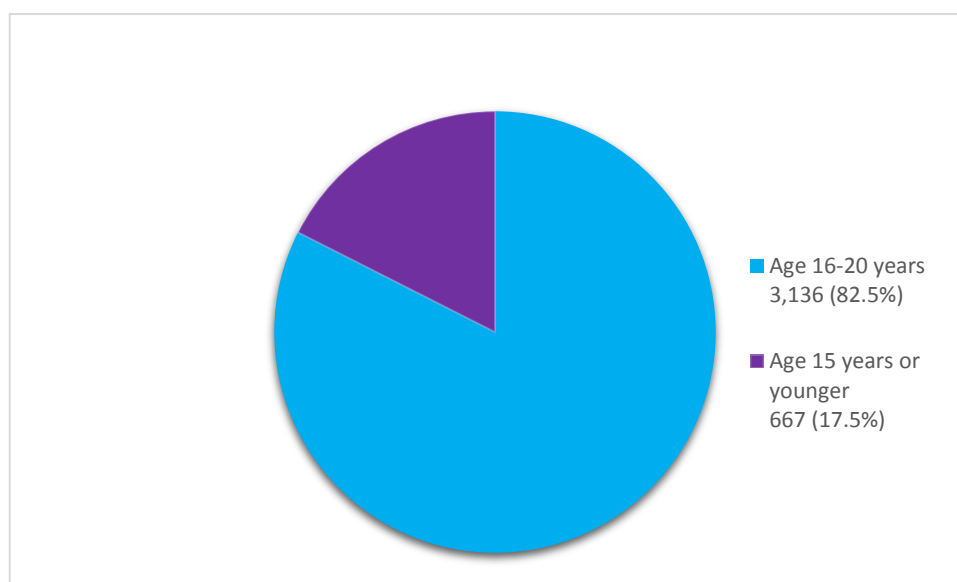


Figure 1 - Preliminary breakdown of content by age

¹⁶ Section 45(1) Sexual Offences Act 2003 <http://www.legislation.gov.uk/ukpga/2003/42/section/45>

Age (years)	No. of Reports	Overall %
16-17	3136	82.5%
15 and under	667	17.5%

Of the 3,803 images and videos assessed, 3,136 (82.5%) depicted individuals assessed as being 16-20 years of age. As outlined above, verification of age in the 16-17 years age range is problematic and as such other than collecting data in relation to this content no further action was taken to seek its removal or further investigation.

667 images and videos (17.5%) depicted children aged 15 years or younger and therefore met the criteria for action under IWF's procedures for removal of online child sexual abuse material.

Category

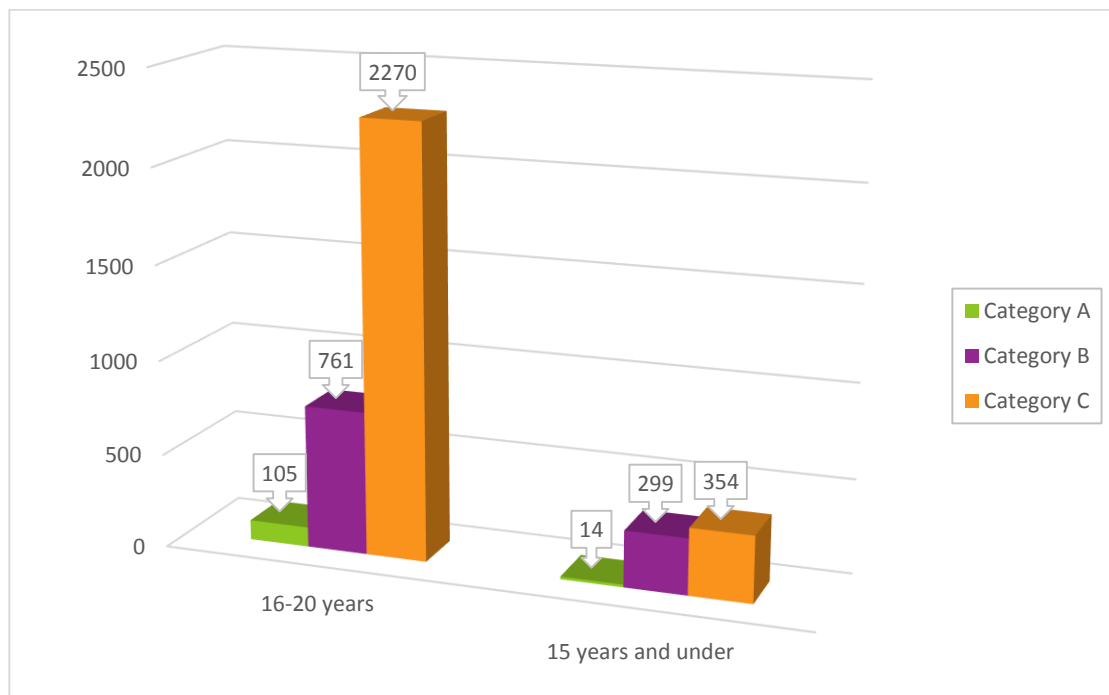


Figure 2 - Category of assessed content in each age range

Age	Category A	Category B	Category C	Total
16-20	105 (3.3%)	761 (24.3%)	2,270 (72.4%)	3,136
15 and under	14 (2.1%)	299 (44.8%)	354 (53.1%)	667

There are significant differences in the levels of severity of the content in the two age ranges.

72.4% of content depicting those in the 16-20 years age range was classified as Category C (no sexual activity but a predominant focus on the naked genitalia of the individuals depicted), whilst 53.1% of the content depicting those aged 15 years of younger was classified as Category C.

Only 27.6% of content in the 16-20 years age range was in Category B or A. This is in contrast to content depicting children aged 15 years or younger, with content assessed as Category B (where non-penetrative sexual activity was taking place) and Category A (images depicting penetrative sexual activity, sadism or bestiality) accounting for 46.9% of the total.

Gender

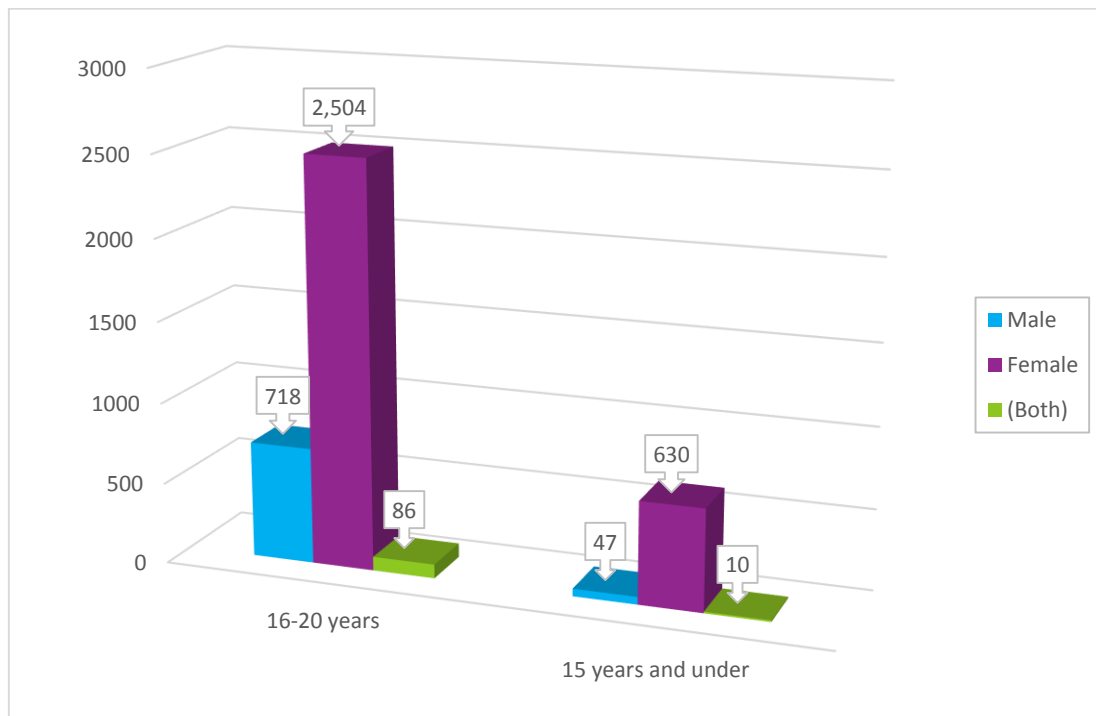


Figure 3 - Gender of individuals depicted in each age range

Age	Male	Female	[Both]
16-20	718	2,504	[86]
15 and under	47	630	[10]

Content assessed in both age ranges depicted more females than males. However, there are again significant differences between the age ranges. In the upper age range (16-20 years) 2,504 images and videos (77.7%) depicted females, whilst in the lower age range (15 years and under) 630 images and videos (93.1%) depicted females.

In total there were 96 instances in which the content depicted both males and females.

Site types

The content assessed as meeting the research criteria was located across 230 different domains.

The Site Type of each domain was categorised as in the table below. A full Glossary of the Site Types appears at Appendix C.

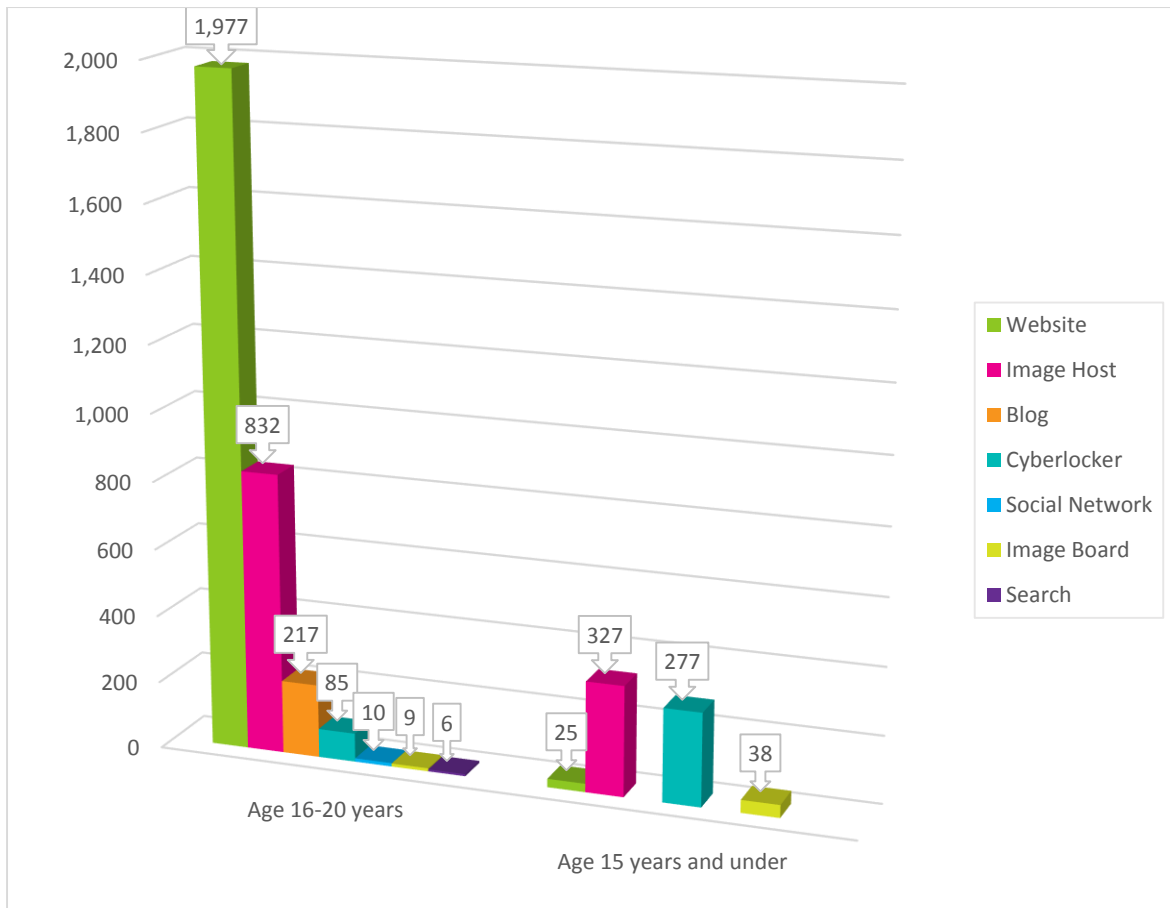


Figure 4 - Site type on which content was located in each age range

Site Type	Age 16-20 years	Age 15 years or younger
Website	1,977	25
Image Host	832	327
Cyberlocker	85	277
Blog	217	0
Image Board	9	38
Social Network	10	0
Search	6	0

There are notable differences between the distribution methods for content in the upper age range (16-20 years) and the lower age range (15 years or younger).

Of the 3,803 images and videos assessed, 2,002 (52.6%) appeared on a “Website”. This is simply defined as a traditional static site consisting of images and interlinked pages. Looking at the age breakdown, 1,977 of the images and videos on the site type “Website” were in the upper age range with only 25 assessed as depicting those aged 15 years or younger.

This finding is however not especially surprising, as given the criminal nature of sexual content clearly depicting children, the method of distribution is in many cases of a less public nature, to avoid the risk of detection and removal of the content.

Of the 230 domains, 65 were specifically dedicated to the collection and distribution of youth-produced sexual content, as indicated by the domain name which contained variants of the terms “selfie” or “sext” in conjunction with terms such as “young” or “teen”. Of the 2,002 images and videos appearing on “Websites”, 1,102 (55%) were located across these 65 dedicated domains.

The majority (90.6%) of the content depicting those aged 15 years or younger was being distributed via Image Host sites or Cyberlockers, with the URLs being posted on forums dedicated to distribution of sexual content depicting young people.

When analysing the availability of the content, 1.7% (64) of the images and videos were assessed as being commercially available. Of the content which was commercially available, 6 depicted children aged 15 years or younger which all appeared on the website of a specific well-known commercial distributor of child sexual abuse material.

Provenance of content

Of the 3,803 images and videos assessed during the course of the Study, 3,419 (89.9%) had apparently been harvested from their original upload location and were being redistributed via third party websites.

Across the age ranges, this equated to 100% of the content (667 images/videos) depicting those aged 15 years and younger and 87.8% of the content (2,752 images/videos) depicting those aged 16-20 years. In 372 instances, it was not possible to determine whether the content had been harvested from its original upload location and in 12 instances the content was assessed as appearing in its original upload location.

In a number of cases, whilst it was possible to deduce that the content had been harvested from its original upload location it was not possible to state which site the content originated from. For example, text on particular sites may claim to contain a round-up of recent content appearing on popular social networks but not list the sites from which the content had been taken. However, where it was possible to ascertain, the original provenance of the content assessed was captured. The suspected original provenance of the content was deduced in a number of ways, including:

- Branding embedded onto the content by the source website;
- The domain name or URL of the website on which the content was displayed, which featured the name of the source website;
- The filename of the image or video (where it may be a combination of the name of the source website and/or the username used by the individual depicted on the source website);
- Text appearing in conjunction with the content which indicated the source website.

Of the 3,803 images and videos assessed, 1,754 (46.1%) contained indications of the original provenance. These 1,754 images and videos appeared to have been harvested from 17 different services, including social networks, chat sites and mobile phone apps.

In many cases it was not possible to determine the geographical location of the individuals depicted. There were however a number of instances particularly in relation to video content whereby from items visible within the video, the regional accents of the individuals depicted, or in some cases because it was explicitly stated it was possible to identify the likely country where the individuals were located. Given the global nature of the internet, these locations were diverse. Whilst in some cases the individuals appeared to be located within the UK, most appeared to be located overseas.

In all cases where the content depicting children aged 15 years or younger provided clues to the identity or location of the children depicted, full details were passed to the Victim ID team at the National Crime Agency Child Exploitation and Online Protection Centre (NCA CEOP Command) for further investigation as appropriate.

Data relating to children aged 15 years or younger

Given IWF's specific remit in relation to child sexual abuse material online the more detailed analysis of data undertaken below focusses specifically on the 667 instances (17.5%) of content depicting children assessed as being 15 years of age or under, with comparison where appropriate to the data set from the upper age range.

Content which was identified during the course of the Study which was assessed as child sexual abuse material under IWF's thresholds for action was also separately processed for removal and investigation in accordance with IWF's standard processes for dealing with child sexual abuse material hosted anywhere in the world.

Age of children

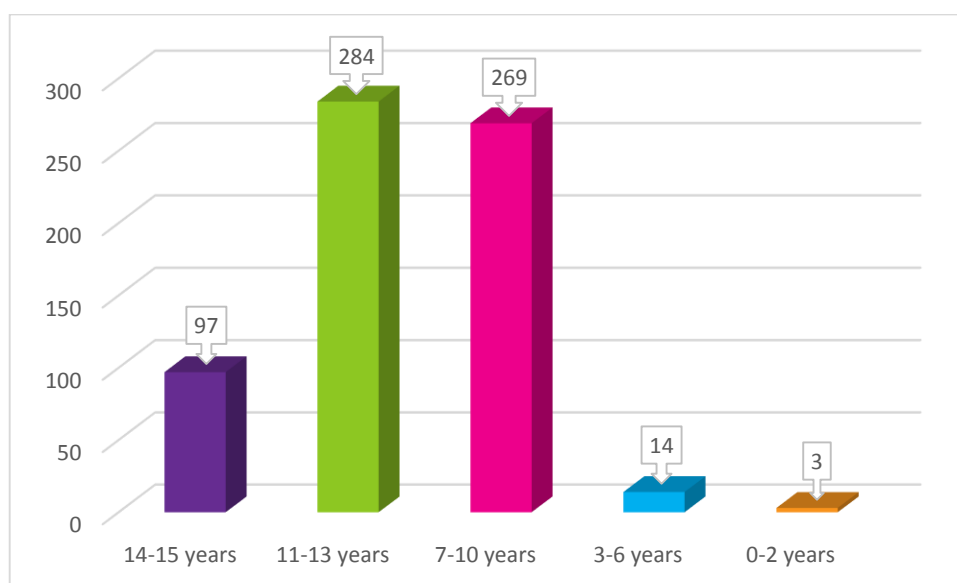


Figure 5 – Number of reports by age range

Age (years)	No. of Reports	%
14-15	97	14.5%
11-13	284	42.6%
7-10	269	40.3%
3-6	14	2.1%
0-2	3	0.4%

Of the 667 reports depicting children assessed as being 15 years of age or younger, 570 (85.5%) depicted children of 13 years or younger, with 286 (42.9%) being assessed as 10 years of age or younger.

It is of interest to note that in the 2012 study¹⁷ carried out by IWF, none of the images or videos assessed depicted individuals assessed as being 13 years of age or younger. The finding that such a high proportion of youth-produced sexual content assessed in the course of this Study depicted children aged 13 years or younger indicates that there may be a need for further research aimed at understanding the drivers for children to create and distribute such content and demonstrates a need

¹⁷ See supra note 14

for awareness raising campaigns aimed at younger age groups to highlight to younger children and their parents the risks which they are taking online.

Category

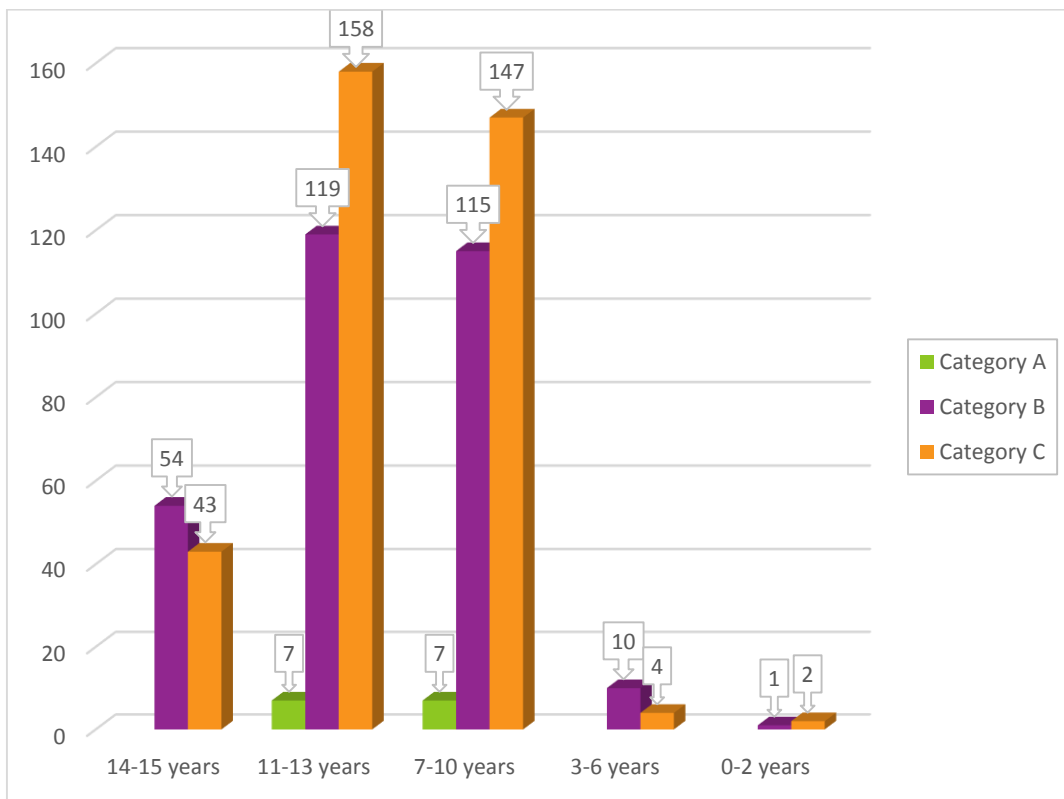


Figure 6 – Category of assessed content in each age range

Age	Category A	Category B	Category C
14-15	0	54	53
11-13	7	119	158
7-10	7	115	147
3-6	0	10	4
0-2	0	1	2

When analysing the severity category of the content by age, 46.9% of the content depicting those aged 15 years or younger was Category B or higher.

A particularly concerning finding is the severity level of content featuring children aged 10 years or younger, with 133 instances (19.9%) being assessed as Category B or higher and 7 instances of Category A content within the 7-10 years age range. Category A is the highest level of severity, depicting penetrative sexual activity, sadism or bestiality.

Gender

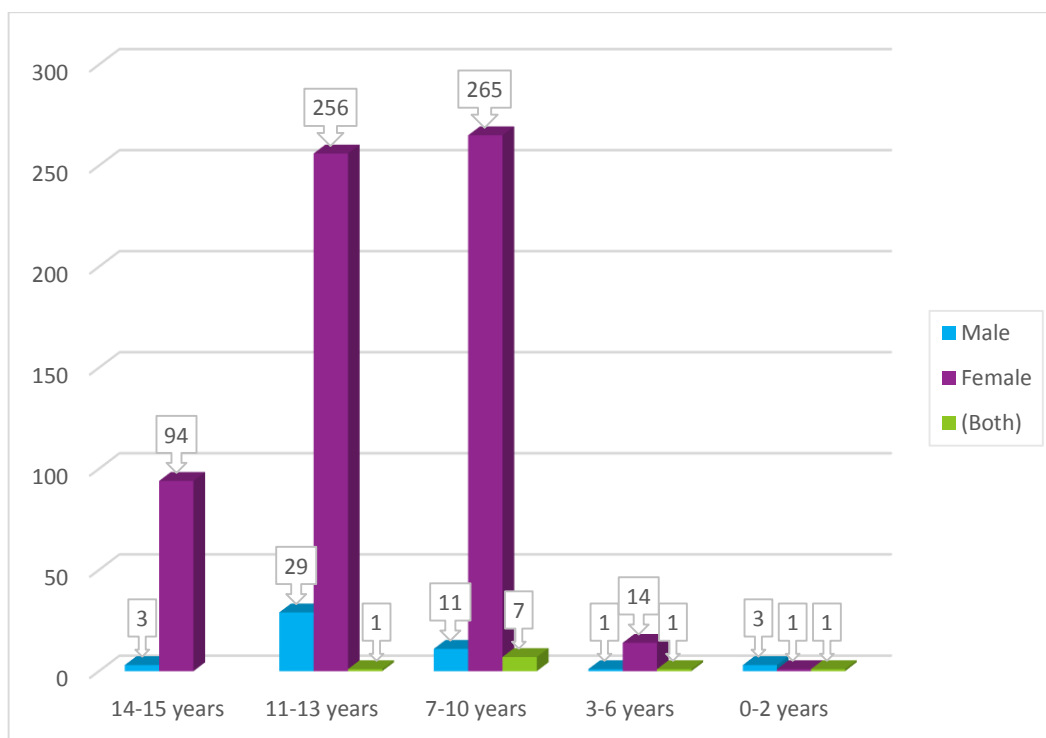


Figure 7 – Amount of assessed content depicting each gender by age range

Age	Male	Female	[Both]
14-15	3	94	0
11-13	29	256	1
7-10	11	265	7
3-6	1	14	1
0-2	3	1	1

The findings in relation to the gender of children in the content depicting children aged 15 years or younger are in stark contrast to the genders within the 16-20 years age range. Girls appeared in 93.1% of the content showing children aged 15 years or younger.

These findings cannot be extrapolated to indicate that more girls than boys appear in youth-produced sexual content featuring children aged 15 years or younger as a whole – rather they may provide an indication of the preference of those collecting and distributing this type of content on the open internet.

Lone Children

IWF's standard procedures for assessing age is that the data captured where one or more children of differing age groups appears relates to the lowest age group depicted in the content. For example, in the three cases which featured children assessed as being 0-2 years of age, the content also featured at least one older child assessed as being 7-10 years, apparently a sibling. Similarly, in nine of the images and videos assessed as Category B which depicted children aged 3-6, there was sexual interaction with an older child who was in each case assessed as being 15 years of age or under.

A detailed analysis was therefore undertaken to capture whether the child depicted was alone and in cases where multiple individuals were depicted in the content the age range of all those present was assessed and recorded.

Of the 667 reports depicting individuals aged 15 or younger, 568 children were alone in the image or video. The following table shows a breakdown of these lone children by age and category.

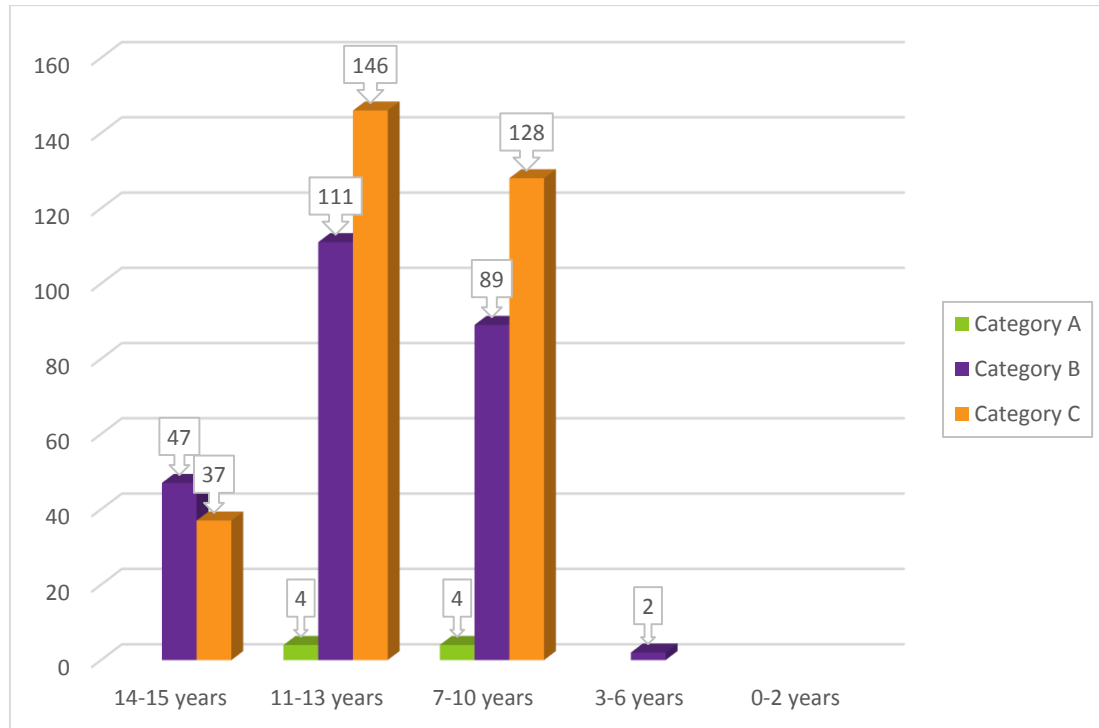


Figure 8 – Content featuring lone children in each category by age

Age of Lone Child	Category A	Category B	Category C
14-15	0	47	37
11-13	4	111	146
7-10	4	89	128
3-6	0	0	2
0-2	0	0	0

An analysis of the gender of the lone children shows that 538 were girls and 30 were boys.

Of the remaining 99 images and videos depicting multiple children, 19 also featured at least one older child assessed as being aged 15 years or younger. In 79 cases, the content depicted two or more children all assessed as being within the same age range. In only one case did the content depict a child of 15 years or younger with an individual assessed as being 16-20 years – this image also depicted an adult over 20 years of age.

Creation of the Content

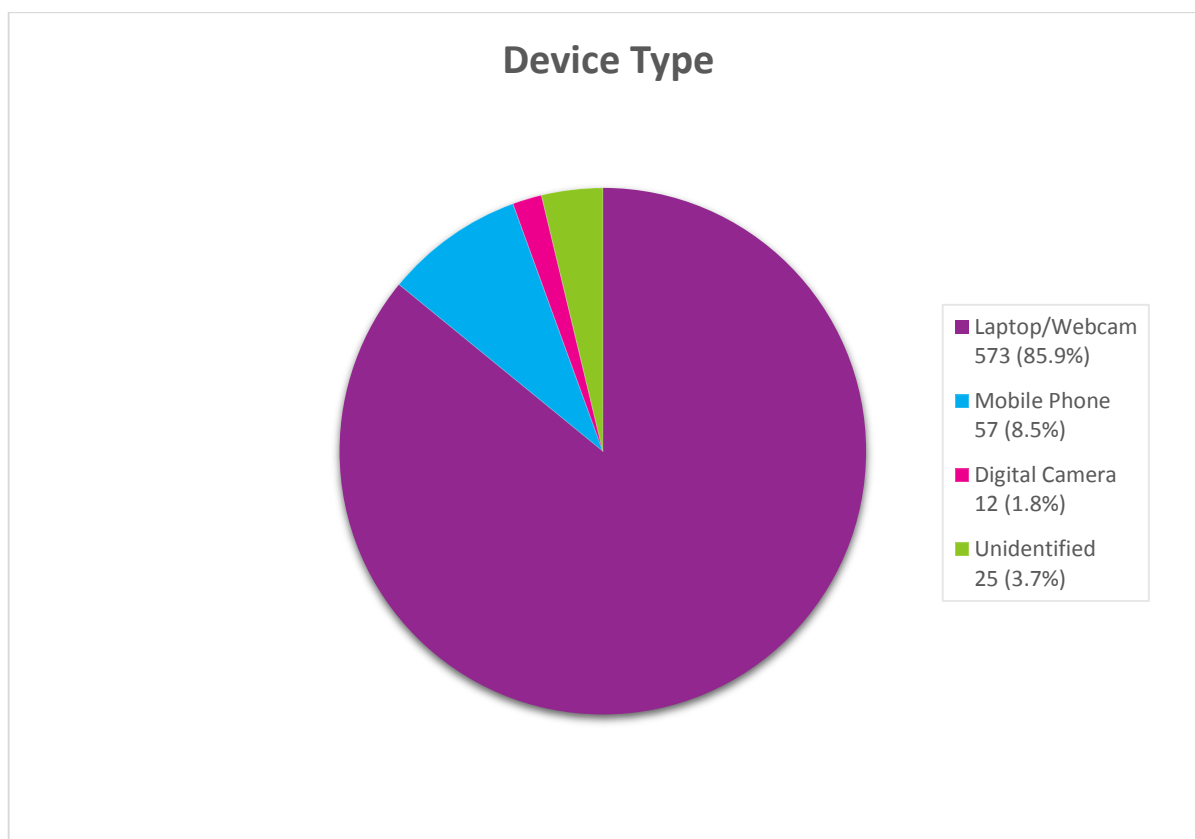


Figure 9 - Device used to create content

An interesting finding in relation to the content assessed as depicting those aged 15 years and younger was the device which was used to create the image or video. Traditional definitions of “sexting” and “self-generated sexual content” have focussed on the use of mobile devices such as phones as being the primary method for creation and onward distribution of the content.

However, an analysis of the devices used to create the content depicting children aged 15 years or under showed that 573 (85.9%) of the images and videos had been created using a webcam. This could be ascertained as the children depicted could often be seen moving their laptop or typing on the laptop keyboard whilst the content was being created.

In only 57 cases was the content assessed as having been created using a mobile phone and in these cases, the phone was often visible in the image or video – for example, the content had been created in front of a mirror.

In 12 cases, the content had been created using a traditional digital camera. In 25 cases, it was not possible to make an assessment as to the device used to capture the image or video.

Conclusions

The finding that 667 (17.5%) of the images and videos assessed depicted children aged 15 years and younger, with 286 (42.9%) of these depicting children assessed as being 10 years and younger indicates a disturbing trend for younger children to be producing sexually explicit content which is being distributed online.

Nearly half (46.9%) of the content depicting those aged 15 years or younger was assessed as being Category B or A under the Guidelines laid down by the UK Sentencing Guideline Council. It is hoped that the findings of the Study can be used to evidence the importance of further awareness-raising amongst younger children and all stakeholders involved in online child protection of the risks faced by children engaging in this type of highly sexualised behaviour online.

The finding that 85.9% of the content depicting children aged 15 years and younger was created using a webcam in a home environment, most commonly a bedroom or bathroom, is surprising as it challenges the traditional notion that youth-produced sexual content is created and distributed via mobile phone or other mobile device.

Whilst we are aware that some of the material assessed had been in existence for as long as three years, there were also numerous instances where the content had apparently been created within the past 6-12 months. It is possible that even with the rise in usage of mobile devices such as smartphones and tablets, the larger screen and higher processing powers offered by devices such as laptops are the reason behind the popular usage of webcam. This finding may be of use to stakeholders such as child protection agencies in understanding more about how youth-produced sexual content is being created and distributed by young people to better inform future research or awareness raising initiatives.

Of particular concern is that the young people depicted took no steps to conceal their identity or location, even in many cases using their real names. In some instances, it is apparent that this content is being knowingly created to appear on public websites, however as 100% of the content depicting children aged 15 years or younger had been harvested from its original upload location and further distributed via third party websites, control over its removal or onward distribution has been lost.

The findings in relation to content depicting those aged 15 years or younger which was assessed in this Study and further detailed in the Case Studies appears to provide support for the typologies of youth-produced sexual images as outlined by Wolak and Finkelhor in "Sexting: A Typology"¹⁸ which noted:

- "Aggravated" incidents of youth-produced sexual content which involved criminal or abusive elements such as adult involvement, criminal or abusive behaviour by minors including sexual abuse, or extortion or distribution without the consent of the minor depicted); and
- "Experimental" incidents of youth-produced sexual content in which youths created and exchanged sexual imagery with boy/girlfriends or to create a romantic interest or for reasons such as attention-seeking but where there was no criminal behaviour beyond the creation or sending of the images and no lack of willing participation by the youth pictured. Pre-adolescent children were included in the typology "Experimental incident, other" which notes that the children aged 9 years and under in those cases did not appear to have sexual motives.

Whilst recognising the importance of allowing young people some freedom to take risks in order to build resilience as identified by Livingstone et al¹⁹ in the EU Kids Online project, the permanence of information once online means the possible long term consequences of such behaviour must also be an important consideration. The production or distribution of youth-produced sexual content leaves the young people depicted vulnerable not only to potential negative attention from those within their peer group but also to recurring revictimisation by the individuals who are collecting and distributing this type of material across the wider internet.

Limitations on the study

The findings of the study are based on a snapshot of data collected over a three month period and it is not possible to extrapolate from this data the exact figures relating to the amount of youth-produced sexual content in existence online or the extent to which these findings may proportionately relate to that whole.

Whilst in certain instances information was available within the images and videos which may provide indications in particular cases, there were a number of questions relating to youth-produced sexual content which fell outside the scope of the Study.

¹⁸ See supra note 7

¹⁹ See supra note 12

These questions include:

- The general motivations of young people in creating and distributing sexual content, particularly the extent to which they had been coerced to do so;
- The extent to which the young people depicted had given permission for the creation and distribution of the content;
- Whether the young people were in all cases aware that a permanent recording of their activity was being made.

IWF does not generally have direct contact with individuals depicted in the content it is called upon to assess. As such, all findings, conclusions and observations in the Study are based solely on analysis of the content of the images and videos assessed during the course of the Study using IWF's standard processes for assessing potential child sexual abuse material.

Recommendations for future research

This study captured a snapshot of the distribution of youth-produced sexual content featuring young people during a three month period from September – November 2014.

It is recommended that this study be repeated on an annual basis to map distribution trends relating to this type of content.

It is also recommended that any future studies by IWF be expanded to incorporate some or all of the following research questions:

- Using hash²⁰ technology, can it be established to what extent the same youth-produced images and videos are duplicated across multiple third party websites?
- To what extent is it possible to identify when each image and/or video was created to identify any emergent trends in distribution of the content?
- Where the same youth-produced images and videos are duplicated across multiple third party websites, is it possible to map the journey taken by the content to indicate possible strategies for intervention and disruption of its distribution?

Additionally, whilst such future research is outside the remit of IWF, it is proposed that an analysis of transcripts from youth-produced sexual content featuring children could be utilised by researchers and stakeholders working with young people to contribute to an understanding of possible drivers for young people in creating this type of content. The use of such confirmed case studies may also be of benefit when implementing awareness raising initiatives or in instigating a more open dialogue with young people about the issue of youth-produced sexual content by providing abstract rather than personal examples for discussion.

It is also recommended that further research be undertaken to attempt to establish the various motivations behind the creation of youth-produced sexual content, such as peer pressure or grooming by those with a sexual interest in children. Such research could also include an examination of specific vulnerabilities which may at different times or on a short term basis cause children to be more susceptible to coercion to produce and share sexually explicit content online and inform strategies for intervention by all stakeholders involved in preventing child sexual exploitation online and assist young people in building resilience.

²⁰ A "hash" is a unique string of characters generated from the binary data of a picture or video and/or biometric information within a picture. Hashing algorithms such as Microsoft's photoDNA ensure images can be identified using the hash even if the original image has been resized or altered. (<http://news.microsoft.com/presskits/photodna/>)

References

- Dr Andy Phippen, University of Plymouth (2009) - Sharing Personal Images and Videos Among Young People [http://www.blackpoolscb.org.uk/contents/documents/sexting-detail.pdf](http://www.blackpoolscb.org.uk/contents/documents sexting-detail.pdf)
- Lenhart, A. (2009) 'Teens and Sexting: How and why minor teens are sending sexually suggestive nude or nearly nude images via text messaging'. Pew Research Centre Report. <http://pewresearch.org/assets/pdf/teens-and-sexting.pdf>
- Ringrose et al (2012), A Qualitative Study of children, young people and 'sexting' <http://www.nspcc.org.uk/globalassets/documents/research-reports/qualitative-study-children-young-people-sexting-report.pdf>
- Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children. Full findings*. LSE, London: EU Kids Online. Available at <http://eprints.lse.ac.uk/33731/>
- NB 2014 update for UK Livingstone, S., Haddon, L., Vincent, J., Mascheroni, G., and Ólafsson, K. (2014) *Net children go mobile: the UK report. A comparative report with findings from the UK 2010 survey by EU Kids Online*. Net Children Go Mobile, Milan, Italy. Available at <http://eprints.lse.ac.uk/57598/>
- IWF Study of Self-Generated Sexually Explicit Images & Videos Featuring Young People Online (2012) (https://www.iwf.org.uk/assets/media/resources/IWF%20study%20-%20self%20generated%20content%20online_Sept%202012.pdf)
- Lounsbury, K, Mitchell, K and Finkelhor, D "The True Prevalence of Sexting" (2011) http://www.unh.edu/ccrc/pdf/Sexting%20Fact%20Sheet%204_29_11.pdf
- Wolak, J and Finkelhor, D "Sexting: A Typology" (2011) http://www.unh.edu/ccrc/pdf/CV231_Sexting%20Typology%20Bulletin_4-6-11_revised.pdf

Further Resources

- Alisdair A. Gillespie (2013) Adolescents, Sexting and Human Rights (<http://www.corteidh.or.cr/tablas/r32277.pdf>)
- Boyd, D. (2011) 'Teen Sexting and Its Impact on the Tech Industry'. Read Write Web 2WAY Conference 2011. June 13, 2011 <http://www.danah.org/papers/talks/2011/RWW2011.html>
- Calvert, C Sex, Cell Phones, Privacy, And The First Amendment: When Children Become Child Pornographers And The Lolita Effect Undermines The Law (2010) <http://scholarship.law.edu/cgi/viewcontent.cgi?article=1446&context=commlaw>
- Döring, N. (2014). Consensual sexting among adolescents: Risk prevention through abstinence education or safer sexting?. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 8(1), article 9. doi: [10.5817/CP2014-1-9](https://doi.org/10.5817/CP2014-1-9) (<http://www.cyberpsychology.eu/view.php?cisloclanku=2014031401&article=9>)
- European Online Grooming Project (2012) <http://www.europeanonlinegroomingproject.com/wp-content/uploads/European-Online-Grooming-Project-Final-Report.pdf>
- Julia Halloran McLaughlin (2010). "Crime and Punishment: Teen Sexting in Context" ExpressO Available at: http://works.bepress.com/julia_mclaughlin/1
- Kathy Martinez-Prather & Donna M. Vandive (2014) Sexting among Teenagers in the United States: A Retrospective Analysis of Identifying Motivating Factors, Potential Targets, and the Role of a Capable Guardian <http://www.cybercrimejournal.com/pratherVandiverijcc2014vol8issue1.pdf>

Kimberly J. Mitchell, PhD, David Finkelhor, PhD, Lisa M. Jones, PhD, and Janis Wolak, J (2011) Prevalence and Characteristics of Youth Sexting: A National Study <http://unhinfo.unh.edu/ccrc/pdf/CV237.pdf>

Klettke, B, D Halford, and D Mellor. 2014. "Sexting prevalence and correlates: A systematic literature review." *Clinical Psychology Review* , 34, 44-53 <https://www.deepdyve.com/lp/elsevier/sexting-prevalence-and-correlates-a-systematic-literature-review-z85VnrMqNQ>

Kopecky, K (2011) Sexting among Czech Preadolescents and Adolescents http://www.researchgate.net/publication/236019455_Sexting_among_Czech_Preadolescents_and_Adolescents

Livingstone, Sonia and Görzig, Anke (2014) When adolescents receive sexual messages on the internet: explaining experiences of risk and harm. *Computers in Human Behavior*, 33 . pp. 8-15. ISSN 0747-5632 DOI: 10.1016/j.chb.2013.12.021 http://eprints.lse.ac.uk/55630/1/Livingstone_Goerzig_When-adolescents-receive-sexual-messages-on-the-internet_2014.pdf

Mediasmarts, Sexuality and Romantic Relationships in a Digital Age (2014) http://mediasmarts.ca/sites/mediasmarts/files/pdfs/publication-report/full/YCWVIII_Sexuality_Romantic_Relationships_Digital_Age_FullReport_0.pdf

NSPCC Share Aware campaign http://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/share-aware/?utm_source=google&utm_medium=cpc&utm_campaign=shareaware2014&utm_term=shareaware&gclid=CNiuid3Aw8MCFUInfAod_mMAcA&gclid=ds

Self-Produced Images Risk Taking Online (SPIRTO) Quantitative analysis of identified children data (2014) http://www.spirto.health.ed.ac.uk/download/website_files/SPIRTO_Report_Quantative_Analysis_April_2014.pdf

Temple JR, Paul JA, van den Berg P, Le VD, McElhany A, Temple BW. Teen sexting and its association with sexual behaviors. *Archives of pediatrics & adolescent medicine*. 2012;166(9):828-833. doi:10.1001/archpediatrics.2012.835. (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3626288/>)

Walker, Shelley, Lena Sanci, and Meredith Temple-Smith. 2011. "Sexting and young people." *Youth Studies Australia*, (<http://journals.sfu.ca/ysa/index.php/YSA/article/viewFile/129/145>)

Virtual Global Taskforce Environmental Scan 2012 <http://www.virtualglobaltaskforce.com/wp-content/uploads/2013/05/VGT-Environmental-Scan.pdf>

Appendix A

Full List of Data Types Captured

Date/Time Assessed

Content URL

URL type

IP address

Netname

Hosting country

Netblock information

Domain registration information

Content type

Availability of site

Site type

Site purpose (Commercial/Non-commercial)

Payment information

Category of content

Age of individuals depicted

Gender of individuals depicted

Ethnicity of individuals depicted

Appendix B

Sentencing Council's Sexual Offences Definitive Guideline.

The section on Indecent Photographs of Children (page 75) outlines the different categories of child sexual abuse imagery:

- | | |
|------------|---|
| Category A | Images involving penetrative sexual activity; images involving sexual activity with an animal or sadism |
| Category B | Images involving non-penetrative sexual activity |
| Category C | Other indecent images not falling within categories A or B |

Appendix C

Glossary of Site Types

Blog

A blog (abbreviation of web log) is a discussion or informational site and consists of discrete posts usually displayed in reverse chronological order. A typical blog combines text, images, links, web pages and other media related to its topic.

Cyberlocker

A file hosting service, cloud storage service or other online file storage provider. Cyberlockers are internet hosting services specifically designed to host users' files.

Domain

A collection of resources (such as webpages) which are all organised under a single name. For example, the webpages www.iwf.org.uk/report, www.iwf.org.uk/hotline and www.iwf.org.uk/members are all part of the same domain – namely www.iwf.org.uk.

Image Host

A service which allows users to upload images which are then available as a unique URL. This can then be used to make inline links or embed on other websites, forums, and social networking sites.

Image Board

A type of internet forum which operates mostly via posting images. Anonymity is considered to be one of the advantages of an imageboard. There are two primary types of imageboard software packages namely Futaba and Danbooru-style boards.

Search provider

A search facility or service which does not usually host the result of the search, although caching is often employed for videos and images.

Social Network

An online service, platform or site that focuses on facilitating the building of social networks among people who for example share interests, activities, backgrounds or real life connections. It allows users to share ideas, activities, events and interests within their individual networks.

Website

A traditional static site consisting of images and interlinked pages hosted on a single domain.