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An exploration of the risk factors associated with online sexual grooming and professionals' experiences of looked after children's internet use.

Michelle Sharp

THE UNIVERSITY
of EDINBURGH

Doctorate in Clinical Psychology
The University of Edinburgh May 2018.

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- Received ethical approval from an approved external body and registered this application and confirmation of approval with the School of Health in Social Science's Ethical Committee

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Dedications

This thesis is dedicated to my indescribably supportive husband and family. Without your unwavering support, love, kindness and encouragement this would not have been achievable. Thank you for always believing in me and inspiring me to persevere when thesis was all consuming and the end seemed so far away. You made this possible, thank you from the very bottom of my heart, I love you all.

Craig, here is to the beginning of the next chapter, let's make it a memorable one.

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Thesis Abstract

The internet is well saturated within today's society raising anxieties for parents, carers and professionals in regard to the potential risks that children and young people could be exposed to online and how best to safeguard them from these. The risk factors associated with online sexual grooming have been explored within the existing literature although not in a systematic manner. Therefore, a systematic review was conducted to explore the characteristics and risk factors that enhance children and young people's vulnerability to online sexual grooming. Findings revealed a number of significant associations and a complex interplay between the individual, community, their relationships and cultural factors.

Previous research has demonstrated inconsistencies in regard to whether looked after children are more at risk online than their peers. Limited research exists which explores professionals' experiences of managing their online safeguarding responsibilities. The second study used a Grounded Theory method to explore professionals' experience of looked after children's online use and how they balance their safeguarding responsibilities whilst supporting these young people to access online opportunities. The impact that safeguarding policies and practices have on looked after children's ability to access these opportunities and develop resilience was also explored. It was revealed that although professionals identified that looked after children are vulnerable online, they are perhaps not any more so than some of their peers. Restrictive practices were highlighted to impact on these young people's access to online benefits and professionals' opportunities to educate and safeguard. This was discussed in the context of preparing these young people for life post care.

These findings should be considered by parents, carers and professionals that have online safeguarding responsibilities and an influential role in the development of online policy or provision.

Lay Summary

This thesis is a portfolio consisting of two journals as part of a requirement for the Doctorate in Clinical Psychology. The first journal is a systematic review exploring the risks factors that are associated with children and adolescent's vulnerability to online sexual grooming. The second journal is an empirical paper exploring professionals' experiences of looked after children's internet use, how they manage both the risks and opportunities associated with this and whether their monitoring strategies impact on these young people's opportunities to develop resilience and benefit from the online environment. Findings from the initial paper highlight a number of risk factors that should be considered by both parents and professionals in terms of identifying those who are at greater risk online and which risk factors to target when considering safeguarding responsibilities. The second paper highlights the impact that restrictive practices can have on young people's access to online benefits and on their opportunities to develop resilience. It is suggested that these findings would be informative for those with corporate parenting responsibilities when considering the future of online monitoring within residential accommodation. Both papers have been written in accordance with submission guidelines for the Journal of Computers in Human Behaviour.

A systematic review of the risk factors that increase children and adolescent's vulnerability to experiencing online sexual grooming.

Michelle Sharp and Dr Ethel Quayle

Michelle Sharp, School of Health in Social Science, University of Edinburgh, Scotland, Medical School, Teviot Place, Edinburgh, EH8 9AG, Scotland and NHS Grampian, Child and Adolescent Mental Health Service, The Rowan Centre, Elgin, IV30 6GQ, Scotland

Dr Ethel Quayle, School of Health in Social Science, University of Edinburgh, Scotland, Medical School, Teviot Place, Edinburgh, EH8 9AG, Scotland

Corresponding authors email address: michelle.sharp4@nhs.net

Produced in accordance with submission guidelines for Computers in Human Behaviour (see Appendix A.1)

Abstract

Existing research has explored risk factors that increase vulnerability to online sexual grooming suggesting a complex interplay of factors exists. While informative these are not systematic reviews. This study aimed to systematically explore research on the risk factors and characteristics that enhance children and adolescent's vulnerability to online sexual grooming. Eight data bases were searched for quantitative, peer reviewed, English-language papers published between 2000-2018, which sampled children under 18 and clearly defined grooming and proposed risk factors. 12 studies met the inclusion criteria. Significant associations were reported: gender, age, depressive symptomology, offline victimisation, level of education, parental education level, single parent family, ethnicity, online activity and behaviour, offline behaviours and absence of online monitoring. However, additional research is required to further consolidate a number of these findings. Findings suggest that a complex interplay exists between the individual, their relationships, community and culture, which is in line with the offline grooming literature although some technology specific risk factors have been highlighted. Consideration should be given to these findings by professionals, parents and carers and those that influence policy and practice.

Keywords: *Child, adolescents, online grooming, online sexual solicitation*

1. Introduction

The relationship between vulnerability and offline risk factors has been extensively studied (Dixon, Browne, & Hamilton-Giachritsis, 2009; Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013). This body of research generally concludes that risk factors are not experienced in isolation (Sameroff, Gutman, & Peck, 2003) and demonstrate a complicated interaction between the individual, their relationships, community and cultural factors (Hamilton-Giachritsis, Peixoto, & Melo, 2011). Although it has been presumed that children who are considered vulnerable to risk offline are likely to be vulnerable online (Wachs, Wolf, & Pan, 2012; Ybarra, Mitchell, Finkelhor, & Wolak, 2007), Livingstone and Palmer (2012) proposed that this is not a simple linear relationship. They also suggested that some young people who may not appear to be vulnerable offline may actually be considered at serious risk of harm online. This is in line with research exploring risk factors for offline abuse which implies that no single risk factor is recognised as a stimulus for abuse, rather a suggested interaction between various factors and the absence of protective factors increase vulnerability (Masten & Coatsworth, 1998).

Although it has been reported that research exploring children and young people's vulnerabilities to online grooming is limited (Whittle et al., 2013), a number of psychological, social and emotional risk factors for online grooming have been identified. These risk factors include depression, low self-esteem, ethnicity, high levels of internet access, online risk-taking behaviour, single parent families, difficult home environment and lack of parental monitoring (Baumgartner, Valkenburg, & Peter, 2010; Dombrowski, LeMasney, Ahia, & Dickson, 2004; Webster et al., 2012; Mitchell, Ybarra, & Finkelhor, 2007; Olson, Daggs, Ellevold, & Rogers, 2007; Pereda, Guilera, Forns, & Gomez-Benito, 2009; So & Bodanovskaya, 2012). In terms of individual differences, females are often found to be at greater risk online

than males (Baumgartner et al., 2010; Bra, 2007; Wolak, Finkehor, Mitchell, & Ybarra, 2008), however this finding is not consistent across the research (Rice et al., 2015). It is likely that there is an under representation of male victimisation within the existing literature as a consequence of stigma and reliance on self-report methods. However, recent research suggests that there is an under reporting of online sexual grooming in general, which is hypothesised to be as a consequence of children or young people not understanding the illegality of the experience or developmentally being unable to report it (May-Chahal, Palmer, Dodds, & Milan, 2018). Additionally, males who are homo-sexual, confused or uncertain in regard to their sexuality have been reported to be at greater risk of online sexual grooming as a consequence of their insecurities and sexual confusion (UK Council for Child Internet Safety (UKCCIS: 2012); Wolak et al., 2008). It has also been proposed that although males are more likely to engage in online risky behaviour and subsequently may be more likely to be exposed to online experiences that would be considered harmful, females are more likely to report experiences of online distress (Livingstone & Haddon, 2009). Therefore, it is important to consider whether research is reporting on the occurrence of an incident or the psychological and emotional consequence of this. However, both may have negative consequences for the young people and it is important to recognise that this psychological distress may be being played out in different ways. Consideration should be given to these possible gender differences when considering how to access, support and safeguard these young people.

Additionally, there is a breadth of research highlighting a developmental association with experiences of risk, indicating that adolescents are at greater risk of online sexual solicitation (Baumgartner et al., 2010; Finkelhor, Ormand, Turner, & Holt, 2009; Quayle, Jonsson, & Loof, 2012; Wolak et al., 2008). This may be the result of their presumed ‘compliant’ participation in online sexual activities (Quayle, 2017), age appropriate sexual curiosity and higher levels of online communication (Munro, 2011), relationship seeking

and sexual experimentation (Quayle et al., 2012), or perhaps a combination of social, cognitive and biological factors. It is also important to consider that what is perceived as inappropriate online behaviour may vary across generations (May-Chahal, Palmer, Dodds, & Milan, 2018) and that perhaps the online environment does not provide additional risk, but rather an additional platform for behaviours that are considered risky to be explored (May-Chahal et al., 2018).

Online grooming has been defined differently across research studies, with some research synonymously using the terms ‘online grooming’ and ‘online sexual solicitation’ although distinct difference between the two exist (Quayle, 2017). Wolak, Mitchell and Finkelhor (2006) define online sexual solicitation as “requests of youth to engage in sexual activities or sexual talk or give personal sexual information that were unwanted or, whether wanted or not, were made by an adult” (p. 3). They further define aggressive sexual solicitation as “involving offline contact with the perpetrator through regular mail, by telephone, or in person or attempts or requests for offline contact” (Wolak et al., 2006, p 3). An additional definition has been proposed by Craven, Brown and Gilchrist (2006) which refers to the process of preparing a child, significant adults and the environment for child abuse, which would be interpreted to apply to both the online and offline environment. Definitions also vary at an international level for example the Canadian legal system refers to ‘Luring’ as communicating “via a “computer system” with a person under a certain age, or a person whom the accused believes to be under a certain age, for the purpose of facilitating the commission of certain sexual offences in relation to children or child abduction” (Department of Justice, 2002). However, in 2017 a new offence of ‘sexual communication with a child’ was passed in the UK which relates to anyone over the age of 18 intentionally communicating with a child under 16 “where the person acts for a sexual purpose and the communication is sexual or intended to elicit a sexual response” (Gov.uk, 2017). Definitions may vary within countries as well as at an international level, which further makes difficult comparisons

across studies (May-Chahal et al., 2018). Subsequently, it is important to consider research from other countries and the translation of these findings with caution and this highlights a need for international consensus in regard to the terminology that is used within the research and at policy level. Additionally, a great deal of the research in this area has focused on 'unwanted' sexual advances which may introduce bias. This definition fails to consider those online advances that were initially perceived to be consensual by the young person but subsequently perceived as a negative experience (Sklenarova, Schulz, Schuhmann, Osterheider, & Neutze, 2017). It also fails to consider those experiences that were thought to be 'wanted' due to perceived lack of love or attention or prior experience of abuse (Mitchell et al., 2007; Wolak, Finkelhor, Mitchell, & Ybarra, 2010).

Whittle et al. (2013) conducted a thematic review of young people's vulnerabilities to online grooming in the context of Bronfenbrenner's (1979) ecology of human development: a system of interdependent environments that exert influence directly and indirectly on the child's experience. Although informative this research was not systematic, and thus further research exploring this area would be beneficial. Additionally, in response to the increase in online grooming and the saturation of internet access within society there is a need to fully comprehend the risk factors that are associated with this online offence in order to identify which risk factors should be targeted to reduce potential vulnerabilities. These may contribute to safe guarding policy formation and provision, legal frameworks and identify gaps for further research.

2. Method

The protocol for this study can be viewed in appendix A.2. The objectives of this review were to:

- Systematically search for research studies.
- Collect empirical data on vulnerability and risk factors associated with online sexual grooming experiences.
- Critically analyse and compare the findings.
- Discuss findings in the context of existing literature, informing future research, policy, legislation and practice.

2.1. Initial Search

The methodology of this review was informed by the Centre for Reviews and Dissemination (CRD), The University of York (2009) guidance. An initial search was completed of the Cochrane Database of Systematic Reviews (CDSR), PROSPERO the International prospective register of systematic reviews, the Campbell Collaboration, the Database of Abstracts of Reviews of Effects (DARE) and the general literature to explore whether an existing systematic review of this area existed. This search indicated that to date there did not appear to be a systematic review of this question.

2.2. Database Search

Search terms were devised based on a scoping review of keywords used within the relevant literature and discussion with the university librarian. OVID interface was used to search for articles published in EMBASE (1980-current), PsycINFO (1806- current), Ovid Medline (1946- current) Epub Ahead of Print, In-Process & other Non-Indexed Citations, Ovid Medline® Daily and Ovid Medline® 1946- present). The following search terms were

used: (Child* OR Adolesc* OR Youth* or Schoolchild* OR Teen* OR Young person* OR Young people) AND (Online OR Internet OR Website*) AND (Groom* OR Sex* Solic* OR Lur* OR Cybersolicitation*). The proximity command ADJ5 was employed so that any words within the 2nd and 3rd string of search terms appeared within 5 words of each other, although could appear in any order. Additional searches were conducted of the following databases; Applied Social Sciences Index and Abstracts (ASSIA; 1987 - current), Social Services Abstracts (1979-current), ERIC (1966-current), and CINAHL (Cumulative Index of Nursing and Allied Health Literature; 1937-current) using the following search terms (Child* OR Adolsc* OR Youth* OR Teen* OR Young person* OR Young people) AND (Online OR Internet OR Website*) AND (Groom* OR Sex* Solic* OR Lur* OR Cybersolicitation*). ProQuest Dissertations and Theses was searched using the same search terms and relevant papers considered for inclusion.

2.3. Definition

There is no clear consistent definition of online sexual grooming shared within the literature. Wolak et al. (2006) defined online sexual solicitation as "requests of youth to engage in sexual activities or sexual talk or give personal sexual information that were unwanted or, whether wanted or not, were made by an adult" (p. 3). This definition seems to have been used, or adapted in some respect, by a large number of studies on online grooming (Baumgartner et al., 2010; Chang et al., 2016; Mitchell, Jones, Finkelhor, & Wolak, 2013; Montiel, Carbonell, & Pereda, 2016; Ybarra & Mitchell, 2008). Additionally, it appears to capture a large degree of the behaviours that could be associated with online grooming and thus will be used as the definition within this review.

2.4. Inclusion and Exclusion Criteria

Consideration was given to PRISMA recommendations for reporting systematic reviews when devising the inclusion and exclusion criteria for this study (Liberati et al., 2009):

Population: Studies were included that were focused on children and young people under the age of 18. Where adult samples were combined with minors, they were included when data that was relevant to children and young people could be extracted. Studies were excluded when their population was adults over the age of 18 or where children and young people's data was unable to be extracted.

Comparison: Studies that focused on both online and offline grooming were included when relevant data related to online grooming could be extracted, otherwise studies were excluded.

Outcome measure: Studies were included that were both primary or secondary in nature and explored characteristics or behaviours associated with 'online grooming', 'online sexual solicitation' or 'luring' which were consistent with Wolak et al.'s, (2006) definition. Studies were required to demonstrate statistical analysis between the risk factors and online grooming. Studies which solely reported prevalence rates were excluded as were studies which referred to offline as opposed to online grooming, or those which did not give a clear definition or description of their conceptualisation of the term 'online grooming'. If studies reported on the same data set, the study which explored characteristics of online grooming as a primary measure or which included a more in-depth exploration of these characteristics was included. 'Risk factors' or 'characteristics' were required to be adequately defined or described for inclusion.

Study design: Quantitative studies included observational studies with cohort or cross-sectional designs. Mixed design studies were also included if the quantitative data could be extracted.

Types of articles: English-language, peer reviewed, primary and secondary published empirical studies written between 01/01/2000 and 21/02/2018 were included, as were dissertations and theses published within this time frame. Books and chapters, posters, conference abstracts, brief reports or rapid communications, literature reviews, letters to editors or authors, non-published studies or papers studies prior to the above date were excluded.

Duplicates were removed and then an initial screening of titles and abstracts was conducted to determine whether the paper met the inclusion criteria described above. Publications that did not meet the inclusion criteria were discarded, and full text of the remaining articles was obtained. A manual search of the reference lists of articles that had been selected for inclusion was conducted. Duplicate articles were not included. Two papers were sourced from authors and four papers were sourced with assistance from the NHS Grampian librarian. A random selection of 50% of the included and excluded papers were peer reviewed by two independent reviewers to minimise bias.

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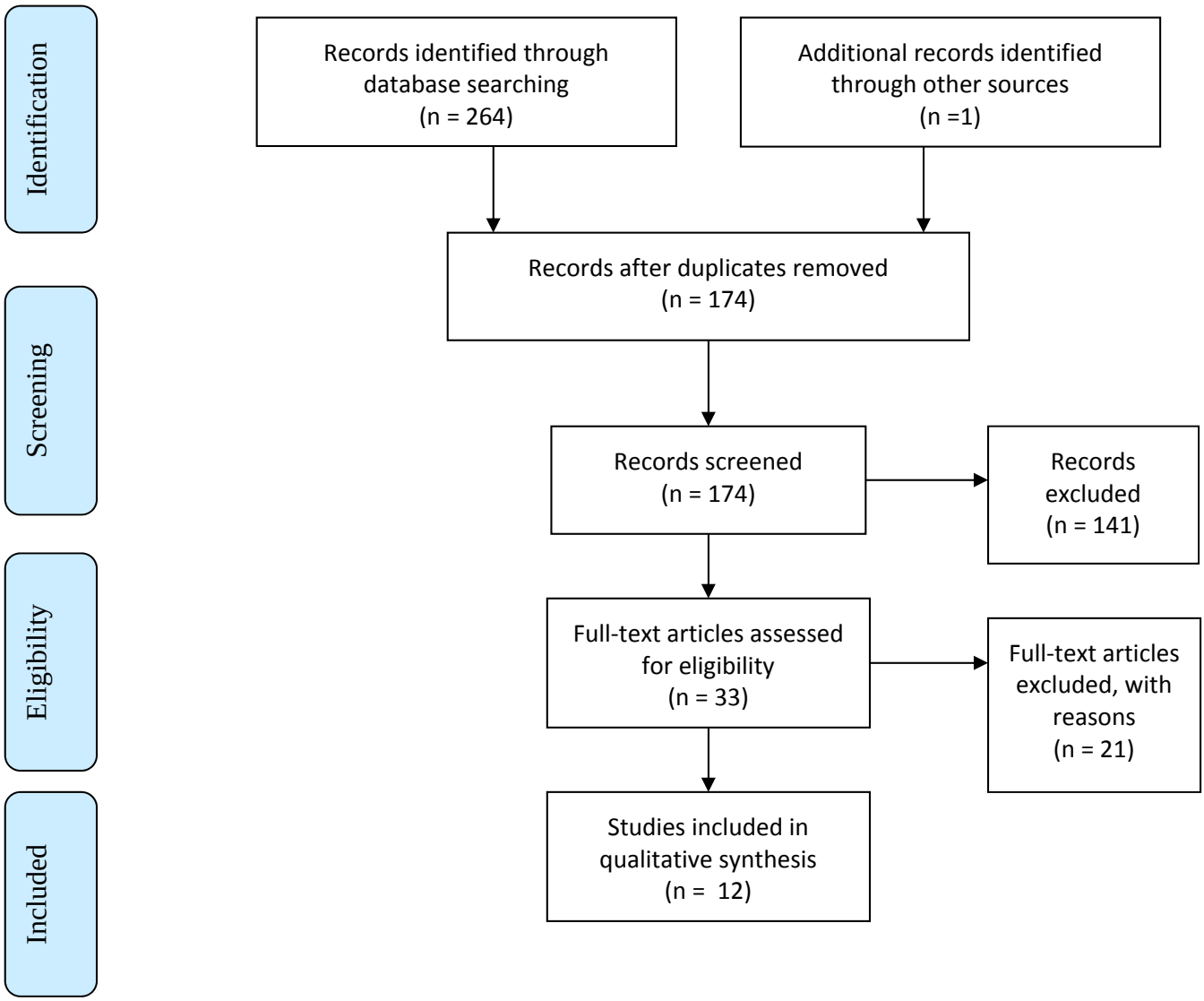

Figure 1: PRISMA flowchart of search strategy and outcome

Table A.1: Table of excluded full reviewed papers.

Total number of articles excluded (based on full paper screen)	21
Brief report/rapid communication	1
Could not elicit information related to the online grooming of children and young people	2
Qualitative papers focused on offender characteristics	1
No statistical analysis	1
Unclear definition of online sexual grooming or definition did not match included definition of online sexual grooming. No clear definition reported or unable to determine whether online sexual grooming was committed by adult or child.	9
Could not differentiate between online sexual grooming and online harassment	2
Is not relevant to online sexual grooming risk factors/characteristics	5

For full table of excluded references see appendix A.4

2.5. Data extraction

Data were independently extracted using a structured proforma (see table A.4)

2.6. Quality Appraisal

Quality appraisal tools for quantitative research are the subject of much debate (Centre for Reviews and Dissemination (CRD: 2009; Dixon-woods, Shaw, Agarwal, & Smith 2004). Proposed tools have been criticised due to a lack of transparency in regard to how authors have decided on quality ratings (Dixon-woods et al., 2004), and a general lack of depth to be able to systematically assess the research in a comprehensive manner (Crow &

Sheppard, 2010). Rating scale methods of quality appraisal, based on a numerical summary score, have been criticised with regard to their ability to address quality (Greenland & O'Rourke, 2001) and a lack of clarity about how to give weight to each item. Concerns that different scales would result in different quality conclusions when scoring an individual study is supported by Cochrane Bias Methods Group and Statistics Methods Group who suggested refraining from using summary scores (Juni, Witschi, Bloch, & Egger, 1999; Higgins & Altman, 2008). Similar concerns have been raised in regard to summary judgement checklist tools, with evidence supporting a checklist approach which concentrates on few fundamental likely sources of bias (Sanderson, Tatt, & Higgins, 2007). Suggested essential domains for inclusion include suitable selection of participants, suitable variable measurements and control of confounding variables, in addition to appropriate internal and external validity, data collection methods and analysis (Hannes, 2011).

After consideration of existing evidence-based quality assessment tools for cross-sectional data (Briggs, 2017; Centre for Evidence Based Management (CEBM) 2014; Critical Appraisal Skills Programme, (CASP) 2013), a well validated appraisal tool with high inter-rater reliability approved for use in non-RCT systematic reviews (CRD, 2009; Downs & Black, 1998), Cochrane guidance (Hannes, 2011) and previously conducted systematic reviews with similar methodologies (Capaldi, Knoble, Shortt, & Kim, 2012; McCann & Brown, 2018), an adapted critical appraisal tool was devised (see appendix A.3). Responses were scored as either well covered, adequately addressed, poorly addressed or not addressed/reported. Papers were then given an overall rating of excellent, very good, reasonable or limited based on these ratings. This tool was peer reviewed by two independent reviewers and adjustments were made. A total of 6 papers were critically appraised by two independent reviewers. Discrepancies were resolved via discussion. Results can be seen in table A.3.

3. Results

12 studies were identified as eligible for inclusion, representing 10 cohorts. 21 full papers did not meet the inclusion criteria and are briefly detailed in table A.1 and more fully in appendix A.4. All studies employed a cross sectional design. The age range of participants was 10-18, although one study reported school grade (10^{th} and 11^{th}) (Chang et al., 2016), thus age of population could not be confirmed. However, it is reasonable to assume that they are within this age range (study characteristics can be viewed in table A.2). Although five of the included studies used the Youth Internet Safety Survey's data (YISS) (Finkelhor, Mitchell, & Wolak, 2000) all included studies explored different aspects of the large YISS data sets and focused on different research questions thus were considered appropriate for inclusion.

Table A.2: Included study characteristics

Author	Country of Origin	Total population	Percentage of female and male participants	Age of participants	Nature of study
Mitchell, Jones, Finkelhor & Wolak (2013), Mitchell, Wolak & Finkelhor (2008), Mitchell, Ybarra & Finkelhor (2007), Widuger (2015), Ybarra, Leaf, Diener-West (2004)	US	YISS-1: 1501 YISS -2: 1500 YISS-3:1560	53% male 47% female 49% male 51% female 50% male 50% female	10-12 (23% n=337) 13-15 (48% n=725) 16-17 (29% n=439) 10-12 (23% n=345) 13-15 (43% n=651) 16-17 (34% n=504) 10-12 (21% n=333) 13-15 (45% n=694) 16-17 (34% n=533)	Telephone Survey
Ybarra & Mitchell (2008)	US	1588	47.8% females 52.2% males	10-11 (30% n=522) 12-13 (33.2% m=505) 14-15 (36.8% n=561)	Growing up with media, Online Survey
de-Santisteban & Gamez-Guadix (2017)	Spain	2731	50.6% female 48.3% males 1.1% not reported	12-15	Questionnaire in School environment
Montiel, Carbonell & Pereda (2016)	Spain	3897	47.3% male 52.7% female	12-13 31% 14-15 40% 16-17 29%	School environment

Villacampa & Gomez (2017)	Spain	489	50.1% females 49.9% males	14 (18% n=88) 15 (29% n=142) 16 (30% n=147) 17 (17% n=83) 18 (6% n=6)	School environment
Sklenarova, Schulz, Schumann, Osterwalder & Neutze (2017)	Germany	2238	46.1% males 53.9% females	14-17	Online Survey
Baumgartner, Valkenburg & Peter (2010)	Netherlands	1765	49% female 51% male	12-13 (n=568) 14-15 (n=606) 16-17 (n=591	Online Survey
Chang, Chiu, Miao, Chen, Lee & Chiang (2016)	Taiwan	2315	Not reported	10th and 11th grade	Questionnaire in School environment

3.1. Measures of Online Sexual Grooming/ Online Sexual Solicitation

Although all studies included definitions or descriptions of 'online sexual solicitation' (OSS) which were sufficient to meet this review's inclusion criteria of online sexual grooming, measures varied across studies. OSS by both adults and by peers was encapsulated within this review thus giving insight into the potential risk factors associated with both of these risks. One study used the 'Growing up with media' survey OSS data (Ybarra & Mitchell, 2008) and five studies used YISS OSS data (Mitchell, Jones, Finkelhor, & Wolak, 2013; Mitchell et al., 2008, Mitchell, Ybarra, & Finkelhor, 2007; Widuger, 2015; Ybarra, Leaf, & Diener-West, 2004). A further two studies based their OSS measures on those used within the YISS studies (Baumgartner et al., 2010; Chang et al., 2015). de Santisteban & Gamez-Guadix (2017) included 5 items measuring OSS, Montiel et al. (2016) included 7 items and Sklenarova et al.'s (2017) and Villacampa and Gomez's (2017) definitions were in line with that of this review, however it is not clear exactly how many OSS measures were included in their studies.

Table A.3: Critical Appraisal of included studies

	Quality Criteria												
Study	Clear research aims/ objectives	Design of study	Population specified	Representative sample	Consideration to recruitment bias	power	Response rate	Reliability/validity of measure	Statistical analysis	Results	Generalisbility	Limitations	Overall ratings
Baumgartner et al. (2010)	WC	AA	AA	AA	WC	AA	WC	WC	AA	WC	AA	AA	R
Chang et al. (2016)	WC	WC	PA	AA	WC	AA	AA	AA	AA	WC	NR	AA	R
de-Santisteban & Gamez-Guadix (2017)	WC	AA	AA	AA	AA	AA	WC	AA	WC	WC	AA	AA	VG
Mitchell et al, (2013)	WC	AA	AA	WC	AA	WC	PA	NR	WC	AA	PA	AA	R
Mitchell, Wolak & Finkelhor (2008)	WC	AA	AA	WC	AA	WC	WC	PA	WC	WC	AA	AA	VG
Mitchell et al. (2007)	WC	AA	AA	WC	AA	WC	PA	PA	WC	AA	PA	WC	R
Montiel et al. (2016)	WC	AA	AA	AA	WC	AA	WC	AA	WC	WC	WC	WC	VG
Sklenarova, et al. (2017)	WC	AA	AA	WC	WC	AA	PA	PA	WC	WC	WC	WC	VG
Villacampa & Gomez (2017)	WC	AA	AA	WC	WC	WC	NR	NR	AA	AA	AA	PA	R
Widuger (2015)	WC	AA	AA	AA	WC	AA	PA	NR	WC	WC	AA	WC	R

Ybarra et al. (2004)	WC	AA	AA	WC	AA	AA	WC	PA	WC	AA	AA	AA	R
Ybarra & Mitchell (2008)	WC	AA	AA	WC	AA	NA	PA	PA	AA	WC	AA	AA	VG

notes: WC= well considered, AA= adequately addressed, PA= poorly addressed, NR= not reported. Overall rating VG= very good, R= reasonable, L = limited (see Appendix 3 for details of overall quality ratings).

3.2. Quality of the papers

None of the included studies were assigned an overall quality rating of excellent due to the majority of the quality criteria being well or adequately addressed (see Table A.3). Five of the studies were rated as being of very good quality overall indicating that the limitations of the studies are unlikely to have affected their findings. Seven studies were rated as reasonable proposing that the limitations of the research may have modestly affected the study's findings or conclusions.

In general, none of the studies exclusively reported a clear inclusion and exclusion criteria. However, in agreement with the inter-raters, those studies which scored 'adequately' included at least some basic relevant demographic information or gave reference to a paper which referenced this information (Baumgartner et al., 2010; de Santiseban & Gamez-Guadix 2017; Mitchell et al., 2007; Mitchell et al., 2008; Mitchell et al., 2013; Montiel et al., 2016; Sklenarova et al., 2017; Villacampa et al., 2017; Ybarra et al., 2004; Ybarra et al., 2008). Specific criteria would have increased the overall quality of the papers and allowed a better understanding of the included population for comparative purposes and increased confidence in the generalisability of the findings.

Although some studies did not report power size calculations (Chang et al., 2016; Montiel et al., 2016; Sklenarova et al., 2017; Villacampa & Gomez, 2017; Ybarra et al., 2008), according to post hoc calculations with 5% margin of error at 95% confidence level, all studies achieved appropriate response rates. Thus, the findings in these papers may be considered representative for their given population. Additionally, no papers reported power, however post hoc power calculations confirmed that all of the results reported in this systematic review were powered. For papers that did not include an effect size an estimated effect size of 0.1 (small) was used for calculation purposes based on the frequency of this effect size reported within the papers which

did include this information. Although small, this information suggests that the results reported within this systematic review are not biased, although information should be considered with caution.

Additionally, Villacampa & Gomez. (2017) and Ybarra et al. (2004) were the only studies that clearly reported consideration to missing data. However, no clear rationale was given as to why Ybarra et al. (2004) excluded participants after two missing variables were identified. Montiel et al. (2016) removed data deemed ‘non-reliable’ and ‘incomplete responses’, although it is not clear what the rationale was for this decision. The exclusion of this data may have biased the overall findings of the studies.

Although most studies could be considered representative of their chosen population given the random sampling techniques they used, it is not clear in Baumgartner et al. (2010) and Chang et al.’s (2016) papers what percentage of male or female participants were included. This information could suggest that an unequal proportion of male and female participants participated in their studies, which may impact on the reliability of any proposed findings related to gendered risk factors. It is also unclear how Villacampa & Gomez (2017) selected their included schools and thus bias may have occurred. These limitations may also have impacted on the representativeness of these studies findings to their wider populations.

The included studies were also limited in regard to reported validity of the included measures, which again impacts on the reliability of their findings. Some studies reported reliability for other included measures but not for their measure of OSS (Chang et al., 2016; Mitchell et al., 2007) or directed readers to alternative papers for additional validity details (Mitchell et al., 2007). Other studies reported devising their own questionnaires based on existing well published models (Montiel et al., 2016; Villacampa & Gomez, 2017) although again reliability was not discussed. Chang et al. (2016) reportedly conducted a pilot study for their questionnaire and thus their

measure is considered to be reasonably reliable. Furthermore, Baumgartner et al.'s (2010) measures, although valid, are rated relatively low which should be considered when reflecting on their findings. Although unrelated to this study, there does appear to be an error in their results in regard to reporting that a finding was not significant with a reported significance level of P<.001. Thus, perhaps their other findings should also be interpreted with caution. Moreover, de Santisteban and Gamez-Guadix (2017) reported good reliability for most of their included measures although their 'sexting' measure was just below what would be considered appropriate. This should be considered with any reported associations they highlight between sexting and OSS. Finally, Ybarra et al. (2004) and Mitchell et al. (2007) included depressive symptomology as one of their main outcomes, however this was measured using questions exploring symptomology as reported in the 'Diagnostic and Statistical Manual of Mental Disorder'. It is not clear why they chose this method as opposed to an existing valid depression measure; it would be interesting to understand their rationale for this. Mitchell et al. (2007) used an updated version of the manual, DSM-IV-TR and they both used OSS data from different data sets. Additionally, Ybarra et al. (2004) explored these experiences by gender and level of symptomology which Mitchell et al. (2007) did not. Due to these differences and the additional risk factors that each study explored they were deemed appropriate for inclusion.

Table A.4: Data Extraction Table

Author	Title	Aim	Definition	Sample selection	Method	Analysis	Key findings and reported effect sizes
Baumgartner, Valkenburg & Peter (2010)	Unwanted online sexual solicitation and risky sexual online behavior across the lifespan	To investigate differences in unwanted online sexual solicitation in males and females in adolescence and adulthood.	Participants were asked two questions: 1) How often in the past six months, did anyone ask you online to talk about sex when you did not want to? 2) How often in the past six months, did anyone ask you online to do something sexual when you did not want to?	Selected from a randomly sampled and continuously updated pool of Dutch participants.	Online Survey	ANOVAs to investigate age and gender differences for unwanted OSS. Dunnett's T3 post-hoc tests to disentangle age effects.	Increased risk for frequent internet users $N^2 = 0.3$. Female adolescents aged 14-17 were at greater risk of OSS than younger people aged 12-13.

Chang, Chiu, Miao, Chen, Lee & Chiang (2016)	Predictors of unwanted exposure to online pornography and online sexual solicitation of youth.	To examine factors associated with the unwanted exposure to online sexual solicitation victimization and perpetration of youth in Taiwan.	Unwanted OSS: when youth are asked to engage in sexual activities or sexual talk or to give personal sexual information that is unwanted on the Internet.	Used a probability-proportionate-to-size-sampling method to systematically draw random school samples from two cities in Taiwan.	Self-Administered Questionnaire based on previous studies including US Youth Internet Safety Survey (Dowell et al., 2009; Ybarra and Mitchell, 2007) Youth Risk Behavior Surveillance System (Eaton et al., 2010). Depression: Centre for Epidemiologic Studies Depression Scale (CES-D).	Bivariate and multiple logistic regressions to examine factors in grade 10 and any changes from grades 10 to 11 related to the occurrence unwanted OSS victimization.	Males were more likely to experience OSS than females. Higher levels of online game use (OR 1.08) and depression (OR 1.03) were significant predictors off OSS in grade 10 but not 11. Unwanted exposure to pornography media (OR 1.53, OR 1.33), internet risk behaviours (OR 1.75, OR 1.56), and cyber bullying experience (OR 2.05, OR 1.94) were all associated with OSS in both grade 10 and 11.

de-Santisteban & Gamez-Guadix (2017)	Prevalence and Risk Factors Among Minors for Online Sexual Solicitation and Interactions with Adults.	Analyse the prevalence and risk factors associated with sexual solicitation.	Questions relating to OSS experiences with persons over 18 in the last year. Questions included: "An adult asked me for pictures or videos of myself containing sexual content" "An adult has asked me to have cybersex [e.g., via a webcam]" "An adult asked me questions about explicit sexual content through the internet or a mobile device"	Randomly selected 11 community schools in Madrid.	Questionnaire devised of: Questionnaire of sexual solicitation and interactions with adults (Gámez-Guadix, de Santisteban & Alcazar, 2017) An adolescent-modified version of the Sexting Questionnaire (Gámez-Guadix et al., 2015) Cyberbullying Questionnaire (Estévez, Villardón, Calvete, Padilla, & Orue, 2010; Gámez-Guadix, Villa-George, & Calvete, 2014) The depression subscale of the Brief Symptom Inventory	Logistic regression step analysis of sociodemographic variables, internet use variables and psychological variables independently.	Females were significantly more likely to have experienced OSS (OR1.92). Experience of OSS increased with age (OR1.50). Involvement in sexting (OR2.74) and suffering cyberbullying (OR 5.55) were associated with OSS. Using instant messaging platforms (OR 1.18), video chat (OR1.30), using chat rooms (OR 1.11), having unknown people on friends list (OR 1.41) and amount of time spent on internet on a week day (OR 1.22) were all more common among children who reported OSS. Depressive symptomology was also related to OSS (OR 1.39).

			"An adult asked me to have sex over the internet"		(BSI; Derogatis & Fitzpatrick, 2004); Rosenberg Self-Esteem Scale to explore personal self-esteem (Rosenberg, 1979).		
Mitchell, Jones, Finkelhor & Wolak (2013)	Understanding the decline in unwanted online sexual solicitations for U.S. Youth 2000–2010: Findings from three Youth Internet Safety Surveys.	To examine how characteristics of OSS have changed for youth across the 2000s in order to better inform education and prevention initiatives.	Requests to engage in sexual activities or sexual talk or give personal sexual information that were unwanted or, whether wanted or not, made by an adult.	Sample collected from a nationally representative telephone survey.	Data from all three Youth Internet safety surveys.	Pearson Chi-Square analyses of the rates of occurrence of specific incidents and experiences.	Youth who experienced OSS were more likely to use the internet frequently and intensely, use chat rooms, social networking sites, talk with people they knew in person prior to the incident and talk with people they only knew online, than non-solicited youth.

Mitchell, Wolak & Finkelhor (2008)	Are blogs putting youth at risk for online sexual solicitation or harassment?	Solicitations and interactions of minors with adults.	Reporting one of the following in the last year: "someone tried to get me to talk about sex online when I did not want to" "someone online asked me for sexual information about myself when I did not want to tell the person (e.g., really personal questions, like what my body looks like or sexual things I have done)" "someone asked me to do something sexual when I was online that I did not want to do".	The sample was acquired from the Harris Poll Online opt-in panel. Parents who were known to have children within the household were randomly contacted.	YISS 2 data.	Logistic regression analysis to examine the relationship between bloggers and interactors and unwanted OSS.	Youth who were interactors and bloggers were most likely to experience OSS (AOR 2.42). Interactors regardless of whether or not they were bloggers were significantly more likely to report OSS (AOR 2.36) than youth who did neither. These results controlled for demographic, internet use and psychosocial characteristics.

Mitchell, Ybarra & Finkelhor (2007)	The Relative Importance of Online Victimization in Understanding Depression, Delinquency, and Substance Use.	Explore the relationship between online and offline forms of interpersonal victimization with depressive symptomology, delinquency and substance use.	“In the past year, did anyone on the Internet ever try to get you to talk online about sex when you did not want to?” "In the past year, did anyone on the Internet ask you for sexual information about yourself when you did not want to answer such questions? I mean very personal questions, like what your body looks like or sexual things you have done?” “In the past year, did anyone on the Internet ever ask you to do	Sample from a national sample of households with telephones, which has been developed as a result of random dialling.	Data from First Youth Internet Safety Survey (YISS-1). Offline victimization was measured by selected items from the Juvenile Victimization Questionnaire (Finkelhor, Hamby, et al., 2005). Delinquent behaviours were measured by (a) taking something that did not belong to them (b) damaging property (c) being picked up by the police (d) physically assaulting another person. Substance misuse was measured by use in the past year: (a) tobacco, (b) alcohol,	A series of six step-wise logistic regression analyses to examine the relationship between online victimization and negative symptomatology, with and without adjusting for the total number of types of offline victimization.	Youth who reported OSS were 3 times more likely to report depressive symptomology (OR 2.5). 1.8 times more likely to report delinquency (OR 2.2) and 2.6 more likely to report substance use (OR 2.2). When accounting for offline victimization these effect sizes were reduced: depressive symptomology (OR1.8) substance use (OR1.8) and delinquency was no longer significant.

			something sexual that you did not want to do?"		(c) marijuana (d) inhalants, and (e) any other drugs. Depression was measured by questions relating to 9 symptoms of depression from the DSM-IV-TR.		
Montiel, Carbonell & Pereda (2016)	Multiple online victimization of Spanish adolescents: Results from a community sample.	To determine the past-year prevalence of online victimization in a community sample of Spanish adolescents.	Online grooming by an adult: Requests made by an adult, regardless of the use of coercive or grooming techniques, to engage in sexual activities or sexual talk or give personal sexual information. Sexual coercion: Request to engage in	Randomly selected 354 schools from a total of 709 secondary schools in Eastern Region of Spain.	The Juvenile Online Victimization Questionnaire (JOV-Q; Montiel & Carbonell, 2012).	Pearson Chi-square to identify significant associations between each form of online victimization, gender and age. Odds Ratio (OR) was computed in order to quantify the association between gender and victimization rates.	Unwanted exposure to sexual content rates were significantly higher for older adolescents (V_{cramer} = .107). Females experienced greater rates of online grooming by an adult (OR 3.09) as did older adolescents (V_{cramer} = .163). Experiences of sexual pressure were significantly associated with being female (OR 1.61) and older youth (OR1.61)

	sexual activities or sexual talk or give personal sexual information that involved explicit violence or intimidation as threat or blackmail, regardless of the age of the perpetrator. Sexual pressure: Requests to engage in sexual activities or sexual talk or give personal sexual information that involves insistence and reiteration, regardless of the age of perpetrator.	

Sklenarova, Schulz, Schuhmann, Osterhelder & Neutze, (2017)	Online sexual solicitation by adults and peers: Results from a population based German sample	To describe the 12-month prevalence of German adolescents' online sexual experiences with a focus on Online Sexual Solicitation.	Any online sexual interaction between an adult and a minor, or as negatively perceived online sexual interactions with a peer.	Participants were recruited through an online survey panel in Germany.	Online Survey	Bivariate analysis and Chi-Square analysis.	Females were significantly more likely to report negative OSS (d=0.28), as were older adolescents (d=0.60), those living in single parent families (r=0.01), foreign nationals (d=0.01), higher educational achievers (d=0.11), those who lacked social support (d=0.15) and those who identified as being either homo-sexual or bi-sexual (r=0.15).
Villacampa & Gomez (2017)	Online child sexual grooming: Empirical findings on victimisation and perspectives on legal requirements.	Examine the prevalence of victimisation of children by online grooming in Spain and establish victim profiles.	Adult grooming: Perpetrator tried to get the respondents to talk about themselves when they did not want to, including asking them to talk about sex, provide sexual information or perform sexual	Participants were recruited from a sample of five secondary schools from West Catalonia (Spain).	Questionnaire	Binary analysis using the chi-square test to establish the extent of correlation between the variables. Multivariate analysis of multiple correspondence to determine the profile of the online grooming victim.	Females were significantly more victimised than males in regard to being asked for sexual information (r=0.13) or to perform sexual behaviour from peer groomers (r=0.12) and being asked personal information from adult groomer (r=0.13). Those aged under 16 were more at risk of

	behaviour against their will. Peer grooming: behaviour was counted only when the respondent was asked to talk about sex which was unwanted.		requests for sexual information from peers (r=0.18). Being asked to perform sexual behaviour by an adult was associated with communal area use. Peer grooming victims: at least one parent with higher education. Adult grooming victims: primary school parental education. Parental education level, how often they go online and when they go online explained peer grooming. Parental academic level, frequency of internet use and online chat room use and talking to unknown individuals online explained adult grooming.

Widuger (2015)	Youth populations with an abuse history and their exposure to sexual material online.	Explore the relationship between a history of abuse and exposure to unwanted sexual materials and solicitation online.	Bring asked to do something sexual when not wanted in the past year (online sexual solicitation) Being forced to do something sexual in the past year (Sexual abuse).	Sample collected from a nationally representative telephone survey.	Used YISS 1 and YISS 2 data	Chi-square tests to examine the relationship between sexual abuse and OSS.	Children who reported sexual abuse were more likely to report online sexual solicitation, although the result was weak (Phi 0.113).

Ybarra, Leaf, Diener-West (2004)	Sex Differences in Youth-Reported Depressive Symptomatology and Unwanted Internet Sexual Solicitation	To investigate the association between youth-reported depressive symptomatology and unwanted Internet sexual solicitation and to identify sex differences in related characteristics of affected youth.	(1) whether anyone had asked the youth to talk about sex when he or she did not want to. (2) whether the youth had been asked to disclose personal, sexual information, such as sexual experiences or body type, about him or herself. (3) whether anyone had asked the youth to do something sexual that he or she did not want to.	Sample collected from a nationally representative telephone survey.	Youth Internet Safety Survey - YISS-1.	Bivariate relationships between variables were assessed using the chi-square statistic. Logistic regression modelling was used to estimate the odds of reporting an unwanted OSS for youths who report major or minor depressive symptomatology versus those who reported mild/no symptomatology. A saturated logistic regression model, including all youth characteristics and interaction terms, was first fit.	Males who reported major depressive symptomology were significantly more likely to report OSS than those who reported mild or no depressive symptomology (OR2.72). This was not significant for females. Frequent interactive internet use was significantly associated with OSS for males (OR 4.80) and for females (OR 3.21). Moderate internet use was significantly associated with OSS for males (OR 2.13) and for females (OR2.12) Chat room use was significantly associated with OSS for males (OR 3.13) and for females (OR 3.10).

						Harassing others online was significantly associated with OSS for males (OR 1.80) and for females (OR 4.07). Life challenge was significantly associated with OSS for males (OR 2.94). High substance use was significantly associated with OSS for females (OR2.87). Interpersonal victimisation was significantly associated with OSS for Males (OR 1.87) and for females (OR 1.82).

Ybarra & Mitchell (2008)	How Risky Are Social Networking Sites? A Comparison of Places Online Where Youth Sexual Solicitation and Harassment Occurs.	Explore whether social networking sites increase victimization of OSS.	Unwanted Requests to talk about sex, provide personal sexual information, and do something sexual	The sample was acquired from the Harris Poll Online opt-in panel. Parents who were known to have children within the household were randomly contacted.	The Growing up with Media Online Survey.	Pearson statistic corrected for the survey design with Rao's second-order correction converted into an F statistic, were used to test statistically significance in potential differences in youth characteristics.	Females were more likely to experience OSS on social networking sites than males. OSS was significantly experienced most commonly on instant messaging platforms, social networking sites, playing games and chat rooms (in that order) as opposed to email or blogging.

N^2 (small effect size =0.01, medium effect size = 0.06, large effect size = 0.14); D= Cohen's D (small effect size = 0.2, Medium effect size =0.5 Large effect size =0.8); r= Correlation coefficient (small effect size = 0.10, Medium effect size = 0.30 Large effect size = 0.50): AOR & OR = odd ratio (small effect size = 1.68, Medium effect size = 3.47 Large effect size =6.71); Crammer V (small effect size =0.1, Medium effect size = 0.3 Large effect size =0.5):; Phi =(small effect size =0.1, Medium effect size = 0.3Large effect size =0.5=) (Chen, Cohen & Chen, 2010; Cohen, 1988; Field, 2013; Murphy & Myors, 1998; Open Science Collaboration, 2015)

3.3. Gender

Five studies reported that females were more likely to experience OSS (Baumgartner et al., 2010; de Santisteban & Gamez-Guadix, 2017; Montiel et al., 2016; Sklenarova et al., 2017; Villacampa & Gomez, 2017), however effect sizes were small. One study reported a greater association between OSS and males (Chang et al., 2016). Females were reportedly more likely to receive requests from adult groomers to talk about themselves or requests from peer groomers to perform sexual behaviour (Villacampa & Gomez., 2017). Additionally, research found that females were more likely to experience OSS on social networking sites (SNS) (Ybarra & Mitchell, 2008).

3.4. Age

Older adolescents were reportedly more likely to experience OSS (Baumgartner et al., 2010; de Santisteban & Gamez-Guadix, 2017; Montiel et al., 2016; Sklenarova et al., 2017). One study reported that under 16's had a significantly greater probability of peer-related grooming (Villacampa & Gomez, 2017) and an additional study reported that females aged between 14-17 were more likely to report experiences of OSS than those aged 12-13 (Baumgartner et al., 2010).

3.5. Psychological Factors

Three studies reported a significant association between depressive symptomology and OSS (Chang et al., 2016; de Santisteban & Gamez-Guadix, 2017; Mitchell et al., 2007; Ybarra et al., 2004). A significant relationship between those with major depressive symptomology and OSS was also established for males (Ybarra et al., 2004). It was further reported that those with major depressive symptomology were significantly more likely to report feeling emotionally distressed by the incident than those with

mild/no depressive symptomology. This study did report a significant association between OSS and depressive symptomology for females prior to controlling for other significant characteristics (Ybarra et al., 2004). Psychosocial indicators such as interpersonal victimization and life challenges reportedly increased the odds of males reporting OSS and high levels of interpersonal victimization and substance use reportedly increased the odds of females reporting OSS (Ybarra et al., 2004). Finally, one study reported that offline sexual abuse was associated with OSS (Widuger, 2015) and two studies demonstrated a relationship between cyberbullying and OSS (Chang et al., 2016; De Santisteban & Gamez-Guadix, 2017).

3.6. Social Factors

One study did not report a significant association between parental education level and OSS (de Santisteban & Gamez-Guadix, 2017) however an additional study found this to be associated with both peer and adult grooming (Villacampa & Gomez, 2017). It was reported that low parental education level, frequency of online use and accessing SNS's most often could explain young people's experience of peer grooming. Alternatively, frequency of online use and accessing chat rooms most often could explain adult grooming experiences (Villacampa & Gomez, 2017). A relationship was also highlighted between gender, age, the online platforms that the child accessed, parental education level and reported experiences of online grooming, which was reportedly more significant for females (Villacampa & Gomez, 2017). Additionally, a significant relationship was reported for higher participant education level and experience of OSS (Sklenarova et al., 2017).

One study did report significant findings in regard to being raised in a single parent family and experiences of OSS (Sklenarova et al., 2017), whilst an additional study did not find this to be significant (de Santisteban & Gamez-Guadix, 2017). Additionally, a significant relationship between being a

'foreign national' and experiencing OSS was reported and between lack of social support and OSS (Sklenarova et al., 2017).

Finally, one study reported that adolescents who identified as either homo-sexual or bi-sexual were significantly more likely to report negative OSS (Sklenarova et al., 2017), however another study did not find this to be a significant predictor (de Santisteban & Gamez-Guadix, 2017).

3.7. Online behaviour

In terms of online platforms, those who reported higher levels of online gaming also reportedly experienced OSS (Chang et al., 2016; Ybarra & Mitchell, 2008), however this finding was not consistent (de Santisteban & Gamez-Guadix's, 2017). Chat rooms, SNS, video chat rooms and instant messenger (IM) platforms were all significantly associated with OSS (de Santisteban & Gamez-Guadix, 2017; Villacampa & Gomez, 2017; Ybarra & Mitchell, 2008). One study reported that chat room and SNS users were more at risk of OSS than those who used other online platforms such as IM (Mitchell et al., 2013), whilst an additional study found IM via computer but not mobile phone to be significant (de Santisteban & Gamez-Guadix, 2017). It was further reported that chat sites and talking to individuals only known online was associated with increased risk of adult grooming, however social networks such as Facebook and WhatsApp were significantly associated with peer grooming (Villacampa & Gomez, 2017). Additionally, males who used the internet frequently, accessed chat rooms and harassed others online were more likely to experience OSS (Ybarra et al., 2004). These findings were replicated for females however using the internet for high and moderate interactive internet usage were also found to be significantly associated (Ybarra et al., 2004).

In terms of time spent online, findings suggested that there was an association between frequency of online use and OSS (de Santisteban &

Gamez-Guadix, 2017; Mitchell et al., 2013; Ybarra et al., 2004). One study found both frequency (5-7 days per week) and intensity (more than 2 hours per day) to be significant (Mitchell et al., 2013) whereas an additional study reported only time spent on the internet during the week, as opposed to the weekend, to be a significant indicator of OSS (de Santisteban & Gamez-Guadix, 2017). One study found no significant relationship between weekly online chat room use and OSS although did report a significant association for weekly online game use (Chang et al., 2016).

Online access via mobile phone devices was found to be associated with OSS (Villacampa & Gomez, 2017) as was engaging in 'sexting' (de Santisteban & Gamez-Guadix, 2017) and higher levels of online pornography media exposure (Chang et al., 2016). Engaging in risky online behaviours such as sharing personal information, pictures and using a webcam to speak to strangers was also significantly associated with OSS (Chang et al., 2016). Research found that having unknown individuals on SNS friend lists (de Santisteban & Gamez-Guadix, 2017) and speaking to unknown individual's online was associated with OSS (Mitchell et al., 2013), however as was speaking to people online who are known offline prior to the OSS incident (Mitchell et al., 2013). Blogging did not appear to be significantly associated with increased risk of OSS above other forms of online communication such as IM, chat rooms and gaming sites (Mitchell et al., 2008; Ybarra & Mitchell, 2008).

In terms of monitoring it was reported that young people who accessed the internet in private areas, or communal areas without monitoring were significantly more likely to report OSS (Sklenarova et al., 2017). Victims of adult groomers who were requested to perform sexual behaviour were reportedly most likely to have accessed the internet from a communal area (Villacampa & Gomez, 2017).

3.8. Offline behaviours

Delinquent behaviour and substance use (Mitchell et al., 2007) were associated with OSS, although when considering offline victimization, delinquency was no longer significant (Mitchell et al., 2007). An additional study reported that female, but not male substance use was significantly associated OSS (Ybarra et al., 2004).

4. Discussion

Existing literature supports the proposed association of an increased risk of female OSS, (Bra, 2007; Helweg-Larsen, Schutt, & Larsen, 2011; Mitchell et al., 2014). These findings are perhaps best understood in the context of existing reports that females are more likely to share personal and intimate details online than males (Moreno, VanderStoep, Parks, Zimmerman, Kurth, & Christakis, 2009; Schouten, Valkenburg, & Peter, 2007). However, as there is likely an under representation of male disclosure within the research due to gender bias and/or stigma and there is a lack of self-report data from males, the findings in this review may be biased. Additionally, although most of the included studies reported appropriate gender information to infer that these findings could be deemed representative of the country of origin, Baumgartner et al. (2010) did not. Subsequently, it is unclear whether these findings are representative of the Dutch population as a whole. Furthermore, findings from Chang et al. (2016) are possibly best understood in the context of cultural traditions and moral principles that have been highlighted in previous epidemiological studies of child sexual abuse (CSA) (Liu, 2016). Disclosure may reportedly result in female victim ‘blaming’ (Tang, Wong, & Cheung, 2002) and impact on their future prospects (Lin, Li, Fan, & Fang, 2011). This may have impacted on female self-disclosure within this study.

Research proposing that sexual experimentation, curiosity (Wolak et al., 2010; Quayle, 2017), impulsiveness, sensation seeking and internet usage

increases with age, in line with a reduction in safeguarding and monitoring (Aitkenson & Newton, 2010; Livingstone, Haddon, Görzig, & Olafsson, 2011; Munro, 2011; Schulz, Bergen, Schuhmann, Hoyer, & Santtila, 2015) supports the reported association between OSS and age. However, the youngest age of participant within the included studies was 10, children of a much younger age now have access to the internet, thus additional research is required to explore whether these findings are generalisable to the younger population.

Although findings in this review support an association between depressive symptomology and OSS in line with existing literature (Webster et al., 2012; Soo & Bodanovskaya, 2012; Wells & Mitchell, 2007), the direction of this relationship is not clear due to the cross-sectional study designs. Research with perpetrators of online grooming suggests that offenders reported studying their victims for emotional deficiencies so as to develop strategies to meet their needs (Quayle, Allegro, Hutton, Sheath, & Lööf, 2014; Wolak et al., 2010). Therefore, perhaps those with depressive symptomology are more susceptible to these strategies, subsequently increasing their vulnerability to OSS and the need to be recognised and safeguarded to reduce this. However, the methods for assessing depressive symptomology varied within the review which makes it challenging to make reliable comparisons across the studies, with some measures appearing more valid than others (Chang et al., 2016). Ybarra et al. (2004) also explored depressive symptomology by level of severity and by gender which the additional studies did not consider (Chang et al., 2016; Mitchell et al., 2007) further making direct comparison difficult. Additional research is required to further explore whether a gendered association between OSS and depressive symptomology exists. Furthermore, these finding are only representative of those with depressive symptomology as opposed to a depression diagnosis, which should be considered when considering who is most at risk of OSS. Longitudinal research would be beneficial to further consolidate the findings from previous studies, explore causality and whether depression and associated negative

bias are the consequence of or predisposing factor associated with OSS, or whether this relationship is bidirectional.

Comparisons across studies was challenging when insignificant details regarding the collection of data was reported. This was the case for the inconsistent findings relating to OSS and parental education level (de Santisteban & Gamez-Guadix, 2017) and sexual orientation (de Santisteban & Gamez-Guadix, 2017; Sklenarova et al., 2017). Although one study reported the percentage of participants that identified as either homo-sexual or bisexual, they did not clarify whether they were male or female (Sklenarova et al., 2017). This poses difficulties for comparison across the wider literature in regard to whether findings support the proposition that this risk factor is predominantly related to males (UKCCIS, 2012; Wolak et al., 2008). Therefore, further research is required to explore this potential risk factor for OSS.

The inconsistent measures or definitions that were used across studies hindered the ability to compare variables related to OSS. For example, Ybarra et al. (2008) questioned youth in regard to which online activity they were engaging in whilst experiencing OSS, whereas Chang et al. (2016) questioned participants in regard to how often over the past week they had played online games. However, these findings are supported by research which proposed that gaming platforms are an environment where predators can access multiple victims simultaneously (Quayle et al., 2014), in addition to facilitating oblivious contact with perpetrators which may assist with their relationship development. Alternatively, de Santisteban & Gamez-Guadix (2017) asked this same question over the period of a year and did not report a significant OSS association. Perhaps the increase in online use over the past few years has increased young people's online safety behaviours and subsequently reduced this potential vulnerability. Additional research is required to further explore the relationship between different online activities and OSS and whether online safety education should vary across cultures.

Furthermore, association between online activity, place of use and peers and adult grooming was only explored within one study (Villacampa & Gomez, 2017). Therefore, risk factors for age of perpetrator, online activity and OSS could not be confidently reviewed. Findings from this study should also be interpreted with caution as an overrepresentation of peer grooming may exist due to adults reporting that they are of similar age to their victims to facilitate engagement. Thus, adult grooming may be artificially included within this study. Further research is required to explore whether risk factors for OSS vary depending on the age of the perpetrator. Additionally, research has reported a significant association between speaking to unknown individuals online and OSS. Research is required to explore whether it is the individual's online behaviour as opposed to their chosen platform which facilitates risk to further influence online safety education.

Finally, some studies reported a significant association with OSS when small effect sizes existed. This was the case for lack of social support and being a foreign national. Although both of these variables are supported by existing literature (Gallagher, Fraser, Christmann, & Hodgson, 2006; Mitchell, Finkelhor, & Wolak, 2001; Wells & Mitchell, 2008; Pereda et al., 2009) findings should be interpreted with caution. Also, in regard to the significant association between OSS and offline sexual abuse, this association was weak, which was likely the result of a small disclosure rate and may have stemmed from a hesitance to disclose as opposed to lack of experience. This study also collected data related to 'recent' incidents which is subjective and may have excluded disclosure of earlier childhood abuse. Although this finding may support an association between online and offline abuse (Wachs et al., 2012; Ybarra et al., 2007), additional research is required to consolidate this finding.

4.1. Limitations of the research

All the studies included in this review were cross sectional, thus the direction of the relationship is not possible to establish. Additionally, effect sizes were generally small and studies failed to report power. However, these findings remain informative in terms of online risk factors for children and young people, although longitudinal research would assist with determining whether these relationships are uni or bidirectional.

Although YISS data was recruited through random digit dialling to account for sampling bias, it is important to consider that bias may have occurred as a result of parental consent requests and excluding the population that did not have telephones. This consideration should also be given to the studies which focused on online survey data in terms of the participants that did not give consent to participate and the population that did not have email or online access. However, these findings are likely representative of participants of similar demographics to those included within the Country of origin.

All research was based on self-report measures which raises the concern of social desirability bias. Studies conducted within the school environment may be at greater risk of this bias due to lack of disclosure as a consequence of shame or fear of judgement when researchers were present in the environment. These studies may not be generalisable to children who are not in mainstream education including those with additional education needs or learning difficulties and who may be considered most at risk. However, telephone surveys may have been influenced by participants concerns that others within the household could overhear their conversation. Researchers did attempt to account for this limitation by offering to conduct interviews at a convenient time. Nevertheless, these methods are deemed to be beneficial in terms of reducing bias and increasing overall generalisability (Evans & Mathur, 2005; Pew Research Centre, 2004).

Some of the studies included within this review are from the early 2000's and thus may not be representative of today's youth population where ICT's are greatly embedded within society. Also, studies which included only single item response questions may have impacted on the information which was disclosed. The validity of the measures used to assess risk variables were often not detailed and could not be sought by the researcher, thus additional research using a reliable and valid measure would aid comparison of findings and consideration to study reliability. It is also important to consider that most of the research in this area has focused on 'unwanted' sexual advances which may introduce bias. This fails to consider those online advances that were initially perceived to be consensual by the young person but subsequently perceived as a negative experience (Sklenarova et al., 2017), or were 'wanted' due to perceived lack of love or attention or prior experience of abuse (Mitchell et al., 2007; Wolak et al., 2010). Finally, it is not clear within some studies whether the perpetrator was an adult or a peer and if it was a peer whether this could be understood in the context of normal adolescent risk-taking behaviour.

4.2. Implications for practice

This review highlights a number of risk factors that are associated with online sexual grooming that should be considered by parents, carers and professionals in terms of identifying those children and young people that are most vulnerable online. Although this research is relatively consistent with that related to the risk factors for offline grooming, some technology specific risks have been highlighted and thus should be held in mind when considering how best to target these risk factors and safeguard and educate to reduce online vulnerability. Consideration also needs to be given to how to target those children and young people that are unaware of the abuse that is being perpetrated or are unable to articulate this in order to request support. Those with responsibility for developing safeguarding policy and

legal frameworks both across countries and nationally also need to consider cultural differences and what is considered normative online practices by today's youth.

Based on the highlighted association between online sexual grooming and psychological and social challenge, it is important that online victimisation is given the same consideration as offline victimisation when considering how to target and support those who are most vulnerable. Mental health professionals should be curious in regard to young people's online experiences during assessment, formulation, treatment and safeguarding.

It is suggested that providing education to all children, parents, carers and professionals about the potential online risks, how to identify, respond to and report these would be beneficial, although consideration should be given to how to reach those young people outside main stream education. This education should include information not only on the risk of adult grooming but also peer grooming. Furthermore, in order to reduce the under reporting of this experience, perhaps a greater emphasis is needed in raising awareness of this experience and consideration should be given to how to support those that are most stigmatised to come forward for help.

4.3. Limitations

There were a number of limitations in this review. A very specific definition of online sexual grooming was used and only quantitative and English written papers were included, thus a vast amount of existing good quality research would have been excluded. Additionally, the definition used may not be representative of what is considered online sexual grooming across countries or internationally and thus may impact on the generalisability of the findings. Also, this review is not representative of online grooming practices which escalated to offline grooming and thus may not be generalisable to this population. Additionally, nearly half of the studies included in this review were

based on YISS study data which may have biased the review and again impacted on the generalisability of the findings.

Furthermore, data extraction was completed solely by the researcher, inviting another researcher to review these findings would have reduced any potential for bias.

4.4. Conclusion

The online environment is ever changing which poses significant difficulties for parents, professionals and policy makers in terms of understanding the dynamics of online risks for children and young people. Findings support existing online and offline research which suggests that risk is a complex interaction between the individual, their relationships, community and cultural factors. However, this review highlights that there has been limited change to risk factors with the introduction of the internet with the exception of some technology specific factors such as the use of certain online platforms and frequency of use. Specific consideration needs to be given to how to target those that are outside main stream education or under represented within this review. Future longitudinal research on the risk factors associated with online sexual grooming would be beneficial to consider the direction of the relationships identified within this review and to further explore whether the online environment offers any additional risk factors. Additional research using alternative definitions or comparing findings within and across countries would also be beneficial. However current findings may be considered useful by those who influence policy, legislative frameworks, safeguarding procedures, education and provision in addition to parents and carers.

5. Systematic Review References

Atkinson, C., & Newton, D. (2010). Online behaviours of adolescents: victims, perpetrators and web 2.0. *Journal of Sexual Aggression. 16,* 107–120. DOI: 10.1080/13552600903337683

Baumgartner, S. E., Valkenburg, P. M., & Peter, J. (2010). Unwanted online sexual solicitation and risky sexual online behavior across the lifespan. *Journal of Applied Developmental Psychology, 31,* 439–447. DOI: 10.1016/j.appdev.2010.07.005

Brå. (2007). *The online sexual solicitation of children by adults in Sweden* (2007:11). Stockholm: Swedish National Council for Crime Prevention.

Briggs, J. (2017). The Joanna Briggs Institute Critical Appraisal tools for use in JBO Systematic Reviews, Checklist for Cohort Studies. Retrieved December, 13th, 2017, from https://joannabriggs.org/assets/docs/critical-appraisal-tools/JBI_Critical_Appraisal-Checklist_for_Cohort_Studies2017.pdf

Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design.* Cambridge, MA: Harvard University Press.

Capaldi, D.M., Knoble, N.B., Shortt, J.W., & Kim, H.K. (2012). A Systematic Review of Risk Factors for Intimate Partner Violence. *Partner Abuse, 3*(2), 231-280. DOI: 10.1891/1946-6560.3.2.231

Centre for Evidence Based Medicine (CEMB) (2014). Retrieved December, 12th, 2017, from https://www.cebm.net/2014/06/critical-appraisal/

Centre for Reviews and Dissemination. (2009). Systematic reviews: CRD's guidance for undertaking reviews in healthcare. Retrieved December, 12th, 2017, from http://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/SysRev3.htm

Chang, F.C., Chiu, C.H., Miao, N.F., Chen, P.H., Lee, C.M., & Chiang, J.T. (2016). Predictors of unwanted exposure to online pornography and online sexual solicitation of youth. *Journal of Health Psychology*, *21*(6), 1107-1118. DOI.org/10.1177/1359105314546775

Chen, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitude of odds ratios in Epidemiological Studies. *Communications in Statistics – Simulation and Computation, 39*(4), 860-864. DOI.org/10.1080/03610911003650383

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Craven, S., Brown S., & Gilchrist, E. (2006). Sexual grooming of children: Review of literature and theoretical considerations. *Journal of Sexual Aggression, 12,* 287-299. DOI: 10.1080/13552600601069414

Critical Appraisal Skills Programme (CASP) (2013). Retrieved December, 12th, 2017, from: https://casp-uk.net/casp-tools-checklists/

Crow, M., & Sheppard, L. (2010). A review of critical appraisal tools show they lack rigor: Alternative tool structure is proposed. *Journal of Clinical Epidemiology*, 64, 79–89.

Department of Justice Canada. (2002). Stronger Child Pornography Laws Receive Royal Assent. Retrieved April, 13th, 2017, from: https://lop.parl.ca/About/Parliament/LegislativeSummaries/bills_ls.asp?ls=C15A&Parl=37&Ses=1&Language=E#3.%C2%A0%20Luring

de Santisteban, Patricia., & Gamez-Guadix, Manuel. (2017). Prevalence and Risk Factors Among Minors for Online Sexual Solicitations and Interactions with Adults. *Journal of sex research*, 1-12. DOI.org/10.1080/00224499.2017.1386763

Dixon, L., Browne, K., & Hamilton-Giachritsis, C. (2009). Patterns of risk and protective factors in the intergenerational cycle of maltreatment. *Journal of Family Violence, 24,* 111–122. DOI:10.1007/s10896-008-9215-2

Dixon-Woods, M., Shaw, R. L., Agarwal, S., & Smith, J. A. (2004). The problem of appraising qualitative research. *Quality Safety Health Care*, 13, 223–225. DOI.org/10.1136/qshc.2003.008714

Dombrowski, S. C., LeMasney, J. W., Ahia, C. E., & Dickson, S. A. (2004). Protecting children from online sexual predators: ethnological, psychoeducational, and legal considerations. *Professional Psychology: Research and Practice, 35,* 65–73. DOI: 10.1037/0735-7028.35.1.65

Downs, S.H., & Black, N. (1998). The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care intervention. *Journal of Epidemiology and Community Health, 52, 377-384.*

Evans, J. R., & Mathur, A. (2005). The value of online surveys. Internet Research, 15(2), 195–219. DOI.org/10.1108/10662240510590360

Field, A. P. (2013). *Discovering statistics using IBM SPSS statistics (4th edition)*. Washington DC: SAGE Publications Ltd.

Finkelhor, D., Mitchell, K.J., & Wolak, J. (2000). Online victimization: A report on the nation's youth. Alexandria, VA: National Center for Missing and Exploited Children.

Finkelhor, D., Ormrod, R., Turner, H., & Holt, M. (2009). Pathways to poly-victimization. *Child Maltreatment, 14,* 316-329. DOI:10.1177/1077559509347012

Gallagher, B., Fraser, C., Christmann, K., & Hodgson, B. (2006). International and internet child sexual abuse and exploitation: research report. Huddersfield, UK: Centre for Applied Childhood Studies; University of Huddersfield. Retrieved February, 13th 2018, from http://eprints.hud.ac.uk/461/

Gamez-Guadix, M., de Santisteban, P., & Alcazar, M. M. (2017). The Construction and Psychometric Properties of the Questionnaire for Online Sexual Solicitation and Interaction of Minors with Adults. *Sexual Abuse,* 1-17. DOI.org/10.1177/1079063217724766

Greene-Colozzi, E.A. (2017). An Exploration of Youth Experiences in Chatrooms. (Thesis). Retrieved from ProQuest (10283909).

Greenland, S., & O'Rourke, K. (2001). On the bias produced by quality scores in meta-analysis, and a hierarchical view of proposed solutions. *Biostatistics, 2*(4), 463-71. DOI: 10.1093/biostatistics/2.4.463

Gov.uk, (2017). Retrieved April, 13th, 2018, from https://www.gov.uk/government/news/new-crackdown-on-child-groomers-comes-into-force.

Hamilton-Giachritsis, C. E., Peixoto, C. S., & Melo, A. (2011). Risk Assessment and Intervention. In T. Magalhaes (Ed.), *Abuse and Neglect Series 1: To improve the management of child abuse and neglect* (pp. 89-131). Portugal: Specan.

Hannes K. (2011). Chapter 4: Critical appraisal of qualitative research. In: J. Noyes, A. Booth, K. Hannes, A. Harden, J. Harris, S. Lewin, C. Lockwood (Eds.) *Supplementary Guidance for Inclusion of Qualitative Research in Cochrane Systematic Reviews of Interventions. (Version 1 updated August 2011).* Cochrane Collaboration Qualitative Methods Group. Retrieved from http://cqrmg.cochrane.org/supplemental-handbook-guidance.

Helweg-Larsen, K., Schutt, N., & Larsen, H.B. (2011). Predictors and protective factors for adolescent internet victimization: results from a 2008 nationwide Danish Youth Survey. *Acta Paediatricia, 101*(5), 533-9. DOI:10.1111/j.1651-2227.2011.02587.x

Higgins, J., & Altman, D. (2008). Chapter 8: Assessing risk of bias in included studies In: J. Higgins, & S. Green (EDs.) *Cochrane Handbook for Systematic Reviews of Interventions version 50*. Chichester, UK: John Wiley & Sons, Ltd.

Jones, L.M., Mitchell, K.J., & Finkelhor, D. (2012). Trends in Youth Internet Victimization: Findings From Three Youth Internet Safety Surveys 2000–2010. *Journal of Adolescent Health, 50,* 179-186. DOI:10.1016/j.jadohealth.2011.09.015

Juni, P., Witschi, A., Bloch, R., & Egger, M. (1999). The hazard of scoring the quality of clinical trials for meta-analysis. *The Journal of the American Medical Association, 282*(11), 1054-60.

Karayianni, E., Fanti, K.A., Diakidoy, I.A., Hadjicharalmbous, M. Z., & Katsimicha, E. (2017). Prevalence, contexts, and correlates of child sexual abuse in Cyprus. *Child Abuse and Neglect, 66,* 41-52. DOI:10.1016/j.chiabu.2017.02.016

Liberati, A., Altman D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P.J., Kleijnen, J., & Moher, D. (2009). The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. *Journal of Clinical Epidemiology, 62*(10)e1-e34. DOI.org/10.1016/j.jclinepi.2009.06.006

Lin, D., Li, X., Fan, X., & Fang, X. (2011). Child sexual abuse and its relationship with health risk behaviors among rural children and adolescents in Hunan, China. *Child Abuse & Neglect, 35*(9), 680–687. DOI:10.1016/j.chiabu.2011.05.006

Livingstone, S., & Haddon, L. (2009) Introduction. In: S. Livingstone & L. Haddon (Eds.), *Kids online: opportunities and risks for children*. UK, Bristol: The Policy Press. LSE.

Livingstone, S., Haddon, L., Görzig, A., & Olafsson, K. (2011). Risks and safety on the internet. Perspective of European children. Full findings and policy implications from EU Kids Online survey of 9 – 16 year olds and their parents in 25 countries. Retrieved January, 2nd, 2018 from www.eukidsonline.net

Livingstone, S, & Palmer, T. (2012) *Identifying vulnerable children online and what strategies can help them.* UK Safer Internet Centre. Retrieved January, 2nd, 2018, from http://eprints.lse.ac.uk/44222/1/__Libfile_repository_Content_Livingstone%2C%20S_Identifying%20vulnerable%20children%20online%20and%20what%20strategies%20can%20help%20them%20%28LSE%20RO%29.pdf

Lui, X. (2016). A Review of Child Sexual Abuse in China and A CSA Prevention Program for Chinese Preschool-aged Children. University of Victoria. Retrieved April, 13th 2018 from: https://dspace.library.uvic.ca/bitstream/handle/1828/7325/Liu_Xuan_MEd_2016.pdf?sequence=1&isAllowed=y

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favourable and unfavourable environments: Lessons from research on successful children. *American Psychologist, 53,* 205-220.

May-Chahal, C., Palmer, E., Dodds, S., & Milan, S. (2018). Rapid Evidence Assessment: Characteristics and vulnerabilities of victims of online-facilitated child sexual abuse and exploitation. *Lancaster University. Retrieved March, 13th, 2018, from https://www.iicsa.org.uk/key-documents/3719/view/Rapid%20Evidence%20Assessment%20Characteristics%20and%20Vulnerabilities%20of%20Victims%20of%20Online%20Facilitated%20Child%20Sexual%20Abuse%20And%20Exploitation.pdf*

McCann, E., & Brown, M. (2018). The inclusion of LGBT+ health issues within undergraduate healthcare education and professional training programmes: A systematic review. *Nurse Education Today, 64,* 204-214. DOI:10.1016/j.nedt.2018.02.028

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2001). Risk factors for and impact of online sexual solicitation of youth. *Journal of American Medical Association, 285*(23), 3011–3014. DOI.org/10.1001/jama.285.23.3011

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2003). The Exposure of Youth to Unwanted Sexual Material on the Internet. A National Survey of Risk, Impact, and Prevention. *Youth and Society, 34(3), 330-358.* DOI:10.1177/0044118X02250123

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2004). Victimization of Youths on the Internet. *Journal of Aggression, Maltreatment and Trauma, 8*(1-2), 1-39. DOI: 10.1300/J146v08n01_01

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2005). The Internet and Family and Acquaintance Sexual Abuse. *Child Maltreatment, 10*(1), 49-60. DOI:10.1177/1077559504271917

Mitchell, K.J., Ybarra, M., & Finkelhor, D (2007). The relative importance of Online Victimization in Understanding Depression, Delinquency, and Substance Use. *Child Maltreatment, 12(4), 314-324.* DOI:10.1177/1077559507305996

Mitchell, K. J., Wolak, J., & Finkelhor, D. (2008). Are Blogs Putting Youth at Risk for Online Sexual Solicitation or Harassment?. *Child Abuse & Neglect: The International Journal, 32*(2), 277-294. DOI:10.1016/j.chiabu.2007.04.015

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2008). Youth Internet Users at Risk for the Most Serious Online Sexual Solicitations. *American Journal of Preventive Medicine, 32*(6), 532-537. DOI.org/10.1016/j.amepre.2007.02.001

Mitchell, K.J., Jones, L.M., Finkelhor, D., & Wolak, J. (2013). Understanding the decline in unwanted online sexual solicitations for U.S. youth 2000-2010: Findings from three Youth Internet Safety Surveys*. Child Abuse & Neglect, 37*(12), 11125. DOI: 10.1016/j.chiabu.2013.07.002

Mitchell, K. J., Jones, L., Finkelhor, D., & Wolak, J. (2014). Trends in unwanted online experiences and sexting: Final report. Durham, NH: Crimes against Children Research Center, University of New Hampshire. Retrieved December, 12th, 2017, from http://unh.edu/ccrc/pdf/Full%20Trends%20Report%20Feb%202014%20with%20tables.pdf

Montiel, I., Carbonell, E., & Pereda, N. (2016). Multiple online victimization of Spanish adolescents: Results from a community sample. *Child Abuse and Neglect, 52,* 123–134. DOI: 10.1016/j.chiabu.2015.12.005

Moreno, M. A., VanderStoep, A., Parks, M. R., Zimmerman, F. J., Kurth, A., & Christakis, D. A. (2009). Reducing at-risk adolescents' display of risk behavior on a social networking website. A randomized controlled pilot intervention trial. *Archives of Paediatrics & Adolescent Medicine, 163*, 35−41. DOI: 10.1001/archpediatrics.2008.502

Munro, E.R. (2011). *The protection of children online: A brief scoping review to identify vulnerable groups. Childhood Wellbeing Research Centre*. Retrieved January, 11th, 2018 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/181476/CWRC-00085-2011.pdf

Murphy, K.R., and Myors, Brett. (1998). *Statistical power analysis—A simple and general model for traditional and modern hypothesis tests*. Mahwah, N.J: Lawrence Erlbaum Associates, Inc.

Noll, J.G., Shenk, C.E., Barnes, J.E., & Putnam, F.W. (2009). Childhood Abuse, Avatar Choices, and Other Risk Factors Associated with Internet-Initiated Victimization of Adolescent Girls. *Paediatrics, 123*(6), 1078-1083. DOI:10.1542/peds.2008-2983

Noll, J.G., Shenk, C.E., Barnes, J.E., & Haralson, K.J. (2012). Association of Maltreatment with High-Risk Internet Behaviors and offline Encounters. *Pediatrics, 131*(2), 510-517. DOI:10.1542/peds.2012-1281

Olson, L. N., Daggs, J. L., Ellevold, B. L., & Rogers, T. K. K. (2007). Entrapping the innocent: Toward a theory of child sexual predators' luring communication. *Communication Theory*, *17,* 231-251. DOI.org/10.1111/j.1468-2885.2007.00294.x

Pereda, N., Guilera, G., Forns, M., & Gomez-Benito, J. (2009). The prevalence of child sexual abuse in community and student samples: A meta-analysis. *Clinical Psychology Review, 29*(4), 328-338. DOI.org/10.1016/j.cpr.2009.02.007

Pew Research Center. (2004). *Survey experiment shows: Polls face growing resistance, but still representative.* Retrieved December, 13th, 2017, from http://www.people-press.org/2004/04/20/polls-face-growing-resistance-but-still-representative/

Quayle, E., Jonsson, L., & Lööf, L. (2012). *Online behaviour related to child sexual abuse: interviews with affected young people.* Preliminary version. ROBERT Project. Retrieved from http://www.childrenatrisk.eu/robert/public/Interviews_with_affected_young_people.pdf

Quayle, E., Allegro, S., Hutton, L., Sheath, M., & Lööf, L. (2014). Rapid skill acquisition and online sexual grooming of children. *Computers in Human Behavior, 39,* 368–375. DOI:10.1016/j.chb.2014.07.005

Quayle, E. (2017). *Over the Internet, under the radar: Online child sexual abuse and exploitation A brief literature review*. Centre for youth & criminal justice, retrieved from Retrieved January, 12th, 2018, from http://www.barnardos.org.uk/over_the_internet__under_the_radar_literature_review.pdf

Rice, E., Winetrobe., Holloway, I. W., Montoya, J., Plant, A., & Kordic, T. (2015). Cell Phone Internet Access, Online Sexual Solicitation, Partner Seeking, and Sexual Risk Behaviour Among Adolescents. *Archives of Sexual Behavior, 44*, 755-763. DOI: 10.1007/s10508-014-0366-3

Rosen, L.D., Cheever, N.A., & Carrier, M.L. (2008). The association of parenting style and child age with parental limit setting and adolescent MySpace behavior. *Journal of Applied Developmental Psychology, 28,* 459-471. DOI:10.1016/j.appdev.2008.07.005

Sameroff, A., Gutman, L. M., & Peck, S. C. (2003). Adaptation among Youth Facing Multiple Risks: Prospective Research. Findings. In S. S. Luthar (Eds.), *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities* (pp. 364-392). New York: Cambridge University Press.

Sanderson, S., Tatt, I.D., & Higgins, J.P.T. (2007). Tools for assessing quality and susceptibility to bias in observational studies in epidemiology: a systematic review and annotated bibliography. *International Journal of Epidemiology, 36*(3), 666-676. DOI.org/10.1093/ije/dym018

Schouten, A. P., Valkenburg, P. M., & Peter, J. (2007). Precursors and underlying processes of adolescents' online self-disclosure: Developing and testing an “Internet-attribute-perception” model. *Media Psychology, 10*, 292−314. DOI.org/10.1080/15213260701375686

Schulz, A., Bergen, E., Schuhmann, P., Hoyer, J., & Santtila, P. (2015). Online sexual solicitation of minors: How often and between whom does it occur?. *Journal of Research in Crime and Delinquency, 52*(2), 165-188. DOI.org/10.1177/0022427815599426

Shannon, D. (2008). Online Sexual Grooming in Sweden – Online and Offline Sex Offences against Children as Described in Swedish Police Data. *Journal of Scandinavian Studies in Criminology and Crime Prevention, 9,* 160-180. DOI:10.1080/14043850802450120

Sklenarova, H., Schulz, A., Schuhmann, P., Osterheider., M., & Neutze, J. (2017). Online sexual solicitation by adults and peers - Results from a population based German sample. *Child Abuse and Neglect, 76, 225-236.* DOI*.org/10.1016/j.chiabu.2017.11.005*

Soo, D., & Bodanovskaya, Z. (2012). Risk factors of becoming a victim of internet related sexual abuse. In M. Ainsaar & L. Lööf, (Eds.), *Online behaviour related to child sexual abuse: Literature report*. ROBERT Project. Retrieved December, 11th, 2017, from http://www.childrenatrisk.eu/robert/public/Online_behaviour_related_to_sexual_abuse.pdf

Stamoulis, K. E. (2009). A*n Exploration into Adolescent Online Risk-Taking*. (Thesis). ProQuest. (3359715).

Tang, C. S. K., Wong, D., & Cheung, F. M. C. (2002). Social construction of women as legitimate victims of violence in Chinese societies. *Violence Against Women, 8*(8), 968– 996.

UK Council for Child Internet Safety (UKCCIS), (2012). *Identifying vulnerable children online and what strategies can help them. Report of a seminar arranged by the UKCCIS Evidence Group.* Retrieved December, 11th, 2017, from www.saferinternet.org.uk/content/childnet/safer-Internet-Centre/downloads/Research_Highlights/Vulnerable_children_report_final.pdf

Villacampa, C., & Gomez, M. J. (2017). Online child sexual grooming: Empirical findings on victimisation and perspectives on legal requirements. International Review of Victimology, 23(2), 105-121. DOI.org/10.1177/0269758016682585

Wachs, S., Wolf, K. D., & Pan, C. C. (2012). Cybergrooming: risk factors, coping strategies and association with cyberbullying. *Psicothema,* 24, 628–634.

Webster, S., Davidson, J., Bifulco, A., Gottschalk, P., Caretti, V., Pham, T., & Grove-Hills, J. (2012). *European Online Grooming Project Final Report*. Retrieved from http://www.european-online-grooming-project.com/

Wells, M., & Mitchell, K. (2007). Youth sexual exploitation on the Internet: DSM-IV diagnoses and gender differences in co-occurring mental health issues. *Child and Adolescent Social Work Journal, 24*, 235–260. DOI:10.1007/s10560-007-0083-z

Wells, M., & Mitchell, K. J. (2008). How Do high-risk youth use the Internet? Characteristics and implications for prevention. *Child Maltreatment, 13*(3), 227–234. DOI.org/10.1177/1077559507312962

Whittle, H., Hamilton-Giachritis, C., Beech, A., & Collings, G. (2013). A review of young people's vulnerabilities to online grooming. *Aggression and Violent Behavior, 18, 135-146.* DOI.org/10.1016/j.avb.2012.11.008

Widuger, Christine. (2015). *Youth populations with an abuse history and their exposure to sexual materials online*. (Thesis). Retrieved from ProQuest. (3664151)

Wolak, J., Mitchell, K. J., & Finkelhor, D. (2006). *Online victimization: 5 years later. National Centre for Missing & Exploited Children.* Retrieved from http://unh.edu/ccrc/pdf/CV138.pdf

Wolak, J., Finkelhor, D., & Mitchell, K. J. (2008). Is Talking Online to Unknown People Always Risky? Distinguishing Online Interaction Styles in a National Sample of Youth Internet Users. *CyberPsychology & Behavior, 11*(3), 340-343. DOI: 10.1089/cpb.2007.004

Wolak, J., Finkelhor, D., Mitchell, K. J., & Ybarra, M. L. (2008). Online "predators" and their victims: myths, realities and implications for prevention and treatment. *American Psychologist,* 63, 111-1128. DOI: 10.1037/0003-066X.63.2.111

Wolak, J., Finkelhor, D., Mitchell, K. J., & Ybarra, M. L. (2010). Online "predators" and their victims: Myths, realities, and implications for prevention and treatment. *Psychology of Violence, 1*, 13–35. DOI:10.1037/2152-0828.1.S.13

Ybarra, M., & Mitchell, K. (2004). Online aggressor/targets, aggressors, and targets: a comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry, 45*(7), 1308-1316. DOI: 10.1111/j.1469-7610.1104.00328.x

Ybarra, M.L., Leaf, P., & Diener-West, M. (2004). Sex Differences in Youth-Reported Depressive Symptomatology and Unwanted Internet Sexual Solicitation. Journal of Medical Internet Research, 6:6(1), e5. DOI*.org/10.2196/jmir.6.1.e5*

Ybarra, M.L., Alexander, C., & Mitchell, K.J. (2005). Depressive Symptomology, youth Internet use, and online interactions: a national survey*. Journal of Adolescent Health, 36,* 9-18. DOI:10.1016/j.jadohealth.2003.10.012

Ybarra, M., Espelage, D.L., & Mitchell, K. (2007). The Co-occurance of Internet Harassment and Unwanted Sexual Solicitation Victimization and Perpetration: Associations with Psychosocial Indicators. *Journal of Adolescent Health, 41,* s31-s41. DOI:10.1016/j.jadohealth.2007.09.010

Ybarra, M., Mitchell, K., Finkelhor, D., & Wolak, J. (2007). Internet Prevention Messages, Targeting the Right online behaviours. *Archives of Pediatrics and Adolescent Medicine, 161*(2), 138-45 DOI: 10.1001/archpedi.161.1.138

Ybarra, M. L., Mitchell, K., Finkelhor, D., & Wolak, J. (2007). Internet prevention messages; Are we targeting the right online behaviors?. *Archives of Pediatric and Adolescent Medicine, 161,* 138–145. DOI:10.1001/archpedi.161.2.138

Ybarra, M. L., & Mitchell, K. J. (2008). How risky are social networking sites? A comparison of places online where youth sexual solicitation and harassment occurs*. Pediatrics, 121(2), e350-357.*

Professionals' experiences of looked after children's internet and technology use: opportunities and risks.

Michelle Sharp and Dr Ethel Quayle

Michelle Sharp, School of Health in Social Science, University of Edinburgh, Scotland, Medical School, Teviot Place, Edinburgh, EH8 9AG, Scotland and NHS Grampian, Child and Adolescent Mental Health Service, The Rowan Centre, Elgin, IV30 6GQ, Scotland

Dr Ethel Quayle, School of Health in Social Science, University of Edinburgh, Scotland, Medical School, Teviot Place, Edinburgh, EH8 9AG, Scotland

Corresponding author email address: michelle.sharp4@nhs.net

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Abstract

Inconsistencies exist within the current literature in regard to whether Looked After Children (LAC) are at greater risk online than their peers. Additionally, there is limited research exploring professionals' experiences of LAC and how, if at all, they balance their safeguarding responsibilities with supporting these young people to access the multitude of opportunities that the online environment affords. Therefore, the purpose of this study was to explore professionals' experiences of LAC's internet use, how they manage both the opportunities and risks associated with this and the impact that current safeguarding practices have on these young people's opportunities to develop resilience and access these opportunities. Findings concluded that LAC were perceived to be vulnerable as a result of their complex histories but perhaps not any more-so than some of their peers outside the care system. Staff further identified that restrictive practices had both an impact on LAC's ability to access online opportunities, alongside limiting professionals' capacity to educate children about online risks and appropriate online safety behaviours. This undermined their ability to better prepare these young people for life after care into a society in which the internet is highly embedded. These findings are discussed in the context of the impact that they may have on the future direction of safeguarding within residential settings.

Keywords: *Looked after children, Internet use, Online opportunities, Online risks*

1. Introduction

Children and young people's access to the internet has increased rapidly over the past decade (Livingstone & Smith, 2014), with considerations related to this often tainted by negative undertones (Sen, 2016). Moral panic has been prompted by media coverage of 'extreme and exceptional' cases (Ballantyne, Duncalf, & Daly, 2010, p.96) and alarmist perceptions that the internet offers sex offender's unparalleled access to children (Finkelhor, 2014). These perceptions understandably exacerbate feelings of confusion, ambiguity and anxiety amongst parents, carers and professionals in regard to keeping young people safe online.

Recent statistics indicated that between 2016/17 in England and Wales there were 5,653 recorded cases of incidents of sexual crimes with an online element against children and young people, an increase of 44% from the previous year (NSPCC, 2016). These statistics do not consider those incidents that have gone unreported either as a result of young children being unable to articulate their experience or lacking awareness of the illegality of the incident (NICE, 2017). In addition, fear of disclosure or stigma, which may be particularly evident for males, may also suggest an under presentation of male victims within these statistics (May-Chahal, Palmer, Dodds, & Milan, 2018).

Opportunities and Risks

There are a number of essential and beneficial opportunities that can be accessed online relating to education, self-identity development, socialisation and communication (Livingstone & Helsper, 2007; Livingstone & Brake, 2010; Livingstone & Smith, 2014; Valkenburg & Peter, 2007). Additional opportunities include developing friendships with like-minded individuals, reducing feelings of isolation and facilitating inclusion and self-expression (Valkenburg & Peter, 2007). However, many of these opportunities are interwoven with the potential for exposure to online risk and engagement in

risky online behaviours. Concerns relate to levels of personal disclosure (boyd & Marwick, 2009), who young people are communicating with online (Valkenberg & Peter, 2009), online-sexual exploitation (Berelowitz, Clifton, Firimin, Gulyurtlu, & Edwards, 2013; Livingstone, 2009) cyber-bullying and harmful contact with strangers (Livingstone & Brake, 2010). In contrast to the above concerns research has proposed that although some children will communicate with unknown individuals (Livingstone, Haddon, Görzig, & Ólafsson, 2011), they are reportedly much less likely to meet online contacts offline (Livingstone, Olafsson, O'Neill, & Staksrud, 2013) and respond to the advances of online groomers or respond in a risky manner (Bra, 2007; Mitchell, Finkelhor, & Wolak, 2007). For those who do, this rarely results in experiences of harm (Livingstone et al., 2011). However, these findings may not be representative of those children who are considered most vulnerable. Furthermore, research implies that not all risks result in harm and that the online environment may in fact buffer the effects of the risk-taking behaviour that is observed in early adolescence (Finkelhor, 2014) with further suggestion that exposure to risk can in fact support resilience building (Livingstone & Smith, 2014). Subsequently, there is a need for a balanced approach to online risks and opportunities and further research to enhance our understanding of this.

Who is most vulnerable online?

Research has proposed that children who are vulnerable offline are also vulnerable online (Fursland, 2011; May-Chahal et al., 2014). However, it is unclear whether this is predisposed by an interaction between online and offline factors or factors that are yet to be identified (Livingstone & Smith, 2014). Further research has also suggested that whilst this may be the case for some children it is not for all, proposing the importance of understanding contextual factors (Livingstone & Palmer, 2012). Livingstone and Palmer (2012) further conclude that risk is not a static issue and that the four potential risks that children face (content, conduct, contact and commercialism) are evident at difference stages of development. Thus,

vulnerability is best understood in the context of psychological, emotional and physical development.

Research however has identified a number of individual, social, interpersonal, cultural and digital characteristics associated with increased online vulnerability for children and young people (May-Chahal, Palmer, Dodds, & Milan, 2018; Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013). Females are often reported to experience more harm online than males (Baumgartner, Valkenburg, & Peter, 2010; CEOP, 2013) and vulnerability is often found to increase in older adolescents (Baumgartner, Valkenburg, & Peter, 2010; Montiel, Carbonell, & Pereda, 2016). However, contrasting findings have been reported (Chang et al., 2016; Villacampa & Gomez, 2017) and cultural differences across study populations, societal norms and traditions and the age of the included population need to be considered. Additional factors which have been associated with online vulnerability are lack of parental support, peer norms, sensation seeking, moral disengagement, low self-esteem, psychosocial difficulties, digital skills, online practices and affordance of access (Fursland, 2011; Livingstone & Smith, 2014). Immaturity, behavioural difficulties, susceptibility to persuasion (Dombrawski, LeMasney, Ahia, & Dickson, 2004; Olsen, Daggs, Ellevold, & Rogers, 2007) and the use of smart phones and tablets (Livingstone, Mascheroni, Ólafsson, & Haddon, 2014) have also been reported to be associated with this experience.

Although no definitive ‘risk profile’ has been established, what does appear to be evident from the research exploring young people’s vulnerability to online risk (Whittle et al., 2013) is that no sole risk factor is evident. Rather a complex interplay between a number of factors exists, which is exaggerated by a lack of protective factors (Masten & Coatsworth, 1998).

Looked after children

Given the above findings and our understanding of young people's passage into the care system, it would be reasonable to assume that Looked-After Children (LAC; children who are under the care of their local authority as defined by the Children Scotland Act (1995)) would be considered highly vulnerable online. Research exploring online child sexual exploitation (CSE) experiences of children and young people within residential care settings, reported that those that were most vulnerable had a range of intense and complex needs and psychological and behavioural difficulties (La Valle, Graham, & Hart, 2016). LAC are often disengaged from education, lack secure or positive attachment relationships with peers and family (La Vella et al., 2016) and are likely to have minimal opportunities to experience feelings of inclusion, support and love. Subsequently, LAC may choose to willingly engage in online risky behaviours in order to meet some of these identified needs. Some LAC also experience numerous placements or are placed long distances away from their existing support networks (Boddy, 2013). Therefore, these young people may gain more benefit from the affordance of online relationships than their peers from more secure settled home environments. However, research suggests that LAC may lack the appropriate skills required to access these opportunities and behave in a safe manner online (Fursland, 2011).

Sen (2016) conducted an exploratory study to investigating the online experiences of LAC and young adults who had previously been in care. Findings identified that LAC's internet use did not differ dramatically from their peers and in contrast to research proposing a deficit in digital literacy skills (Fursland, 2011), participants reported having private profiles and using individualised criteria for sharing information and accepting contacts on various online platforms (Sen, 2016). Findings also suggested that LAC's online use should not be viewed as intrinsically problematic and as such professionals' internet management strategies are unlikely to require to be

inherently different than those used with their peers. However, this study had a small sample size and participants were recruited from one geographical area, thus findings may not be deemed representative. Consideration should also be given to whether those that consented to participate in the research would be considered representative of the 'most vulnerable' LAC. Nevertheless, the study does give some insight into a potential online management approach that could be adopted by professionals.

To summarise, from the limited online research regarding LAC online use it appears that findings are inconclusive in regard to whether LAC are more vulnerable online than their peers (Sen, 2016). Based on the above research it would be plausible to assume that any child who experienced childhood trauma or need deficits would potentially look to the online platform to fill these voids and thus be considered vulnerable, regardless of their living situation. This is supported by research which suggests that some LAC are more susceptible to offline childhood sexual exploitation, although little is known about their experience of this online (Brown, Brady, Franklin, Kerrigan, & Sealey, 2016).

Professionals safeguarding anxieties

Based on the factors outlined above, it is understandable that professionals may experience feelings of anxiety in regard to online safeguarding responsibilities. However, there is lack of clarity in the literature as to whether these professional concerns are the result of professional experiences, preconceptions or judgments based on fear, or concerns triggered by a loss of monitoring-control in relation to mobile technology devices for those with safeguarding responsibilities (Buckingham, 2007). It has further been proposed that a focus on online risks, and emphasis on the importance of safeguarding young people from these, is merely a diversion from the real anxiety that it is not possible to keep children and young people safe all the time (boyd & Marwick, 2009). Additionally, professionals' perceptions of what is considered normative and risky practice likely varies widely across the

social care profession as a whole (Simpson, 2013). Thus, it is likely that there are inconsistencies in terms of professionals' management of online risks which in turn influences LAC's access to opportunities and the safeguarding procedures that are implemented across the profession.

Educating and monitoring responsibilities

It is important to acknowledge the difficulties that professionals' face in regard to safeguarding as the line between ensuring LAC's safety and restricting their liberty is very fine. An advantage that professionals' may have, which may lessen this corporate parenting anxiety, is shared responsibility given that they are part of an immediate and a wider team. Nevertheless, new technologies do enhance the safeguarding responsibilities, particularly in regard to the privacy that is afforded by personal devices and the opportunities for unmonitored contact. This is supported by research highlighting that the internet can facilitate unmediated contact between LAC and their birth families (Fursland, 2010), which may result in vulnerable children contacting their families without the support and emotional care they require. When considering this, in addition to research which has highlighted the positive impact of parental monitoring and involvement on reduced online negative experiences (Soo & Bodanovskaya, 2012), corporate parents have the challenge of imposing appropriate safeguarding and monitoring practices whilst being mindful not to infringe on the young person's rights. What is also important to consider is that professionals, as corporate parents, have the responsibility of preparing these vulnerable young people for life after care and integration into a society dominated by online technology. Existing research has proposed the best means of doing this is through educational interventions focused on online and offline environments encompassing refusal techniques, help-seeking and health and safety (Finkelhor, 2014). It is also noted that a focus on positive relationships and building resilience, improving self-esteem and self-worth, effective communication and future planning is beneficial for helping young people develop appropriate online usage (La Valle et al., 2016). It is

important that the online monitoring approaches found by research to be most beneficial (in both the short and long term) should be taken into consideration when policy and practice guidelines are being developed.

In conclusion, there are inconsistencies in regard to whether LAC are indeed more vulnerable than their peers online although research within this area in general is limited. However, what is clear is that LAC would likely benefit from access to the opportunities offered by the internet along with education and guidance on safe, appropriate online use. Children's access to the internet and the level of monitoring varies widely in households; this is often influenced by parental views and beliefs. Arguably, it is important that children who are being looked after within residential settings by corporate parents receive a well-thought-out approach in relation to their use of the internet; ideally this would be an approach informed by evidence rather than individual professionals' views. Thus, further research is required to explore professionals' experiences of LAC's internet use in order to support the development of policies and guidance, outline parameters for best practice for monitoring and safeguarding and to facilitate a balanced view in regard to facilitating access to online opportunities, in addition to protection from online risks in order to prepare young people for life after care.

2. Method

The aims of this study are three-fold:

- To explore care givers' conceptualisations of technology and LAC's internet use.
- To explore how care givers manage the risks and opportunities associated with technology and online internet use for LAC.
- To explore staff perceptions about the impact of imposed safeguarding measures on LAC's opportunities to develop resilience and benefit from internet technologies.

A Grounded Theory (GT) qualitative approach was proposed in order to explore participants' experiences and meet the study aims. Whilst there are various qualitative research approaches, GT was deemed most appropriate based on its use in associated research exploring perceptions and experiences of children and young people's internet use (Mishna, Cook, Saini, Wu, & MacFadden, 2011; Quayle, Jonsson, & Loof, 2012). Originally developed by Glaser and Strauss (1967), GT methods offer a systematic approach to theory formation from within the data as opposed to inferring hypotheses from existing theories (Charmaz, 2014). This method proposes a simultaneous process of data collection, coding and analysis to generate an explanatory theory and a move away from a descriptive framework (Charmaz, 2014). Charmaz's (2014) approach to GT provides structured guidelines whilst allowing for naturalistic enquiry and flexibility to interpret complex social phenomena. It assumes that theories emerge from a reality which is constructed between the researcher and the participant as opposed to an alternative objectivist approach of the researcher's analysis as an accurate interpretation of the data (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Subsequently, given the lack of research in this area it was proposed that utilising an analytical method that supported the development of a theory grounded in the experiences of those working directly with LAC would be most beneficial.

2.1. Ethics

Ethical approval was sought from the Research Ethics Committee of the School of Health in Social Science at The University of Edinburgh (See appendix A.5). The Local Council were consulted and advised that permission should be sought from the individual care home managers as opposed to the local authority (See appendix A.11). Prior to commencing the interviews, participants were asked to read and sign information sheets detailing data protection information including participants' right to withdraw and information regarding how the data would be used. Consent forms and transcription devices were stored in accordance with the Data Protection Act (1998), interviews were anonymised and transcribed onto a password protected laptop and subsequently uploaded to Dedoose Data Management System (http://www.dedoose.com). To ensure anonymity each participant was assigned a unique identifier which was used during the transcription of interviews and any identifiable information was removed or disguised.

2.2. Recruitment and Participant Information

Recruitment targeted professionals currently working within local Looked After Children's residential homes. The only inclusion criteria were that they were English speaking and that they had at least one year's experience working within this setting to ensure homogeneity of experience. Sample characteristics such as participant's gender, age, qualification and number of years' experience would have allowed for greater comparison of participant experience, however these details were not gathered due to extreme rurality of the area, making identification by peers likely.

Three male and nine female professionals contributed to the research. Participants were recruited through direct contact with the managers of one Local Authority and one private residential care home. Both agreed to participate and facilitated contact with a senior member of staff to arrange

interview times. Drop-in sessions were offered but were not taken up. A senior from the local authority residential home approached eight members of staff, all of whom agreed to participate in the study and appropriate interviews times were arranged via email. Interviews took place in a quiet venue within the home and lasted between 45 to 60 minutes. One participant was excluded as they had not worked within a LAC residential setting for at least one year. Three local care homes were managed by the private company. All three were contacted by email and by telephone although only one returned contact. Five participants were approached and all agreed to participate. These interviews took place in a quiet room within the residential home and again lasted roughly between 45 to 60 minutes. Subsequently all participants were recruited from two of the four contacted residential homes.

Both the private and council led residential homes accepted male and female residents up to the age of 18 as standard, with the option of continued support in certain circumstances if required. Some examples of the reasons that children were placed within their care were that they had been severely neglected, experienced sexual or physical abuse or sexual exploitation. Additional reasons included young people who had experienced a number of failed foster placements and those whose behaviour was perceived to be challenging and thus unmanageable within the home or other environments. This included children who severely self-harmed, engaged in highly risky behaviours, abused substances, had difficulties regulating their emotions or had experience of contact with the legal system. Children were within these residential homes on either a compulsory, voluntary or shared care basis.

2.3. Procedure

An initial interview schedule consisting of sample questions and potential prompts was devised in order to guide the semi-structured interviews (an example of the interview themes are reported in table B.1). However, one of the advantages of GT is the ability to be sensitive to participant's accounts

and to reflect findings from earlier interviews in subsequent questions (Myers, 2009). As such, a flexible approach to interviewing was taken and the interview schedule was referred to only as a guide. Data collection and analysis was a concurrent process as outlined by Charmaz (2014) and followed the method of initial, focused, theoretical coding, constant comparative analysis and memo writing. Following this approach, data was initially coded systematically line by line using Dedoose Data Management Software (http://www.dedoose.com). Initial codes remained close to the data and aimed to define what was happening and reflect the action or meaning for the participant. These initial codes highlighted pertinent issues for further exploration. Focused codes were developed by identifying the most significant or frequently used initial codes to synthesise larger segments of data. They were more conceptual than the initial codes, chosen based on their apparent analytic value and subsequently prompted the formation of categories, intensifying theoretical plausibility. Theoretical coding, which entailed constant comparative analysis, highlighted relationships between categories. Theoretical concepts were devised based on the categories that were deemed most prominent, meaningful and held most exploratory value, subsequently moving analysis in a theoretical direction (Charmaz, 2014). Memo writing throughout the analytic process captured the researcher's thoughts about the data, possible interpretations of meaning and facilitated the exploration of emerging theoretical concepts.

A large number of focused codes were initially grouped into 27 clusters which were reduced to four categories with three interlinking sub categories through additional sorting and analytical consideration. Table B.2 illustrates focused codes identified within the interviews. These focused codes were chosen as examples as they were most commonly cited and appeared largely representative of the majority of the participant's experiences. A tentative theoretical model of these categories is outlined in Figure A.1.

Table B.1: Example of interview question themes

Flexible Interview Schedule

Can you start by telling me about your experience of LAC internet use?

In what ways, if at all, is LAC internet use different to children in other contexts?

Do you think LAC are more at risk online than children living in other contexts?

Any specific risks that you think are related to LAC that do not apply to children living in other contexts?

How confident do you feel in safeguarding LAC from online risks?

What benefits do you think that LAC gain from using the internet?

Do these differ from the benefits of children living at home?

Do you think that LAC experience any barriers to gaining access to online opportunities?

What, if any, do you think are the impacts of restrictive online monitoring practices?

How, if at all, do you educate young people about online opportunities?

How confident do you feel in supporting LAC to access online opportunities?

Do you think there is a balance between managing risk and opportunities?

3. Results

An overarching category of the *importance of trusting relationships and communication* was evident from the data collected from professionals from both the private and council run residential home. This reflected the value that professionals from both environments placed on the importance of positive, open, trusting relationships and effective communication both with their immediate and wider team members and with the LAC. This was associated with improving their confidence in their professional capacity to safeguard these young people and facilitate learning opportunities to prepare them for leaving care.

One category captured professionals' opinions in relation to LAC's online vulnerabilities, *all young people have the potential to be vulnerable*. This category reflected that LAC are vulnerable but perhaps not any more so than their peers outside the care system who have needs deficits or who have experienced trauma. The general opinion across both residential settings was that LAC appear more vulnerable as they are scrutinized more so than their peers and that all young people are potentially vulnerable online. This finding was interlinked with a category of *monitoring by restriction does not eliminate risk.* All participants had either direct or indirect experience of working with LAC who had experienced some form of online risk, irrespective of the online restrictive practices that had been put in place. A third category which was interlinked with these two categories was *Lacking authority. This category* related to experiences of external departments setting WIFI restrictions that professionals have no control over and a lack of ability to enforce boundaries or impose consequences. It was also related to a lack of access to young people's personal devices without grave concern and permission from a multidisciplinary team and experiences of setting boundaries for young people which were contradicted by parents. These experiences prompted feelings of *powerlessness*, *frustration*, *feeling undermined* and increased *anxiety* in relation to managing LAC's internet use. These three categories were interlinked by three sub contextual categories which explained the way in

which professionals moved between the three categories: a focus on an *educational rather than restrictive approach,* a *shared sense of responsibility* and *experience. These sub categories* facilitated professionals' feelings of confidence in regard to monitoring LAC's internet use.

These categories represent an interpretation of professionals' opinions of whether LAC are more vulnerable than their peers online and an understanding of professionals' experiences of LAC's online use. Due to small population size theoretical saturation was not possible however, all participants' data supports the proposed overarching category and the remaining categories were constructed from the codes that were most frequent and held most analytic value within the data.

Table B.2: Examples of focused codes which contributed to the categories

Categories	***Examples of contributing focused codes***
Importance of relationships and communication	Monitoring through discussion, learning about risk through relationships with the YP, monitoring through sharing concerns with the team.
All young people have the potential to be vulnerable	Unmet needs increase online risk, background trauma history increases online risk, low-self-worth increases online risk, perceiving all young people to be vulnerable, perceived to be more vulnerable as more scrutinized.
Monitoring by restriction does not eliminate risk	Monitoring through restriction does not reduce risk, monitoring by restriction increases access on other devices, monitoring through restriction prompts unsafe internet seeking behaviours.
Lacking Authority	Challenging monitoring internet that is controlled by an external department, challenging safeguarding when they have no access to personal devices, challenging safeguarding when limited authority to enforce boundaries.
Sub Categorical Variables	
Shared sense of responsibility	Monitoring as a team reduces worry, monitoring by sharing concerns with team.
Educational rather than restrictive approach	Monitoring through education reduced risk, monitoring through education prepares for leaving care.
Experience	Perceiving own experience to increase confidence, perceiving own lack of internet experience to impact on confidence.

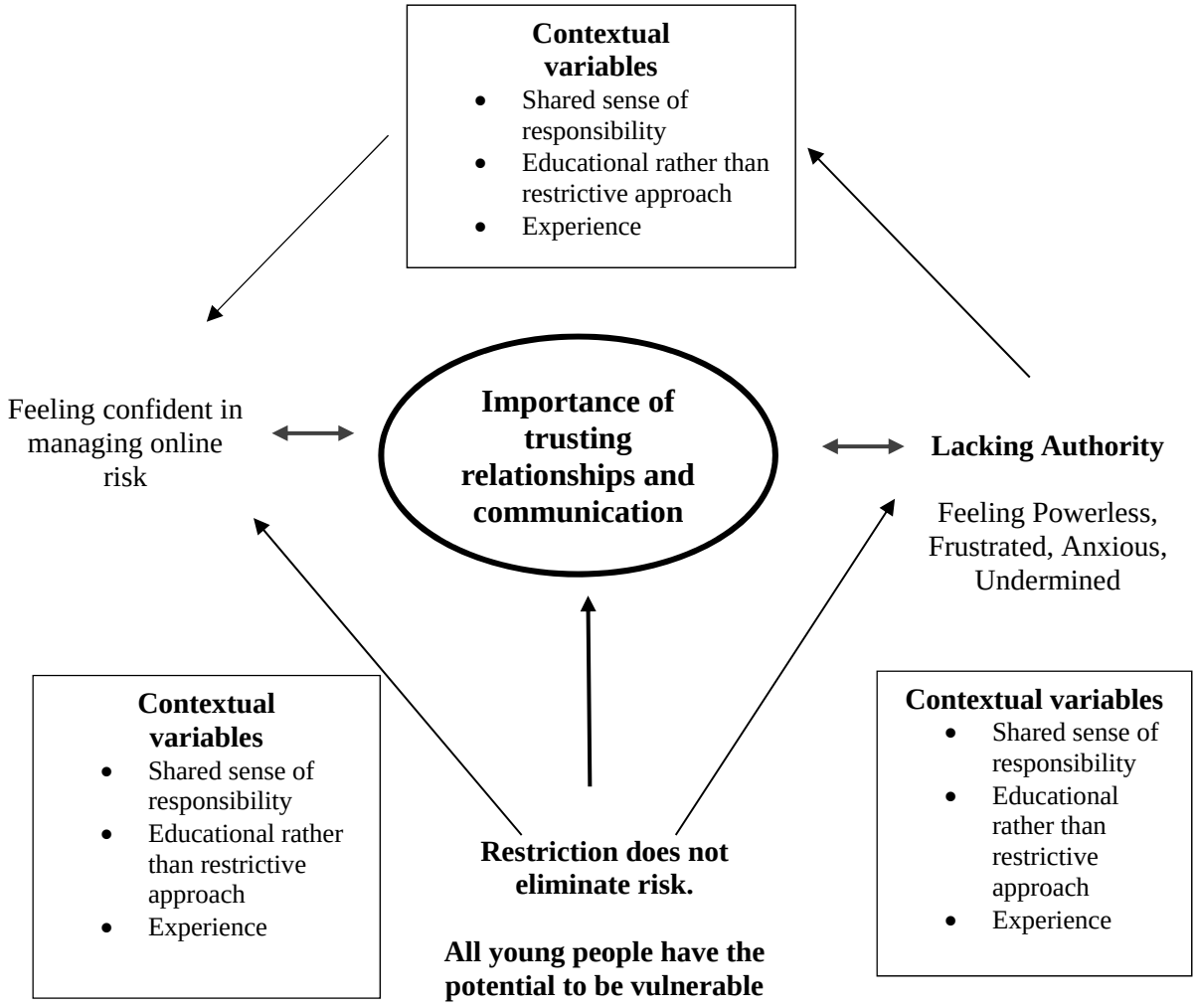

Figure A.1: A tentative model of professionals' experience of LAC's online use

Importance of trusting relationships and communication

The *Importance of trusting relationships and communication* was proposed as an overarching category as it was identified across all interviews and thus reflected the experiences of professionals across the two environments. Participants emphasised the importance of building positive, open and honest relationships with the young people to facilitate reciprocal respect and the professionals' ability to communicate with them about their online use. It was

perceived by a number of participants that communicating with the young people in a curious as opposed to authoritative manner was a helpful strategy to facilitate engagement and increase professionals' awareness of the young people's online activities. This therefore enhanced feelings of confidence and reducing feelings of powerlessness and anxiety for some.

Participant A: …. and there is techniques that we have learned such as "I'm just curious about what this is that you are talking about", it is in a less threatening way rather than "what is this, what are you doing online?"

It was also acknowledged by participants that as professionals they face a number of restrictions on their ability to monitor LAC's internet use, which led to some feelings of anxiety. These experiences were reflected more so in the discussions with professionals' from the council run care home. However, these professionals' identified that through developing positive trusting relationships, the young people appeared to be more open and inclusive of staff in regard to their online use. Subsequently, this increased the professionals' confidence in their safeguarding abilities and again appeared to reduce feelings of powerlessness and anxiety.

Participant D:…. we can't check computers, however we can be open and honest about what the dangers are online, what to look out for and having that open relationship allows them to be open with you about what they are doing on the internet.

It was also proposed by some that through developing these relationships, the LAC would be more likely to adhere to the safeguarding boundaries due to a perception of mutual respect. This reportedly facilitated professionals' opportunities to educate the young people about the potential online risks, online safety behaviours and appropriate online use. It also facilitated the opportunity to support the young people to access opportunities and use the internet to learn life skills. This is in line with research highlighting the

importance of communicating key messages about the potential online risks and safeguarding skills (La Valle et al., 2016).

Participant C: It all comes back to building the relationship, having that respect for each other that allows you to have conversations and educate them.

Participant E: She did come and say, you know "Oh, I've seen this on Facebook" and we are like "Well actually, it could be classed as bullying", so it was she, it was her that was doing it, but she came and showed us.

Direct or indirect disclosure from LAC to the professionals' as a result of these positive relationships also reportedly facilitated educational opportunities and opportunities for professionals to learn about online risks. This experience was highlighted across both the private and council run residential homes and is consistent with research which deemed younger generations to have greater levels of online confidence and skill than older generations (Wager et al., 2018).

Participant D: ….but thankfully because of the relationship we had she is very open to saying "I researched this on the dark web" and we were able to say "just be careful what you do online, and what do you do if somebody contacts you?"

Interviewer: How do you keep up to date with everything that's going on?
Participant M: I don't think I do, I don't think I do to be honest (laughs), through talking to young people.

All young people have the potential to be vulnerable

When asked whether "LAC are more vulnerable online than their peers", initial responses from professionals were inconsistent. However, what was consistent across both settings was the identification of the factors that may increase young people's vulnerabilities online. These included needs deficits and any form of trauma experience that may predispose negative perceptions of one's self, feelings of low self-esteem, low self-worth and low confidence. This is similar to the findings of previous research which has confirmed these to be factors associated with increased vulnerability in LAC (La Vella et al., 2016). It was perceived by some participants that LAC may be at risk of unconsciously exploring online options for meeting their needs. Alternatively, it was proposed that they may consciously engage in risky online practices due to the perception that the benefits of these experiences outweighed the risks. This increased professionals' anxiety in relation to their vulnerability online and is in line with theories of online disinhibition (Suler, 2004).

Participant C: They are looking for people that will accept them and be part of them and they are needing that connection. Not necessarily from the right people.

Participant E: So, I suppose in a way they probably would be more susceptible to the grooming because they want that, to feel special and they want that relationship, em and they want somebody to maybe just love them if that's what they're missing in their lives.

However, most participants across both settings held the view that all children have the potential to be vulnerable online because it is so accessible and embedded within society. It was also perceived that there are new online risks emerging constantly and that the online platform has provided a new avenue for offline risks to occur. It was highlighted by some professionals across both the private and council run residential homes that LAC may be less at risk than

some of their peers as a result of professionals' expertise, training and vigilance compared to some parents.

Participant E: …. maybe the parents aren't as receptive to them and these go online to find that relationship, so I don't think there are any more vulnerable.

Participant J: I think anybody is, everybody wants to be loved, or have friends, or feel wanted. So, I think everybody's vulnerable online.

In line with this some professionals across both settings believed that LAC may appear to be more at risk because of the attention that they experience and because they are recognised by professionals. It was perceived that there are likely a number of other young people who do not have the 'LAC' title who could be considered as, if not more, vulnerable than the young people in question.

Participant E: …. I don't think there are any more vulnerable. I think it's the fact that they are more under the spotlight. More scrutiny surrounding them.

Participant K: ….because I think although there's looked after children, I think there's still a lot of children in society that are probably worse than the kiddies that are in here and it's not been highlighted.

Monitoring by Restrictions does not reduce risk

All professionals reported either direct or indirect experience of a LAC experiencing risk online. This mostly related to experiences of cyberbullying, sending nude images of themselves, adding unknown individuals to their friends list and meeting online contacts offline, which was related to early adolescent females meeting older adolescent males. Some professionals, mainly those from the private care home, appeared confident in the restrictive monitoring approach. However, professionals from both settings

agreed that it was impossible to safeguard young people from all online risks no matter how restrictive an environment may be. A number of professionals were of the opinion that 'if there is a will there is a way' and that an overly restrictive approach may elicit risky internet seeking or deceitful behaviours from the young people, thus increasing their vulnerability online and reducing educational opportunities. Again, for some, this increased feelings of anxiety and safeguarding concerns. It was perceived that experience and training on warning signs would facilitate staff insight into these behaviours.

Participant B: …. because if there is a will there is a way …. they will just go out on the street and find somebody, so they are at an even bigger risk, em or they sneak in another phone like so it's going into that way again of not knowing and them not sharing that information with ya.

Participant D: …. I could see them meeting in with a young person or something and them saying "och I've got some internet in here in you come" and they would probably just be like "yeah".

In addition, personal internet-enabled devices evoked feelings of lack of authority in regard to monitoring for some professionals. This was again discussed in the context of the importance of trusting relationships to reduce professionals' safeguarding anxieties.

Participant B: …. So, like if she really wanted to go on something that she couldn't get on like she would just be going down to the shop and getting it.

Some professionals, mainly those from the council run residential home, perceived that a less restrictive approach facilitated the development of an open and trusting relationship with the LAC. This increased their perceived ability for LAC to communicate with staff when concerned or experiencing harm online. Additionally, it was recognised across both settings that blocking

inappropriate sites would not reduce the risk that LAC may encounter on sites that are considered appropriate.

Participant B: …. Or if we hadn't been providing the internet and she just had her phone would she have been, so you know, that, like, thinking "Oh it has to be kept a secret" kinda thing?.

Participant L: ….but her talking to other boys or doing that, you wouldn't be able to filter that anyway.

Finally, it was also reported by professionals from both settings that being in care offers opportunities for LAC to learn how to benefit from the online environment and to learn life skills that they can utilise post care. Some professionals highlighted that restrictive practices can have a negative impact on this.

Participant G: …. they're all blocked…... So that becomes really frustrating ….You cannae even YouTube to see how to unblock the hoover, so for them preparing to go into their own independent accommodation.

Lacking Authority

A number of the participants reported that their WIFI restrictions were monitored by an external department. Professionals from the council run care home proposed that this elicited feelings of frustration and increased anxiety in relation to safeguarding. It was also perceived by these participants to infringe on their abilities to monitor online use in a person-centred manner. Difficulties were reported in terms of turning off the internet and the consequences that this would hold for all the young people within the home, which was not deemed to be fair. The challenge of monitoring an internet which you have no control over in a manner which is suitable for a wide age of children was also highlighted. Once again, it was felt that trusting relationships,

communication with the LAC and increased experience reduced some of these anxieties for some of the professionals.

Participant D: …. it is in my opinion not very safe, there is no restrictions on it although they say there is there is no restrictions on it…. We need to be, in my opinion we need to have like a hub that we have control over, that we have parental access.

Participant G: …. So, there's a huge disparity in terms of bedtimes, appropriate sites they can look up, and we have no control over that whatsoever…. which is no good when a bedtime is 9 o'clock, and a young person refuses to hand in their phone, or they've got some other means of getting on the internet…. Then you've got no control over it whatsoever…It's very frustrating.

These external controls were also deemed by some to impact on professionals' authority to enforce rules and impose consequences, particularly in regard to those incidents that may be considered lower level but still defiant or risky. Wider team input is required to increase professionals monitoring authority, which invokes feelings of powerlessness in some professionals.

Participant B: …. if it was just like a minor risk of like going on you-tube and looking at something slightly inappropriate but nothing that is going to be a massive concern …. your hands are tied.

It was discussed that although professionals deemed to have 'corporate parenting responsibility', for many they were unable to impose the consequences that young people living at home would often experience. However, an emphasis on the relationship, a shared sense of responsibility

and experience of managing these situations did increase professionals' confidence in their role.

Participant E: I think parents would probably…. you know, phone off for a week or some sort of repercussion that we as corporate parents can't actually do …. so we have to work on the relationship and the trust.

It was also reported that some participants experienced feeling undermined by birth parents or carers who overruled safeguarding boundaries that the team had deemed as appropriate. This included removing the young people from the Wi-Fi. Some parents reportedly allowed them access whilst they were on home visits or continued to top up their mobile phones, further reducing feelings of confidence in their ability to safeguard.

Participant J: ….and they also have their phones, some of them have contracts paid by their families, so that is out with our control.

Additionally, some professionals across both settings perceived that positive risk taking should be encouraged whilst young people are in a supported environment to allow learning and educational opportunities and again prepare the young people for life after care. This is in line with research highlighting that exposure to risk can in fact support resilience building (Livingstone & Smith, 2014).

Participant H: ….you can't keep the internet off them forever because it's part of the social norm today and okay yes there are risks but it's risks that we have to learn to manage so let's positive risk take.

Contextual Variables

Three categories became apparent throughout the interviews which interlinked the above categories. These categories influenced how professionals moved between the highlighted categories and impacted on professionals' feelings of confidence and powerlessness in relation to managing LAC's online use.

Educational as opposed to restrictive approach

A number of participants across both settings were of the view that educating LAC about safe online practices, appropriate online behaviour and the long-term consequences of these behaviours whilst they are within the care system was a more effective approach to monitoring than restricting their access. This is supported by research which highlights that some LAC may lack the skills required to keep themselves safe online and access the available opportunities (Fursland, 2011). This would be particularly true if they did not have internet access within their previous home environment or have been out with the school environment and missed out on these learning experiences. This was discussed in the context again of eliciting deceitful, risky internet seeking behaviours, but also in regard to the professionals perceived responsibly for preparing these young people for leaving care and being able to safeguard themselves.

Participant B: …. my views are that one day he is going to be sixteen and have his own place and it is better to educate him along the way and try and solve the problem …. instead of depriving him from it and then putting him in a house when he's sixteen and him getting into all sorts of trouble.

Once again, the importance of managing this in relation to a focus on relationships and communication with the young people was emphasised.

Participant H: We try and base the service on relational practice …. So, it's about doing with and not to.

Shared responsibility

A perception of a shared sense of responsibility with immediate and wider multidisciplinary professionals further elicited feelings of confidence in monitoring LAC's internet use. This was consistent across both settings, regardless of the LAC's level of vulnerability or the restrictions that were in place. It was discussed in regard to sharing information on new online risks with the rest of their team and learning about risks from a company bulletin or team meetings. It was also discussed in the context of sharing concerns about a particular child with the team to ensure that appropriate safe guarding measures are implemented and the handovers between staff to ensure that concerns have been adequately passed on. This felt particularly important to ensure that meaning is not lost in the content of a written log.

Participant C: Yeah and also like bringing it up at team meetings and stuff, you know being like 'Oh I've noticed that such and such is getting an awful lot of messages from this guy and I don't know who he is so can we just keep an eye on it?'.

Participant E: We have like a closed group on Facebook so …. they'll pop it in this group so that everyone becomes aware them we'll talk about it at work at the team meeting.

It was further reported that being part of a wider team had a positive impact on professionals' confidence, particularly for those who saw themselves as an older generation who had limited technology or internet knowledge. It was discussed that some professionals would rely on 'young members of the team' to manage internet related tasks that they did not feel confident in attending to.

Participant J: Yeah, I think it helps that there's a wide range of staff here because we all know different things and we can all bring something else to the team

Participant L: Do I know how to go and search for what they have been up to? No, not particularly, but I know that that is something that my colleagues are pretty good at.

Experience

Finally, a number of professionals' across both settings reported that their safeguarding confidence stemmed from their own personal and professional experience in addition to their positive relationships. This is in line with research highlighting the importance of having an experienced team when safeguarding very vulnerable LAC (La Valle et al., 2016).

Participant B: I would say before probably a bit like nervous about the thought but now I'm like actually quite confident about it thinking, you know, we all do it, like, it's in a way, you know when you've got that relationships with them and they are sharing it with you, you don't feel as worried about it.

4. Discussion

This study aimed to explore professionals' experiences of LAC's online use and how it was managed within care settings. All professionals had some experience of LAC's negative online experience however, most of these could be understood in the context of 'normal adolescent risk-taking behaviour'. What also appeared to be evident was that LAC did not seem to be denied online opportunities. Although concerns were raised in regard to restrictions on professionals monitoring abilities and their ability to meet safeguarding responsibilities, this does not appear to have impacted on LAC

experiences of online risk. Therefore, considering the traumatic histories of the young people that these professionals have likely engaged with, this does not seem to suggest that LAC are more vulnerable online than some of their peers out with the care environment. It also seems to reject the assumption that's those deemed to be vulnerable offline are necessarily vulnerable online (Livingstone & Smith, 2014) and support a person-centred approach considering an individual's physical, emotional and psychological development (Livingstone and Palmer, 2012). However, professionals were in no way suggesting that LAC are not at all vulnerable online and concerns that their traumatic histories may enhance their willingness to engage in online risky behaviour is supported by literature which states that those with low-self-worth and poor social support are more amenable to attention and affection online (Mitchell, Finkelhor, & Wolak, 2001).

Although inconsistencies existed in professionals' experiences of restrictive monitoring practices, most participants shared the view that in line with previous research, it is not possible to safeguard children from all the potential risks that they may be exposed to (boyd & Marwick, 2009). It would have been interesting to explore this approach giving consideration to professionals age, qualification history and years of experience working with this population, however as noted above due to the rural location this was not possible in order to ensure anonymity. The opinion that monitoring by restriction reduced access to online opportunities, supports research highlighting that although online access can increase experiences of risk, it also increases the possibility of being able to experience online opportunities (Livingstone & Helsper, 2010). Therefore, this suggests that a balanced approach from professionals is required. This is also supported by professionals who advocated for an educational rather than restrictive approach to monitoring and research suggesting that the online environment may buffer some of the effects of risk-taking behaviour (Finkelhor, 2014). However, it is unlikely that a 'one size fits all' approach would be appropriate,

again supporting the need for a person-centred approach to monitoring online use.

All professionals acknowledged how embedded the internet has become within society, proposing that access may support LAC's ability to exist within their peer groups and facilitate feelings of inclusion and belonging, which supports existing research (Valkenburg & Peter, 2007). This has been highlighted in the trauma literature to be important for LAC in terms of managing their traumatic histories (La Valla et al., 2016). Additionally, in line with previous research, many of the LAC discussed within this study were not in main stream education and internet access was perceived to support communication and relationships (Boddy, 2013; La Valla et al., 2016). This may imply that LAC gain more from the affordance of online access than some of their peers. Given this and the findings highlighted above in regard to the internet access that these young people were reportedly afforded across both of the settings, again it does not appear that LAC were denied opportunities to access the online environment. Although difficulties in monitoring this use were highlighted at times, many of the management strategies suggested could mirror those used by parents within a home environment. Therefore, this access does not necessarily need to be monitored in a manner that is overtly different from their peers in line with findings highlighted in the existing evidence base (Sen, 2016).

Research highlighting the increased competence and awareness of the younger generation in regard to the online environment (Wager et al., 2018) supports professionals' reports of learning about the online environments and new risks from the young people. This suggests that current practice may in fact be informed by professionals' own online competencies and comprehension as opposed to a generic 'internet safety' training. However, professionals' did highlight that given the magnitude of the internet and how embedded it is within many aspects of life, it is often considered within other training events such as general sexual exploitation training. Nevertheless, this

finding appears to contradict previous research suggesting that LAC lack appropriate digital skills or knowledge (Fursland, 2011), although this does not necessarily propose that LAC are using this knowledge in a manner which is safe. This concern was raised by some professionals and is in line with theories of online disinhibition (Suler, 2004) and research which acknowledges that children will freely engage with perpetrators online even though they have not concealed their age or identity (Taylor, 2010).

Additionally, some professionals shared concerns relating to 'sexting' and young people exploring pornography online. It is important to consider these in the context of what would be perceived as 'normal' for today's generation of young people and that this may not be parallel to the normative perceptions of some professionals. Additionally, concerns were raised in regard to safeguarding individuals of varying ages with one generic monitoring approach. These anxieties were related mainly to professionals who worked within a relatively new residential care home where the view was that adaptions to the monitoring practices were continuing to be made in order to devise a more efficient approach. The fact that participants came from either a private or council run care home and that one was long standing and the other relatively new, may have accounted for the apparent difference in feelings of anxiety and powerlessness. This difference may also have accounted for some of the professionals other contrasting experiences and supports research highlighting that there are likely inconsistencies across the profession (Simpson, 2013).

The tentative model that was developed from the study data emphasised the importance of trusting relationships and communication. This was not only in relation to increasing professional confidence in monitoring online use, but also in regard to assisting young people to learn appropriate online behaviours and safety skills that can be used whilst they are in the care setting and beyond. Previous literature supports an increased emphasis on professionals' relationships with LAC (Morgan, 2012; Ofsted, 2011),

highlighting the positive impact in supporting them to better cope with their previous traumas (Care Inquiry, 2013), build secure attachments, develop self-esteem and a sense of identify and belonging (Ryan, 2012; Care Inquiry, 2013). This is also in line with research which emphasised the importance of building trusting relationships with young people in care in order for them to accept the support that is available (La Valle et al., 2016). Thus, these findings should again be considered when developing practice guidelines.

4.1. Future Research

Further research is required from the LAC's perspective to explore their online experience in order to fully comprehend whether they are indeed more vulnerable online than their peers, as this research is limited within the existing literature (May-Chahal et al., 2018).

Additional research may also explore professional's experiences of LAC's opportunities and risks online considering the professionals demographic details. This may also be interesting to explore from a more populated area for comparison and generalisability of findings. Additional research in this area would also allow further exploration of the tentative model proposed in this study.

4.2. Practice Implications

This study highlights the importance of a comprehensive understanding of the potential risk factors by those who develop policy and practice guidelines, whilst not instinctively assuming that all LAC are of the same level of risk or more vulnerable than their peers. International consensus on terminology would facilitate utility of evidence and this should be considered in order for more concrete comparisons to be made across the evidence base.

Findings from this study suggest that a person-centred approach to monitoring LAC's online use is most appropriate. However, what was also

highlighted was that LAC's online use does not appear to be inherently different from that of their peers and as such does not require to be monitored in vastly different manner. This should be considered by those that have responsibilities for developing policies or guidelines.

Given that at times monitoring practices were informed by professional's connections to the young people, these young people would likely give valuable contributions in regard to their experience and knowledge of online risks. Thus, they should be included and their experiences considered by those with policy and practice guideline responsibility.

Finally, although there were inconsistencies in monitoring practices, participants did highlight the importance or relational practice. This approach to monitoring should also be considered by those with policy responsibilities in terms of emphasising that professionals should have positive, open and trusting relationships with the young people in order to best support their access to online opportunities, over and above efficient internet restrictions. This would also allow them the opportunity to educate LAC about the potential risks and long-term consequences of online use. This should also be considered in terms of ensuring that those with monitoring responsibilities feel supported and confident within their roles to ensure that they can manage the above efficiently.

4.3. Limitations

The current study has a number of limitations. This research is only representative of the LAC's experiences that professionals were aware of, which may not be representative of all LAC's experiences. Additionally, this research was conducted in a small rural area, therefore it may not be representative of the experiences or opinions of professionals who work in larger cities or secure residential accommodation. Future research to explore a wider variety of residential professionals' experiences would be beneficial

to establish whether substantial differences exist. Additionally, this study may be influenced by participant bias in terms of whether the experiences of those that were approached to participate in the study differed from those professionals who were not invited to take part. Also, as a result of the small sample size again these findings may not be representative of all professional's experiences.

Furthermore, although Charmaz's (2014) method suggests 'sampling to saturation' whereby researchers continue interviewing until their theoretical categories are 'saturated', this was not possible due to the small pool of potential participants within the local area. However, research has proposed that saturation often occurs with a sample of between 10 to 30 interviews (Thomson, 2011) and that theoretical saturation occurs when sufficient data has been gathered to devise a comprehensive and convincing theory (Morse,1995). This supports the value of the data that has been collected and the tentative model that has been proposed although further research would be required to develop this model into one that is more definitive. Additionally, due to the chosen methodology the results of this study are influenced by the views and experiences of the researchers. However, coding was checked by a qualified psychologist who has extensive research experience and reflective memos were written throughout to reduce the influence of researcher bias.

Finally, of note, participants often placed emphasis on online risks, which is likely representative on the professionals' experiences and perhaps reflective of the position within the discipline. Further research would be beneficial to explore professionals' experience of LAC's online use to explore whether competing perspectives exist.

4.4. Conclusion

In conclusion, findings of this study suggest that the relationship between managing online opportunities and risks is complex. It was proposed that all young people have the potential to be vulnerable online, although LAC can appear increasingly so as a result of the scrutiny they face. This is supported by the largely normative experiences of online risks that were disclosed by professionals and the acknowledgement that restricting online use may subsequently increase LAC's risky behaviours. An educational as opposed to restrictive approach is proposed to be most effective in terms of offering learning and educational opportunities and preparing LAC for life post care. Professionals stressed the importance of developing positive trusting relationship with LAC to be able to achieve the above, in addition to increasing their safeguarding confidence. However further research is required within this area to further cement these findings and better inform the future direction of safe guarding and monitoring policy and practices for LAC.

5. Empirical References

Ballantyne, N., Duncalf, Z., & Daly, E. (2010). Corporate parenting in the network society. *Journal of Technology in Human Services, 28*(1-2), 95-107. DOI: 10.1080/15228831003759612

Baumgartner, S. E., Valkenburg, P. M., & Peter, J. (2010). Unwanted online sexual solicitation and risky sexual online behavior across the lifespan. *Journal of Applied Developmental Psychology, 31,* 439–447. DOI: 10.1016/j.appdev.2010.07.005

Berelowitz, S., Clifton, J.M., Firimin, C., MBE, Gulyurtlu, S., & Edwards, G. (2013). *If only someone had listened: Office of the Children's Commissioner's Inquiry into Child Sexual Exploitation in Gangs and Groups: Final Report.* London: OCC.

Boddy, J. (2013). *Understanding Permanence: A Review of Research for the Care Inquiry*. London: The Care Inquiry. Retrieved January, 11th, 2018, from https://thecareinquiry.files.wordpress.com/2013/04/understanding-permanence-for-lac.pdf

boyd, d., & Marwick, A. (2009). The Conundrum of visibility. *Journal of Children and Media, 3*, 410-414. DOI.org/10.1080/17482790903233465

Brå. (2007). *The online sexual solicitation of children by adults in Sweden* (2007:11). Stockholm: Swedish National Council for Crime Prevention. Retrieved January, 11th, 2018, from https://www.bra.se/download/18.cba82f7130f475a2f1800024473/1371914733988/2007_11_online_sexual_solicitation_of_children.pdf

Brown, S., Brady, G., Franklin, A., Bradley, L., Kerrigan, N., & Sealey, C. (2016). *Child sexual abuse and exploitation: understanding risk and vulnerability*. London: Early Intervention Foundation. Retrieved from http://www.eif.org.uk/publication/csa-risk-and-vulnerability/

Buckingham, D. (2007). *Beyond Technology: Children's Learning in the Age of Digital Culture.* Polity Press, Cambridge.

Care Inquiry. (2013). *Making not breaking: Building relationships for our most vulnerable children.* The Care Inquiry. Retrieved March, 9th, 2018, from https://www.adoptionuk.org/sites/default/files/documents/care-inquiry-full-report-april-2013.pdf

CEOP. (2013). *CEOP Thematic Assessment. The Foundations of Abuse: A thematic assessment of the risk of child sexual abuse by adults in institutions.* National Crime Agency. Retrieved February, 11th 2018, from: http://www.nationalcrimeagency.gov.uk/publications/49-ceop-institutions-thematic-assessment/file.

Chang, F. C., Chiu, C. H., Miao, N. F., Chen, P. H., Lee, C. M., & Chiang, J.T. (2016). Predictors of unwanted exposure to online pornography and online sexual solicitation of youth. *Journal of Health Psychology, 21*(6), 1107-1118. DOI.org/10.1177/1359105314546775

Charmaz, K. (2014). *Constructing Grounded Theory. 2nd ed.* London: Sage.

Dedoose Version 8.0.35, web application for managing, analysing and presenting qualitative and mixed methods research data (2018). Loss Angeles, CA: SocioCultural Research Consultants, LLC (www.dedoose.com).

Dombrowski, S. C., LeMasney, J. W., Ahia, C. E., & Dickson, S. A. (2004). Protecting children from online sexual predators: technological, psychoeducational, and legal considerations. *Professional Psychology: Research and Practice, 35,* 65–73. DOI: 10.1037/0735- 7028.35.1.65

Finkelhor, D. (2014). Commentary: Cause for alarm? Youth and internet risk research – a commentary on Livingstone and Smith (2014). *The Journal of Child Psychology and Psychiatry, 55*(6), *655-658.* DOI.org/10.1111/jcpp.12260

Fursland, E. (2010). *Facing up to Facebook: A Survival Guide for Adoptive Families.* London: British Association of Adoption and Fostering.

Fursland, E. (2011). *Facing up to Facebook: Foster Care and Social Networking: A Guide for Social Workers and Foster Carers.* London: British Association of Adoption and Fostering.

Glaser B.G., & Strauss, A.L. (1967). T*he discovery of Grounded Theory: Strategies for Qualitative Research*. United States of America: Aldine Transaction.

Glaser B.G., & Strauss, A.L. (1978). *Theoretical Sensitivity. Advances in the Methodology of Grounded Theory*. California: The Sociology Press, Mill Valley.

La Valle, I., Graham, B., & Hart, D. (2016). *Child sexual exploitation: support in children's residential homes: Research report*. Department for Education. Retrieved from: https://www.gov.uk/government/publications/child-sexual-exploitation-support-in-childrens-homes.

Livingstone, S., & Helsper, E.J. (2007). Taking risks when communicating on the Internet: the role of offline social-psychological factors in young people's vulnerability to online risks. *Information, Communication and Society, 10*(5) 619-644. DOI: 10.1080/13691180701657998

Livingstone, S. (2009). *Children and the internet.* Cambridge: Polity Press.

Livingstone, S., & Brake, D. R. (2010). On the rapid rise of social networking sites: New findings and policy implications. *Children & Society, 24*(1), pp. 75-83. DOI: 10.1111/j.1099-0860.2009.00243.x

Livingstone, S., & Helsper, E. (2010). Balancing opportunities and risks in teenagers' use of the internet: the role of online skills and internet self-efficacy. *New media & society*, *12*(2), 309-329. DOI.org/10.1177/1461444809342697

Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children*. *Full Findings.* London: EU Kids Online, LSE.

Livingstone, S., & Palmer, T. (2012). *Identifying vulnerable children online and what strategies can help them.* London: UK Safer Internet Centre.

Livingstone, S., Olafsson. K., O'Neill, B., & Staksrud, E. (2013). The social networking skills and practices of 'under-age' users: lessons for evidence-based policy. *Journal of Computer-Mediated Communication, 18*(3), 303-320. DOI: 10.1111/jcc4.12012

Livingstone, S., Mascheroni, G., Ólafsson, K., & Haddon, L. (2014). *Children's online risks and opportunities: Comparative findings from EU Kids Online and Net Children Go Mobile*. Retrieved January, 12th, 2018, from: http://eprints.lse.ac.uk/60513/1/__lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_EU%20Kids%20Online_EU%20Kids%20Online-Children%27s%20online%20risks_2014.pdf

Livingstone, S., & Smith, P.K. (2014). Annual Research Review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry, 55*(6), 635-654. DOI: 10.1111/jcpp.12197

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favourable and unfavourable environments: Lessons from research on successful children. *American Psychologist, 53,* 205-220. DOI: 10.1037/0003-066X.53.2.205

May-Chahal, C., Mason, C., Rashid, A., Walkerdine, J., Rayson, P., & Greenwood, P. (2014). Safeguarding Cyborg Childhoods: Incorporating the on/offline Behaviour of Children into Everyday Social Work Practices. *British Journal of Social Work, 44,* 596-614. DOI.org/10.1093/bjsw/bcs121

May-Chahal, C., Palmer, E., Dodds, S., & Milan, S. (2018). *Rapid Evidence Assessment: Characteristics and vulnerabilities of victims of online-facilitated child sexual abuse and exploitation*. Lancaster: Lancaster University.

Mishna, F., Cook, C., Saini, M., Wu, M., & MacFadden, R. (2011). Interventions to Prevent and Reduce Cyber Abuse of Youth: A Systematic Review. *Research on Social Work Practice, 21*(1), 5-14. DOI.org/10.1177/1049731509351988

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2001). Risk factors for and impact of online sexual solicitation of youth. *Journal of the American Medical Association*, *285*, 3011-3014.

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2007). Youth internet users at risk for the most serious online sexual solicitations. *American Journal of Preventive Medicine, 32,* 532–536. DOI: 10.1016/j.amepre.2007.02.001. DOI.org/10.1016/j.amepre.2007.02.001

Montiel, I., Carbonell, E., & Pereda, N. (2016). Multiple online victimization of Spanish adolescents: Results from a community sample. *Child Abuse and Neglect, 52*, 123–134. DOI: 10.1016/j.chiabu.2015.12.005

Morgan, R. (2012). *After care: Young people's views on leaving care*. Manchester: Ofsted. Retrieved January, 13th, 2018, from http://dera.ioe.ac.uk/13959/

Morse, J. M. (1995). The significance of saturation. *Qualitative Health Research*, *5*(2), 147-149.

Myers, M. D. (2009). *Qualitative research in business & management*. California, Thousand Oak: Sage.

NICE. (2017). *Child Abuse and Neglect; recognising, assessing and responding to abuse and neglect of children and young people.* Retrieved March, 13th, 2018, from https://www.nice.org.uk/guidance/ng76

NSPCC, (2016). *'What should I do?'. NSPCC helplines: responding to children's and parents' concerns about sexual content online*. Retrieved March, 13th, 2017, from: https://www.nspcc.org.uk/globalassets/documents/research-reports/what-should-i-do-nspcc-helplines-responding-to-childrens-and-parents-concerns-about-sexual-content-online.pdf

Ofsted, (2011). *Ages of concern: Learning lessons from serious case reviews.* London: Ofsted.

Olson, L. N., Daggs, J. L., Ellevold, B. L., & Rogers, T. K. K. (2007). Entrapping the innocent: toward a theory of child sexual predators' luring communication. *Communication Theory, 17,* 231– 251. DOI: 10.1111/j.1468-2885.2007.00294.x

Quayle, E., Jonsson, L., & Loof, L. (2012). *Online behavior related to child sexual abuse.* ROBERT project. Retrieved January, 12th, 2018, from http://www.childrenatrisk.eu/robert/public/Interviews_with_affected_young_people.pdf

Ryan, M. (2012). *How to make relationships matter for looked after young people. A handbook.* London: National Children's Bureau.

Sen, R. (2016). Not all that is solid melts into Air? Care – Experienced Young People, Friendship and Relationships in the 'Digital Age'. *British Journal of Social Work,* 46, 1059–1075. DOI.org/10.1093/bjsw/bcu152

Simpson, E. (2013). A Divergence of opinion: how those involved in child and family social work are responding to the challenge of the internet and social media. *Child and Family Social Work,* 94-102. DOI.org/10.1111/cfs.12114

Soo, D., & Bodanovskaya, Z. (2012). Risk factors of becoming a victim of internet related sexual abuse. In M. Ainsaar., & L. Lööf (Eds.), *Online behaviour related to child sexual abuse: Literature report.* Robert Project. Retrieved from http://www.childrenatrisk.eu/robert/public/Online_behaviour_related_to_sexual_abuse.pdf

Strauss, A., & Corbin, J. (1990). Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, California: Sage.

Suler, J. (2004) Online disinhibition effect. *CyberPsychology and Behavior*, *7,* 321–6.

Taylor, J. (2010). The spiral of the online sex offender and how this can be effectively policed. Online Child Protection: Future Technologies for Policing the Internet, 27 October. London. Retrieved January, 3rd, 2018, from: www.comp.lancs.ac.uk/isis/index_files/Conference.htm.

Thomson, S.B. (2011). Sample Size and Grounded Theory. *Journal of Administration and Governance, 5*(1), 45-52.

Valkenberg, P.M., & Peter, J. (2007). Online Communication and Adolescent Well-Being: Testing the Stimulation Versus the Displacement Hypothesis. *Journal of Computer-Mediated Communication, 12*(4), 1169-1182. DOI.org/10.1111/j.1083-6101.2007.00368.x

Valkenberg, P.M., & Peter, J. (2009). Social consequences of the internet for adolescents: a decade of research. *Current Directions in Psychological Science,* 18(1), 1-5. DOI.org/10.1111/j.1467-8721.2009.01595.x

Villacampa, C., & Gómez, M. (2017). Online child sexual grooming. *International Review of Victimology, 23*(2), 105-121. DOI.org/10.1177/0269758016682585

Wager, N., Armitage, R., Christmann, K., Gallagher, B., Ioannou, M. Parkinson, S., Reeves, C. Rogerson, M., Synnott, J. (2018). *Rapid evidence assessment: quantifying the extent of online-facilitated child sexual abuse: Report for the Independent Inquiry into Child Sexual Abuse*. Retrieved January, 10th, 2018, from https://www.iicsa.org.uk/key-documents/3722/view/Rapid%20Evidence%20Assessment%20Quantifying%20The%20Extent%20Of%20Online%20Facilitated%20Child%20Sexual%20Abuse.pdf

Whittle, H., Hamilton-Giachritis, C., Beech, A., & Collings, G. (2013). A review of young people's vulnerabilities to online grooming. *Aggression and Violent Behavior, 18, 135-146.* DOI.org/10.1016/j.avb.2012.11.008

Appendices

A.1: Authors Guidelines for Computers in Human Behavior

COMPUTERS IN HUMAN BEHAVIOR

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Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

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Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. . In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For

more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

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The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

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Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Supplementary material

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Research data

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. Before submitting your article, you can deposit the relevant datasets to *Mendeley Data*. Please include the DOI of the deposited dataset(s) in your main manuscript file. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

Data in Brief

You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for *Data in Brief* as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to *Data in Brief* where it will be editorially reviewed and published in the open access data journal, *Data in Brief*. Please note an open access fee of 500 USD is payable for publication in *Data in Brief*. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

Data statement

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by

stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

A.2: Protocol for systematic review

Systematic Review of the risk factors associated with online grooming of children and adolescents

Question: What risk factors increase children and adolescent's vulnerability to being groomed online?

Aim: Systematically explore the existing literature on the risk factors and characteristics that make children and adolescents vulnerable to online sexual grooming. What are the characteristics of children who are groomed online.

Background
Existing literature has identified a number of risk factors which increase vulnerability to online sexual grooming. Although the majority of research suggests being female and adolescent are two risk factors that contribute towards a young person's vulnerability to online grooming, these findings are not consistent across the literature. Additional risk factors identified include high levels of internet access, online risk-taking behaviour, lack of parental monitoring, low mood and trouble within the school, friendships or home contexts.

Rationale: Whittle et al. (2013) conducted a review of 'young people's vulnerabilities to online grooming' in the context of Bronfenbrenner's (1979) ecology of human development - a system of interdependent environments that exert influence directly and indirectly on the child's experience. Although this review is informative in exploring an area where there is limited research, it was not systematic and did not critically appraise the quality of the studies reviewed and provided limited information of the methods used for the review. There was also no clear definition of what was meant by the term 'grooming' and this review included studies related to online risk between 2000 and 2012. A systematic review of the existing literature in this area would be beneficial to aid our understanding of these risk factors, influence policy and provision related to children and adolescents who are vulnerable and identify gaps for further research.

Definition: There is no clear consistent definition of online sexual grooming or solicitation shared within the literature. Wolak et al. (2006) defined online sexual solicitation as "requests of youth to engage in sexual activities or sexual talk or give personal sexual information that were unwanted or, whether wanted or not, were made by an adult" (p 3). This definition seems to have been encapsulated within legal framework for online grooming and will thus be used as the definition within this study.

Search:

An initial search was completed of the Cochrane Database of Systematic Reviews (CDSR), PROSPERO the International prospective register of systematic reviews, the Campbell Collaboration, the Database of Abstracts of Reviews of Effects (DARE) and the general literature. This search indicated that to date there does not appear to be a systematic review of this question.

Databases: A search will be conducted for articles published on EMBASE (1980-current), PsycINFO (1806- current), Medline (1946- current), Applied Social Sciences Index and Abstracts (ASSIA; 1987 - current), Social Services Abstracts (1979-current), ERIC (1966-current), and CINAHL (Cumulative Index of Nursing and Allied Health Literature; 1937- current).

Grey Literature: A search will be conducted for unpublished articles using ProQuest Dissertations & Theses Global.

Search Terms: The following search terms will be used: (Child* OR Adolsc* OR Youth* or Schoolchild* OR Teen* OR Young person* OR Young people) AND (Online OR Internet OR Website*) AND (Groom* OR Sex* Solic* OR Lur* OR Cybersolicitation*). The proximity command will be employed so that any words within the 2nd and 3rd string of search terms have to appear within 5 words of each other, although can appear in any order.

Duplicates will be removed and then an initial screening of titles and abstracts will be conducted to determine whether the paper meets the inclusion criteria described below. Non-appropriate articles will be discarded, and full text of the remaining articles will be obtained. A manual search of the reference lists of articles that have been selected for inclusion will be conducted. Any duplicate articles will not be included.

Inclusion and Exclusion Criteria:

	Inclusion	Exclusion
Population	Children under the age of 18 Where adult samples are combined with minors', contains data that can be extracted that is relevant to online grooming with those under 18.	Adults over the age of 18 Where adult samples are combined with minors', contains data that cannot be extracted that is relevant to online grooming with those under 18.
Intervention/ Exposure		
Comparison	Where online grooming is combined with offline grooming, contains data that can be extracted that is relevant to online grooming with those under 18.	Where online grooming is combined with offline grooming, contains data that cannot be extracted that is relevant to online grooming with those under 18.
Outcome measure	Studies that include primary or secondary outcome measures that examine characteristics or behaviours associated with 'online grooming', 'online sexual solicitation' or 'luring' which is consistent with Wolak et al's (2006) definition above. The statistical analysis between the risk and factor and online grooming needs to be clearly provided.	Studies that include primary or secondary outcome measures that do not examine characteristics or behaviours associated with 'online grooming', 'online sexual solicitation' or 'luring' or, which report only prevalence rates, or which use a definition that is not consistent with Wolak et al's (2006) definition above or solely stated a prevalence rate. Studies which refer to offline as opposed to online grooming.

	If projects include data from an existing dataset to measure the same characteristics of online grooming, the primary study will be included. Risk factors were required to be adequately defined or described as such.	If projects include data from an existing dataset to measure the same characteristics of online grooming, the secondary study will be excluded. Studies which do not give a definition or description what is considered 'online grooming' Studies which discuss the use of online grooming to facilitate offline contact. Studies that stated prevalence without statistical significance of association were excluded.
Study Design	Quantitative studies Cohort studies Cross sectional studies	Qualitative Studies Qualitative Case Studies
Types of articles	English language Primary studies Peer reviewed articles Dissertations/thesis Papers published after 2000.	Book/chapter Posters Conference abstracts Brief reports Rapid Communications Literatures Letters to editors Letter to authors Non-English written papers Papers published before 2000 Non-published studies

Types of study to be included
Quantitative studies that define or describe risk or vulnerability characteristics associated with child and adolescent victims of online grooming.

Data extraction
A data extraction protocol form will be developed using Microsoft Excel. The following data will be extracted: author, title, statement of aim, definition or description of grooming that was used, population, method analysis and key findings. Additional descriptive characteristics including country of origin, total population, percentage of male and female participants, age of participants and setting of study will be extracted in a separate table.

Quality assessment
A quality assessment tool will be used to rate the studies which meet the inclusion criteria. Two independent raters will review a minimum of 50% of the studies.

Although a number of existing quality appraisal tools exist, it was perceived that none were an exact match for the information that was required to be critically appraised within this study. Research suggests that tools often lack transparency in regard to how authors have decided on quality ratings (Dixon-woods, 2004) and often depth to systematically assess research is lacking (Crow & Sheppard, 2010). Scales based on numerical summary scores have been criticised in regard to their ability to assess quality (Greenland & O'Rourke, 2001) and how weight is attributed to each item. There are also concerns that different scales would likely result in different quality conclusions when scoring an individual study is supported by Cochrane Bias Methods Group and Statistics Methods Group whom suggest refraining from using summary scores (Juni, Witschi, Bloch & Egger, 1999; Higgins & Altman, 2008). Similar concerns have been raised in regard to summary judgement checklist tools with evidence supporting a checklist approach which concentrate on few, fundamental, likely sources of bias (Sanderson, Tatt & Higgins, 2007). Suggested essential domains for inclusion include suitable selection of participants, suitable variable measurements and control of confounding variables, plus appropriate internal and external validity, data collection methods and analysis (Hannes, 2011). Thus an adapted tool was devised based on consideration of other well validated tools (Briggs, 2017; CEBM, 2014, CASP, 2013), Cochrane guidelines (Hannes, 2011) and tools used in similar studies (Capaldi, Knoble, Shortt & Kim, 2012; McCann & Brown, 2018). Responses were scored as either 'yes', 'unclear' or 'no' and those studies with a higher instance of 'yes' answers were deemed to be of a higher quality. This tool was peer reviewed by two independent reviewers and adjustments were made.

References:

Included in Empirical reference list.

A.3 : Critical Appraisal tool

Name of researcher:

Name of paper:

Adapted Critical Appraisal Tool.

1) The aims/objectives of the study are clearly stated	
Well covered	The aims/objectives of the study are clearly addressed and well described.
Adequately addressed	The aims/objectives of the study are stated but are less clear.
Poorly addressed	The aims/objectives of the study are difficult to identify.
Not addressed/ reported	The aims/objectives of the study are not reported.

2) The study used an appropriate research design to address the research questions	
Well covered	The study used a longitudinal design.
Adequately addressed	The study used a cross-sectional design.
Poorly addressed	The study did not use an appropriate research design to address the research questions.
Not addressed/ reported	The design of the study is not reported.

3) The study population is clearly specified	
Well covered	There is a clear inclusion/exclusion criteria for the population being studied including sociodemographic characteristics and accessibility of the internet.
Adequately addressed	There is reference to some sociodemographic characteristics but no clear inclusion/exclusion criteria is reported and/or there is no clear information regarding accessibility of the internet.
Poorly addressed	A limited description of the included population is given.
Not addressed/ reported	There are no details of the research population.

4) The sample of participants is representative of the population of children and young people who have access to the online environment?	
Well covered	The recruitment method is clear and well designed and the source population would be considered representative of all children and young people who would have access to the online environment.
Adequately addressed	There are some details regarding the recruitment of the study population to allow the population to be deemed representative of most children and young people who have access to the online environment in the area in which the study is conducted.
Poorly addressed	A limited description of the included population is given and it is unclear whether the population would be considered representative of children and young people who have access to the online environment.
Not addressed/ reported	No details have been given regarding the representativeness of the study population.

5) The method of recruitment gave consideration to selection bias	
Well covered	The study clearly stated how participants were recruited and also clearly reported consideration to potential bias that may have occurred during selection.
Adequately addressed	The study gives some information regarding how participants were selected and limited consideration to the potential of selection bias.
Poorly addressed	The study discusses how participants were recruited however gives no attention to the possibility of selection bias.
Not addressed/ reported	The study does not address how participants were selected and gives no consideration to selection bias.

6) The study sample size was based on pre-study consideration of statistical power	
Well covered	The study reports that a prior power calculation was conducted to determine the required sample size. Power was achieved.
Adequately addressed	The study failed to report a prior power calculation however post hoc power analysis demonstrates that the sample size is appropriate for power to be achieved.
Poorly addressed	A Power calculation is reported however the study did not meet an adequate sample size to achieve power.
Not addressed/ reported	There is a lack of information reported which prevents a power calculation from being determined.

7) The study achieved a sufficient response rate	
Well covered	The study reports a response rate of 70% or over.
Adequately addressed	The study reports a response rate of between 50% and 69%.
Poorly addressed	The response rate of participation is below 50%.
Not addressed/ reported	The response rate is not clearly reported.

8) The measures used to assess online sexual grooming or the proposed associated risk factors/characteristics are valid and reliable	
Well covered	High reliability and validity of the measures has been reported and the measures are standardised. The measures are reported to be valid for the population considered in the study.
Adequately addressed	Reasonable reliability and validity of the measures has been reported. The measure may not be standardised. The study has given consideration to the measures in relation to the sample population.
Poorly addressed	The reliability and validity of the measures used is limited or questionable and/or the measure is not suitable for the sample population although the measure may be standardised.
Not addressed/ reported	No valid measure has been used or the psychometric properties for the measures have not been reported.

9) The statistical analysis is appropriate for the study design	
Well covered	The study has used appropriate statistical analysis for the design of the study. Where appropriate the study has reported confidence intervals, probability values and effect sizes for the individual reported variables.
Adequately addressed	The statistical analysis used in the study is appropriate but the information that is reported is less detailed and effect sizes may not have been reported.
Poorly addressed	The study has not used appropriate statistical analysis for the study design.
Not addressed/ reported	Quantitative analysis was not reported or was not conducted.

10) The results of the study are clearly outlined with reference to the original research aims/objectives	
Well covered	The study reported clear links between the original research aims/objectives and the results. Previous research has been considered in the reporting of the results.
Adequately addressed	The study has outlined the results however there are limited links made to the original research aims/objectives. There is limited consideration to the existing evidence base.
Poorly addressed	The results of the study have been poorly described and there has been no link made back to the original research aims/objectives.
Not addressed/ reported	Results are not reported.

11) The generalisability of the findings has been discussed	
Well covered	The study has paid considerable attention to the generalisability of the findings. This may include whether the sample was representative of the studied population and whether the measures of online sexual grooming used are comparable to other studies.
Adequately addressed	The study has given partial consideration to the generalisability of the findings and has considered this in regard to other studies.
Poorly addressed	There has been limited insight reported into the generalisability of the findings and those that have been made have not been expanded upon.
Not addressed/ reported	The study has failed to consider the generalisability of the findings.

12) The limitations of the study have been reported	
Well covered	The study has reported all significant limitations and has given consideration to the potential effect of these.
Adequately addressed	The study has made reference to some of the potential limitations and some consideration to the potential effect of these has been reported.
Poorly addressed	The study has made little reference to the limitations but has not considered the potential effect of these.
Not addressed/ reported	The study has given no consideration to limitations.

Operationalisation of Overall Quality Ratings (Morris, 2015)

Excellent	All or the clear majority of the quality criteria have been well covered. In addition, it is considered *very unlikely* that the limitations of the study have affected the findings or conclusions drawn.
Very Good	The considerable majority of the quality criteria have been well covered or adequately addressed. It is considered *unlikely* that the limitations of the study have affected the findings or conclusions
Reasonable	Most of the quality criteria have been well covered or adequately addressed, however, the limitations of the study are thought to have modestly affected the study's findings or conclusions.
Limited	Most of the quality criteria have not been well covered or adequately addressed and/or it is considered *likely* or *very likely* that the study's limitations have affected the findings

A.4: Table of excluded full reviewed papers.

Total number of articles excluded (based on full paper screen)	21
Brief report/rapid communication	Wolak, Finkelhor &Mitchell (2008).
Could not elicit information related to the online grooming of children and young people	Gamez-Guadix, Santisteban & Alcazar (2017) Karayianni, Fanti, Diakidoy, Hadjicharalmbous & Katsimicha (2017)
Qualitative paper focused on offender characteristics	Schilz, Bergen. Schuhmann, Hoyer, Santtila (2016)
No statistical analysis	Shannon (2008)
Unclear definition of online sexual grooming or definition did not match included definition of online sexual grooming. No clear definition reported or unable to determine whether online sexual grooming was committed by adult or child.	Mitchell, Finkelhor & Wolak (2003) Mitchell, Finkelhor & Wolak (2005) Rosen, Cheever & Carrier (2008) Noll, Shenk, Barnes & Haralson (2012). Stamoulis (2009) Wells & Mitchell (2008) Mitchell, Finkelhor & Wolak (2007b) Noll, Shenk, Barnes & Putnam (2009) Rice, Winetrobe, Holloway, Montoya, Plant & Kordie (2015)
Could not differentiate between online sexual grooming and online harassment	Ybarra, Espelage & Mitchell, 2007 Ybarra, Mitchell, Finkelhor & Wolak, 2007
Is not relevant to online sexual grooming risk factors/characteristics	Greene-Colozzi (2017) Jones, Michell & Finkelhor (2011) Ybarra & Mitchell (2004) Ybarra, Alexander & Mitchell (2005) Mitchell, Wolak & Finkelhor (2007)

A.5: University Ethics

University of Edinburgh, School of Health in Social Science

RESEARCH ETHICS APPLICATION (REA)

The forms required when seeking ethical approval in the School of Health and Social Sciences have now been merged into this single electronic document. The sections you are required to complete will depend on the nature of your application. Please start to complete the form from the beginning and proceed as guided. On completion the *entire* document should be submitted electronically to your section's ethics tutor using the email addresses detailed on the final page.

FORM OVERVIEW	
FORM	COMPLETION
Project registration form	: Compulsory for all applications
Document checklist	: Compulsory for all applications
Level 1 Self Audit form	: To be completed for all research studies that are not subject to review by an external UK based ethical committee.
Level 2 /3 ethical review form	: To be completed when indicated by responses on the Level 1 form.

PROJECT REGISTRATION FORM

This form is the first stage in applying for University ethical approval and should be completed prior to the commencement of any research project. Applications submitted without appropriate documentation will be returned.

Ethical approval is required for all projects by staff or students conducting research, or similar.
Applicants should familiarise themselves with the School's Research Ethics Policy prior to completion.

PR1 Name of Applicant: MICHELLE SHARP
PR2 Name of Supervisor[1]: ETHEL QUALYE
PR3 Project Title: Looked after children: managing opportunity and risk online
PR4 Subject Area (section of school): Clinical Psychology Doctorate
PR5 If student, type of assessed work that this application relates to: Thesis
PR6 Planned date of project submission: May 2018

[1] Not applicable to staff members.

[PR7]Date ethics application submitted: 14/3/17
[PR8](Date complete information submitted if different):
[PR9]IRAS Approval Number if applicable:
The following to be completed by ethics administrator
[PR10]*Date Approved:*
[PR11]*Amendments Requested Date:*
[PR12]*Amendments Approved Date:*
[PR13]*Reviewer 1*
[PR14]*Reviewer 2* *Level 2-3 only*

DOCUMENTATION CHECKLIST

[DC1]Does your research project require extraction or collection of data abroad?

✓

If No, Skip to 2; if Yes,	(i) Does the project require ethics review by 'local' ethics panel (ie abroad)? (✓ one)	*No*	X	
		Yes (Skip to 2)		
	(ii) If yes, local Ethical review needed, please confirm (✓) electronic attachment of:	Application to that ethical review panel (in English) + copy of letter of approval		

[DC2]For the purposes of this research study, will you access identifiable[2] information on any NHS patient?

If No, Skip to 3; if Yes,	(i) Please tick yes (✓)	*Yes*	
	(ii) Please confirm (✓) electronic attachment of:	Caldicott Guardian approval for use of NHS data (or confirmation that it is not required)	

[DC3]Does the project require ethical review by an external UK committee eg NHS REC or Social Work?

		Yes	
If No, Skip to 4; if Yes,	(i) Please tick yes (✓)		

[2] 'Identifiable information' refers to information that would allow you to know, or be able to deduce, the identity of a patient. The most common examples of this would be accessing medical records or similar, or accessing a database that includes patients' names.

(ii) Please confirm (✓) electronic attachment of:

NHS REC (IRAS) /other application form + copy of letter of approval	

(iii) NOTE: You are *not* required to complete University ethical review forms. Skip to DC6

DC4 Unless you answered 'yes' to 3, you must also obtain ethical approval through the University of Edinburgh process. Please submit a Level 1 form (with 'Methods' summary) and, if indicated, a level 2-3 form as well.

SHSS Ethics paperwork

Please indicate the SHSS Ethics forms completed herewith (✓):

Forms: level 1	Forms: level 2/3	Summary of 'Methods'

DC5 If you have completed the Level 2/3 form please list any additional documentation provided in support of your application (E.g. Disclosure, consent form, participant information, GP letters etc.)

Documentation Name These should reflect content	(✓)	Documentation Name
Consent Form	X	
Patient Information Sheet	X	
Interview Protocol	X	

DC6 Signatures

Michelle Sharp	M Sharp	14/3/2017
Applicant's Name signed	Signature	Date

Dr Ethel Quayle		14.03.17
Supervisor[3] Name signed	Signature	Date

Please return an electronic copy of your UoE HSS Ethics Application Form (in its entirety) to your Section's Ethics Tutor, accompanied by electronic copies of additional documents

[3] This is not required for staff applications.

indicated above. We do not accept paper documentation, please scan all documents into electronic formats. Please keep a copy of all documentation for your records.

LEVEL 1 SELF AUDIT FORM

The audit is to be conducted by all staff and students conducting any type of empirical investigation, including research, audit or service evaluation.

The form should be completed by the principal investigator and, with the exception of staff, signed by a University supervisor.

SA1 Primary Research Question:

Please tick	What type of research are you planning to do?
	Study of a novel intervention or randomised clinical trial to compare interventions in clinical practice
X	Study utilising questionnaires, interviews or measures, including auto-ethnographic.
	Study limited to working with routinely collected clinical data
	Meta-analysis or systematic review
	Research database containing non-identifiable information

SA2 Please provide a brief summary of your proposed study. Our interest is in areas of your methodology where ethical issues may arise so please focus your detail on areas such as recruitment, consent, describing your participants and the nature of their involvement and data handling.

Project Summary:
Looked After Children's (LAC) internet use has attracted little interest to date. In the literature that is available there is a divergence of opinion regarding how those involved in family and social care should respond to the digital challenges posed by social media use (Simpson, 2016). It is important that in addition to focusing on preventing harm and safeguarding from risks, LAC's right to benefit from online opportunities is considered. This study aims to explore how residential care workers, employed across Moray in LAC's accommodation, manage risks and opportunities online and what factors influences these practices. Grounded Theory Methods will be used to analyse interviews with residential care workers in order to address this question.

Recruitment:
The researcher will meet to discuss the research with the managers of the residential accommodation units for LAC within the local area to inform them of the proposed

study. If they are willing to engage they will be asked to share participant information sheets with staff. These include information about the purpose of the study, inclusion criteria and contact information for the researcher if they wish to participate. A date will also be arranged for the researcher to attend each of the residential units for a designated period of time so that any individuals who would like further information about the study or who would like to book a date to be interviewed may do so.

Consent:
Once interview dates have been arranged participants will once again asked be to read the information sheet and consider the detailed information regarding what the data that is collected will be used for, who will have access to the data, how their data will be anonymised and how data will be stored in accordance with the University of Edinburgh and NHS Grampian data protection policies. If they are happy to proceed they will be asked to sign a consent form.

Inclusion criteria for participants:
Residential care workers working directly with LAC in residential units who speak English and have over one year's experience within the role.

Nature of participant involvement:
Participants will be required to participate in a semi-structured interview which will last roughly one hour in duration. They will be offered the opportunity to be emailed initial themes/findings to give feedback on. Residential workers from other LAC residential units within the area will then be invited to attend a focus group to discuss the final themes and findings from the research and consider the implications of these on their practice.

Data handling:
The University of Edinburgh Research Data Management policy and the NHS Grampian data protection policy have been considered when planning the most appropriate means of storing and managing data. The qualitative interviews will be recorded on encrypted Dictaphones, these will then be transferred to a digital format on a laptop which will be encrypted. The interviews will then be deleted from the dictation device. Interviews will be anonymously transcribed into a word document and saved on the encrypted laptop. All data will be stored on the University of Edinburgh Datastore, which will allow data to be backed up. Datastore automatically replicates data to an off-site disaster facility and ensures that data is backed up every 60 days. In addition, anonymous data will be imported into Dedoose and this Data Management Software will be used to analyse the data. Dedoose also allows a protective means of outputting and sharing data with my supervisors. In terms of confidentiality participants will be given an alphanumeric number to ensure anonymity. This will be linked with the consent forms which will be stored separately in a locked NHS cabinet. Data will be stored for 10 years in accordance with the University of Edinburgh UKRIO Code of Practice for Research. Signed consent form will be destroyed in line with NHS Grampian Data Protection policy no earlier than four months and no later than six months after a successful 'pass' notification from the Board of Examiners, in line with University of Edinburgh Data Protection guidelines.

Dissemination

The research will be written up as an academic paper and submitted as part of a dissertation for the doctorate in clinical psychology. This will also be submitted as a journal publication.

Please circle your answer as appropriate:

	ETHICAL ISSUES		
SA3	Bringing the University into disrepute Is there any aspect of the proposed research which might bring the University into disrepute? For example, could any aspect of the research be considered controversial, prejudiced, critical of a minority group or religion etc.?	*No*	*YES*
SA4	Protection of research subject confidentiality *Will you make every effort to protect research subject confidentiality by conforming to the University of Edinburgh's guidance on data security, protection and confidentiality as specified in:* *http://www.ed.ac.uk/schools-departments/information-services/services/research-support/data-library/research-data-mgmt/data-security* *For example, there are mutually understood agreements about:* (a) non-attribution of individual responses; (b) Individuals, and organisations where necessary, being anonymised in stored data, publications and presentations; (c) publication and feedback to participants and collaborators; (d) With respect to auto-ethnographic work it is recognised that the subject's anonymity cannot be maintained but the confidentiality of significant others must be addressed.	*NO*	*Yes*
SA5	Data protection and consent *Will you make every effort to ensure the confidentiality of any data arising from the project by complying with* the University of Edinburgh's Data Protection procedures (see www.recordsmanagement.ed.ac.uk); For example (a) Ensuring any participants recruited give consent regarding data collection, storage, archiving and destruction as appropriate; (c) Identifying information[4], (e.g. consent forms) is held separately from data and is only accessible by the chief investigator and their supervisors; (e) There are no other special issues arising regarding confidentiality/consent. (f) That where NHS data is being accessed Caldicott Guardian approval has been obtained.	No	*Yes*

[4] 'Identifiable information' refers to information that would allow you to know, or be able to deduce, the identity of a patient. The most common examples of this would be accessing medical records or similar, or accessing a database that includes patients' names.

SA6	Duty to disseminate research findings Are there issues which will prevent all participants and relevant stakeholders having access to a clear, understandable and accurate summary of the research findings?	<u>No</u>	*YES*
SA7	Moral issues and Researcher/Institutional Conflicts of Interest *Are there any SPECIAL MORAL ISSUES/CONFLICTS OF INTEREST?* Examples include, but are not limited to: Where the purposes of research are concealed; Where respondents are unable to provide informed consent Where there is financial or non-financial benefit for *anyone* involved in the research, or for their relative or friend. Where research findings could impinge negatively or differentially upon participants or stakeholders (for example when selecting an unrepresentative sample of a larger population). Where there is a dual relationship between the researcher and subject? E.g. Where the researcher is also the subject's practitioner or clinician.	<u>No</u>	YES
SA8	Potential physical or psychological harm, discomfort or stress Is there any foreseeable potential for: significant psychological harm or stress for participants significant physical harm or discomfort for participants? significant risk to the researcher? Examples of issues/ topics that have the potential to cause psychological harm, discomfort or distress and should lead you to answer 'yes' to this question include, but are not limited to: *Relationship breakdown; bullying; bereavement; mental health difficulties; trauma / PTSD; Violence or sexual violence; physical, sexual or emotional abuse in either children or adults; feedback of results from the project's assessments.*	<u>No</u>	YES

SA9	Vulnerable participants Will you be *recruiting* any participants or interviewees who could be considered vulnerable? Examples of vulnerable groups, the inclusion of which should lead you to answer yes to this question include, but are not limited to: Clients or patients of either the researcher OR the person recruiting subjects; Children & young people; people who are in custody or care for example, offenders, looked after children or nursing home resident; persons with mental health difficulties including those accessing self-help groups; auto-ethnographic researchers examining distressing topics.	*No*	*YES*

Assessment outcome:

SA10 Have you circled any answers in BOLD typescript? Please tick as appropriate

No [X] Your responses on the completed self-audit confirm the ABSENCE OF REASONABLY FORESEEABLE ETHICAL RISKS.
Please now read the guidance below and provide the required signatures.
You are NOT REQUIRED to complete a level 2/3 application form.
Please submit the UoE HSS Ethics Application Form electronic document (in its entirety) along with ALL additional required documentation, failure to do so will mean that your form is returned to you.

Yes [ ] Your responses on the completed self-audit indicate that we require further information to consider your application.
Read the Guidance below and provide the required signatures.
(ii) You ARE REQUIRED to complete a level 2/3 application form.
(III) Please continue to page x of this document where you will find the level 2/3 form

Subsequent to submission of this form, any alterations in the proposed methodology of the project should be reviewed by both the applicant and their supervisor. If the change to methodology results in a change to any answer on the form, then a resubmission to the Ethics subgroup is required.

The principal investigator is responsible for ensuring compliance with any additional ethical requirements that might apply, and/or for compliance with any additional requirements for review by external bodies.

ALL forms should be submitted in electronic format. Digital signatures or scanned in originals are acceptable. The applicant should keep a copy of all forms for inclusion in their

thesis. HSS Section specific instructions for the submission of forms for each section is overleaf.

Michelle Sharp	MSharp	14/3/17
Student Name	Student Signature	Date

	Ethel Quayle	14.03.17
*Supervisor Signature	Supervisor Name	Date

*NOTE to Supervisor: Ethical review will be based only on the information contained in this form. If countersigning this check-list as truly warranting all 'No' answers, you are taking responsibility, on behalf of the HSS and UoE, that the research proposed truly poses no ethical risks.

LEVEL 2 / 3 ETHICAL REVIEW

Complete only if indicated in the conclusion of your level 1 form.
Applications will be monitored and audited to ensure that the School Ethics Policy and Procedures are being complied with and applicants contacted in cases where there may be particular concerns or queries.
Research must not proceed before ethical approval has been granted. For this reason it is particularly important that applications are submitted well in advance of any required date of approval.

If the answer to any of the questions below is 'yes', please elaborate and give details of how this issue is will be addressed to ensure that ethical standards are maintained. The response boxes will expand as you complete them. Forms that do not contain sufficient detail will be returned incurring delay.

RISKS TO, AND SAFETY OF, RESEARCHERS NAMED IN THIS APPLICATION
[ER1]Do any of those conducting the research named above need appropriate training to enable them to conduct the proposed research safely and in accordance with the ethical principles set out by the College?
YES / NO
[ER2]Are any of the researchers likely to be sent or go to any areas where their safety may be compromised, or they may need support to deal with difficult issues?
YES / NO

[ER3]Could researchers have any conflicts of interest?
YES / NO
RISKS TO, AND SAFETY OF, PARTICIPANTS
[ER4]Are any of your participants children or protected adults (protected adults are those in receipt of registered care, health, community care or welfare services – please refer to **http://www.disclosurescotland.co.uk/guidance/infoforindivid/chap2_regulatedwork/2_3_step_2_define.html** ? Anyone who will have contact with children or protected adults requires approval from Disclosure Scotland at **http://www.disclosurescotland.co.uk/**
Do any of the researchers taking part in this study require Disclosure Scotland approval? Ethical approval will be subject to documentation confirming Disclosure Scotland approval with this form.
[ER5]Could the research induce any psychological stress or discomfort?
YES / NO
[ER6]Does the research involve any physically invasive or potentially physically harmful procedures?
YES / NO
[ER7]Could this research adversely affect participants in any other way?
YES / NO
RESEARCH DESIGN
[ER8]Does the research involves living human subjects specifically recruited for this research project *If 'no', go to section 6*
YES / NO
[ER9]How many participants will be involved in the study?
15
[ER10]What criteria will be used in deciding on inclusion/exclusion of participants?

[ER11]How will the sample be recruited? (E.g. posters, letters, a direct approach- specify by whom.)
[ER12]Will the study involve groups or individuals who are in custody or care, such as students at school, self-help groups, residents of nursing home?
YES / NO
[ER13]Will there be a control group?
YES / NO
[ER14]What information will be provided to participants prior to their consent? (e.g. information leaflet, briefing session)
YES / NO .
[ER15]Participants have a right to withdraw from the study at any time. Please tick to confirm that participants will be advised of their rights, including the right to continue receiving services if they withdraw from the study.
[ER16]Will it be necessary for participants to take part in the study without their knowledge and consent? (e.g. covert observation of people in non-public places)
YES / NO
[ER17]Where consent is obtained, what steps will be taken to ensure that a written record is maintained?
[ER18]In the case of participants whose first language is not English, what arrangements are being made to ensure informed consent?
[ER19]Will participants receive any financial or other benefit from their participation?
YES / NO
[ER20]Are any of the participants likely to be particularly vulnerable, such as elderly or disabled people, adults with incapacity, your own students, members of ethnic minorities, or in a professional or client relationship with the researcher?
YES / NO
[ER21]Will any of the participants be under 16 years of age?
YES / NO

[ER22]Will any of the participants be interviewed in situations which will compromise their ability to give informed consent, such as in prison, residential care, or the care of the local authority?
YES / NO
DATA PROTECTION
[ER23]Will any part of the research involve audio, film or video recording of individuals?
YES / NO
[ER24]Will the research require collection of personal information from any persons without their direct consent?
YES / NO
[ER25]How will the confidentiality of data, including the identity of participants (whether specifically recruited for the research or not) be ensured?
[ER26]Who will be entitled to have access to the raw data?
[ER27]How and where will the data be stored, in what format, and for how long?
[ER28]What steps have been taken to ensure that only entitled persons will have access to the data?
[ER29]How will the data be disposed of?
[ER30]How will the results of the research be used?
[ER31]What feedback of findings will be given to participants?
[ER32]Is any information likely to be passed on to external companies or organisations in the course of the research?
YES / NO

[ER33]Will the project involve the transfer of personal data to countries outside the European Economic Area?
YES / **NO**
[ER34]**An application at this level is likely to require additional documentation, for example consent forms or participant information sheets. Please return to the Documentation Checklist on page 2 to list your supporting documentation.**

[ER35] ISSUES ARISING FROM THE PROPOSAL
I can confirm that the above application has been reviewed by two independent reviewers. It is their opinion that: Ethical issues have been satisfactorily addressed and no further response from the applicant is necessary, OR The ethical issues listed below arise or require clarification: The applicant should respond to these comments in section 8 below. Signature: Position: Date:
[ER36] APPLICANT'S RESPONSE (If required)
Signature: Date:
[ER37] CONCLUSION TO ETHICAL REVIEW (if required)

The applicant's response to our request for further clarification or amendments has now satisfied the requirements for ethical practice and the application has therefore been approved.

Signature:

Position:

Date:

[ER38]AMENDMENT/S: REQUEST FOR APPROVAL

Subsequent to receipt of ethical approval above, I, the applicant, would like to request the following amendment/s to my original proposal.

Signature:

Date:

[ER39]CONCLUSION TO ETHICAL REVIEW OF AMENDMENT

I can confirm that the above amendment has been reviewed by two independent reviewers. It is their opinion that:
Ethical issues have been satisfactorily addressed and no further response from the applicant is necessary,
OR
The ethical issues listed below arise and the following steps are being taken to address them:

Signature:

Position:

Date:

Acronyms / Terms Used
NHS: National Health Service
SHSS: School of Health in Social Science
IRAS: Integrated Research Applications System
Section: The SHSS is divided into Sections or subject areas, these are; Nursing Studies, Clinical Psychology, Counselling and Psychotherapy and Interdisciplinary Social Sciences in Health

Looked after children: managing opportunity and risk

Purpose of study
You are invited to take part in a study that is being conducted to aid our understanding of how the digital challenges that looked after children face online are managed. Participation in the study is voluntary and this information sheet aims to provide you with the necessary information that you may need to make this decision. Please feel free to ask any questions.

Description of the study
Digital media and the internet are highly integrated aspect of the lives of young people today. There has been some research examining the risks that young people face in relation to digital media use and less examining the potential opportunities that young people may benefit from online. There also appears to be limited research investigating Looked After Children's (LAC) digital media use and within the existing literature there is a lack of consistency in terms of our understanding of how families and social care should respond to the digital challenges posed by LAC's digital media access. It is important that we understand how this vulnerable group of young people benefit from the opportunities associated with online use in addition to how to safeguard them from the risks that they may face. The proposed study will address these issues through interviews with residential care workers who care for looked after children. This research will help inform our understanding of how risks are managed by staff and give direction to the ways that the digital rights of LAC can be promoted while safe-guarding issues are also addressed.

Who should take part?
I am looking to recruit residential care workers who have at least one year's experience working directly with looked after children in residential accommodation and who are fluent in English.

What will this involve?
Participants will be interviewed by the researcher for approximately 45-60 minutes in a quiet work location and at an agreed time. Participants are free to withdraw at any point without explanation. They will be asked to sign a consent form to confirm participation in the study and that they are happy for the interview to be recorded onto dictaphone. These forms will be securely stored in a locked NHS filing cabinet. The interview will be transcribed by the researcher and securely stored in an encrypted folder. The anonymised findings from the research will be shared locally with the residential accommodation units, professionals within the local area and submitted for publication in a psychology journal. NHS Grampian and University of

Edinburgh data protection policies will be observed and the data may be made available for secondary analysis.

Important information
It is important that if you take part in this study that you do not share any information that may lead to the identification of any persons that you are discussing. Also if any information that is shared highlights unprofessional conduct on behalf of a professional this will be required to be shared with the relevant professionals.

If I feel there is a problem
It is expected that participants will not experience any distress from taking part in this study, but if this should happen the interview will be stopped. If upon leaving the interview you feel that you require support, please contact one of the following:
Breathing space: 0800 83 85 87
Samaritans: 116 123

Or if further help is needed please speak your GP.
If it is felt that a formal complaint is required, please do so by contacting Head of School, Professor Charlotte Clarke on:
charlotte.clarke@ed.ac.uk.

Further information about the University of Edinburgh's complaint procedure is available at:
http://www.ed.ac.uk/university-secretary- group/complaint-handling-procedure.
Further Information and Contact Details
If you require any further information about this study, please do not hesitate to contact me on:
07969062389
or
s1580106@ed.ac.uk

Researcher: Michelle Sharp
Clinical Psychology Doctoral Student, University of Edinburgh
Supervisor:
Dr Ethel Quayle, University of Edinburgh

A.7: Consent Form

Looked after children: managing opportunity and risk

Ethics approval number:
Name of Researcher: Michelle Sharp Researcher Email: S1580106@sms.ed.ac.uk

Please read the following statements and initial the corresponding box to confirm if you agree:

I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	
I understand that the data that is collected may be used to support other research in the future and may be shared anonymously with other researchers.	
I understand that my data will be treated confidentially and any publication resulting from this work will report only data that does not identify me.	
I freely agree to participate in this study.	

Signatures:

Name of participant (block capitals)	Date	Signature
Name of researcher (block capitals)	Date	Signature

A.8: Interview Protocol

Interview Protocol

Themes

Can you start by telling me about your experience of LAC internet use.

In what ways, if at all, is LAC internet use different to children in other contexts?

Do you think LAC are more at risk online than children living in other contexts?

Any specific risks that you think are related to LAC that do not apply to children living in other contexts?

How confident do you feel in safeguarding LAC from online risks?

What benefits do you think that LAC get from using the internet?

Do these differ from the benefits from children living at home?

Do you think that LAC experience any barriers to gaining access to online opportunities?

What, if any, do you think are the impacts of restrictive online monitoring practices?

How, if at all, do you educate young people about online opportunites?

How confident do you feel in supporting LAC to access online opportunities?

Do you think there is a balance between managing risk and opportunities?

Prompts

Can you give me an example of that?
Can you tell me more about that?
How did that make you feel?
Do you have any other experience of that?
I'm wondering what training you have had to help you deal with that?
Any improvements that could be made?

A.9: University Ethics Consent

SCHOOL of HEALTH IN SOCIAL SCIENCE
CLINICAL AND HEALTH PSYCHOLOGY

The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone 0131 651 3969
Fax 0131 650 3891
Email submitting.ethics@ed.ac.uk

Michelle Sharp
Trainee Clinical Psychologist
School of Health in Social Science
University of Edinburgh

11 April 2017

Dear Michelle,

Application for Level 1 Ethical Approval

Reference: CLIN346
Project Title: Looked After Children: Managing Opportunity and Risk Outcomes
Academic Supervisor: Ethel Quayle

Thank you for submitting the above research project for review by the Department of Clinical and Health Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 21st March 2017.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Administrative Secretary, Clinical Psychology

A.10: Reply from Local Authority

EDUCATION AND SOCIAL CARE

Laurence Findlay
Corporate Director (Education and Social Care)
The Moray Council
High Street, Elgin, Moray IV30 1BX
Telephone: 01343 563530 Fax: 01343 563990

email:
laurence.findlay@moray.gov.uk
Website: www.moray.gov.uk

Our reference:
SPCE354082138-701/LF/am

Michelle Sharp
Department of Clinical &
Counselling Psychology
Pluscarden Clinic
Dr Grays Hospital
Elgin
IV30 1SN

02 April 2017

Dear Michelle

Thank you for letter dated 31 March 2017 to follow up our phone conversation.

I am happy to support you in this research and suggest you contact the residential homes directly as they will likely have their own ethics process for consideration. I wish you well in your research.

Yours sincerely

Laurence Findlay
Corporate Director (Education and Social Care)

A.11: NHS Grampian R&D Confirmation

From: Burns, Patricia <patriciaburns@abdn.ac.uk>
Sent: 06 December 2016 11:46
To: RANDDTRAINING, nhsg (NHS GRAMPIAN); SHARP, Michelle (NHS GRAMPIAN)
Subject: RE: Thesis

Hi Michelle,

I can confirm that you do not need R&D permission for this.
Kind regards
Tricia

Patricia Burns
Research Governance Manager
University of Aberdeen/NHS-Grampian
Research Governance Office
Foresterhill House Annexe
Foresterhill
Aberdeen
AB25 2ZB

Tel: +44(0) 1224 551123
patriciaburns@abdn.ac.uk
patricia.burns5@nhs.net
researchgovernance@abdn.ac.uk

Web: https//www.abdn.ac.uk/medical/researchgovernance/clinicalresearch

A.12: Glossary of terms

Glossary of terms	
LAC	Looked after children
SNS	Social Networking sites
IM	Instant messaging
OSS	Online Sexual Solicitation
CSA	Child Sexual Abuse
CSE	Child Sexual Exploitation
ICT's	Information Communication Technologies
UKCCIS	UK Council for Child Internet Safety
CRD	The Centre for Reviews and Dissemination
CDSR	Cochrane Database of Systematic Reviews
PROSPERO	The International prospective register of systematic reviews
DARE	The Database of Abstracts of Reviews of Effects
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta- Analysis
YISS	Youth Internet Safety Survey
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorder, fourth edition, text revision.
NSPCC	National Society for the Prevention of Cruelty to Children
NICE	The National Institute for Health Care Excellence
GT	Grounded Theory