

DIGITAL DANGERS AND CYBER-VICTIMISATION: A STUDY OF EUROPEAN ADOLESCENT ONLINE RISKY BEHAVIOUR FOR SEXUAL EXPLOITATION

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Abstract

Objective: The engagement and use of Information and Communications Technologies (ICTs) has increased exponentially across societies worldwide with implications for social and psychological development in young people. In this context, the risk of negative sexual experience and victimisation online is known to have real world consequences for young people. This article seeks to: explore the nature of adolescent risk taking online behaviour from a group of young adults in different European countries; develop types of online risk profiles; explore the impact of help-seeking and to consider the potential real world harmful consequences.

Method: A survey was administered across the United Kingdom, Ireland and Italy of 18 to 25 year olds in higher education, asking them about their online experiences between the ages of 12 and 16. Risky behaviour on and off-line, types of victimisation (on and offline) and sexual solicitation requests online were analysed together with help-seeking behaviour.

Results: Four profiles concerning adolescent risky behaviours were identified through cluster analysis. Each were distinguishable by a pattern of latent constructs linked to risk offline and online. Two were considered normative (adapted adolescents and inquisitive online) and two high risk (risk-taking aggressive and sexually inquisitive online). Additionally, regression analysis demonstrated significant factors linked to predicting both likelihood of meeting an adult for sexual purposes, and help-seeking behaviour.

Conclusions: The profiles developed are a useful tool for educators, police and health and social care practitioners in identifying adolescents at risk in order to undertake preventative work. Common help-seeking behaviour from peers could be used to effect interventions.

Key words: adolescents, help-seeking, online, risk, sexual solicitation

Declaration of interest: none

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Introduction

Information and Communication Technologies (ICTs), through the use of the Internet, have evolved from tools to access and process information, to those creating a new social environment, where individuals can engage in a range of virtual social relationships and leisure activities (Snyder 2001). When used by increasingly younger children and adolescents, this is likely to have an important impact on human social development to shape offline behaviour. It is argued that the technological environment of cyberspace or the 'techno-system', which provides the context for encounters with technology and the Internet, has the

capacity to mould and affect real-world behaviours (Johnson 2010). Placing technology within this sphere of social development provides social scientists with a new domain for capturing the dynamic nature of how new technological devices affect behaviour online and offline. It allows a range of online actions to be understood in more traditional theoretical frameworks. The extent to which these cyber experiences influence child development, cognitive and social awareness and behaviour needs charting. As individuals continue to interact through online media, opportunities increasingly present themselves for social opportunities, friendships and romance. Unfortunately they also increase the potential for a darker, more predatory use of the Internet,

with the potential for harm from offending behaviour (Burgess et al. 2012). This has particular implications for children and adolescents who are increasingly spending more time engaged in the virtual digital world. Research with young people in the UK and the Middle East has suggested that they live in a converged online/offline environment where the distinction between the two worlds is becoming increasingly blurred (Davidson and Martellozzo 2012). There is a need to understand the contexts in which the Internet is used in daily life and how this may put children and adolescents at risk of harm.

Harm online can manifest in a range of forms. This includes various forms of cyberbullying and cyber-harassment (Gillespie 2006); online theft, including financial and identity theft (Youn 2009) and increased exposure to adult pornography (Martellozzo et al. 2016). It also includes grooming for sexual abuse (Webster et al. 2014) and the production and distribution of indecent images and videos of minors linked to offline abuse (DeMarco et al. 2015). These latter sexual crimes pose risks to normative sexual and social development, and can result in harm done both online and offline and lead to repeat sexual victimisation (Altamura 2012) and engaging in sexual offending behaviour (Whittle et al. 2013).

There is considerable increase in both the fear of online sexual victimisation, and its prevalence (Turow and Nir 2000). Psychological theories of motivation and impulsivity have been used to explain why young people who engage in risky behaviour in the real world are likely to also take risks in the virtual world (Wolak et al. 2007). A range of factors including immaturity; inexperience; digital and 'online' literacy; impulsivity and risk-taking; lack of forethought; and peer inclusion are linked in the literature to increased sexual victimisation online (Castro and Osorio 2015). However, most research has focused on western countries and more research is needed to explore cultural issues as well as the experience of children living in less developed countries. The impact of technology upon different cultures has not been fully explored, with a couple of noteworthy exceptions including Burton and colleagues forthcoming research in the MENA region funded by the WeProtect initiative (Burton et al. 2016) and Davidson and Martellozzo's ongoing research in the Kingdom of Bahrain (2010, 2016 forthcoming). This research suggests that although children's use of digital media is similar regardless of geographical context there are key cultural issues that impact upon online experience and behaviour. Livingstone and Bulger (2013) state '*... research is needed to discover which risk factors operate in particular cultural or national contexts and what protective factors exist in children's environments that can be strengthened...*'. This is of some urgency in understanding the larger problems linked to online child and adolescent sexual abuse at national and international level.

Exposure to sexual content, solicitation and communication online is a regular feature of cyberspace in contemporary society (Livingstone and Bober 2004) and consequentially a likely key influence on youth development. Research needs to be directed towards the level of harm this potentially has upon the emotional and sexual development of young people (Flood 2009, Horvath et al. 2013). For example, the manner in which women are often sexualised and illustrated in sexual material online may have consequences in terms of their objectification by men and boys (Peter and Valkenburg 2007, Zurbriggen et al. 2010), and issues linked to mental health, self-esteem and body image across genders (Sabina et al. 2008, Zurbriggen et al. 2010).

An earlier EC funded research project by the team explored the behaviour of young people victimised online as reported by incarcerated offenders (Webster et al. 2014). This identified two victim types – those risk-taking and those vulnerable. The former were disinhibited and adventure seeking and feel control whilst online. The latter had a high need for attention and affection, seek love on the Internet and have difficult home lives. A parallel study of the young people victimised identified needs for connectedness and security, identity and self-esteem, and belonging as crucial (Quayle et al. 2012).

There is a further need to follow these findings to better understand how online risk taking behaviour may transform into harmful consequences, and to examine the characteristics of young people most at risk. Therefore, the focus of this paper will be to explore the link between online and offline risk taking behaviour in adolescents in a European setting.

The general aim of this research was to provide a better understanding of youth behaviour and risks for online sexual victimisation. This has utility for law enforcement, educators, psychologists, psychiatrists and associated services. By surveying a large number of young adults the research team explored distinct profiles of on- and offline risk manifested in adolescence in relation to a range of real and virtual risk taking behavior.

Aims

Firstly the aim was to find distinctive profiles related to risk behavior in real life, risk behavior on the Internet, aggressive behavior towards others in real life and on the Internet, victimization in real life and on the Internet, and help-seeking behavior.

Secondly, the profiles were used as a starting point to test hypothetical models. The relationship between online risky behaviour, offline risky behaviour, aggressive behaviour, victimization, receiving unwanted information and requests and help-seeking behaviour were examined.

Methods

Participants

The research was a short-term retrospective analysis of young adult's experience of risk taking behaviour during their adolescent years (age 12 to 16). The age range selected was 18 to 25 who were sampled across three EU countries, mainly through higher education institutions. The sample consisted of 1,166 participants recruited from three different European countries: England (n=340), Ireland (n=529) and Italy (n=297).

Measures

The ISEC 'Illegal Use of the Internet' questionnaire was developed by the project team, and this part of the research was led by investigators at the University College Dublin, Ireland (who were initially based at the Royal College of Surgeons in Ireland). A range of items measured participant behaviours during their adolescent years including those normative and those risky. This included information about the general life and well-being of the participants; family background and composition; offline and online risk taking behaviour; as well as level of engagement with technologies. All questions represented in the survey were chosen based on a consideration of previous literature and relevance

to the research aims and objectives. The questionnaires were piloted in both Ireland and the UK in order to gauge facility of responding and the comprehension of items and scales. The English version of the survey was utilised for data collection in Ireland the UK whilst the research team in Italy translated their version prior to administration. The research team at Middlesex University and in Italy discussed the transferability of items across language and cultural context to ensure that the final data set would be capable of integration for analysis. Minor amendments were made following the feedback received from participants prior to mass administration.

Respondents were also asked about their social support regarding relationships with parents and friends during adolescence. The questionnaire had seven sections to focus on the following aspects:

- 1) *Risk taking offline behaviours* included four measures linked to the participant's engagement with substance use and problematic school behaviour. The four items were: **frequency of alcohol consumption until intoxication; truancy from school; illicit drug use; and problematic/bad behaviour with teachers.** All four items were measured on a 4-point ordinal scale (1=Often; 4=Never).
- 2) *Online risky behaviours* included seven different items exploring the participant's engagement in cyberspace. The items included: **giving out personal information online; downloading pirated material; accepting people as friends online without knowing them in the real world; visiting adult pornographic websites; sharing personnel photographs or video's with strangers; meeting peers face to face that were first met online; and meeting adults face to face that were first met online.**
- 3) *Online/Offline victimisation:* included **being harassed online and being harassed in real life.** Both items were measured on a 4-point ordinal scale (1=Often; 4=Never).
- 4) *Online/Offline aggression* was assessed by two items: **have harassed someone online; have harassed someone in real life (aggressor).** Both item were measured on a 4-point ordinal scale (1=Often; 4=Never).
- 5) *Sexual solicitation, requests and attention* was explored through four items : **sexual information was asked of you online; you were asked to do/perform sexually online; you were asked to produce a sexually explicit photograph or video; you were asked to meet up for a sexual activity.** Each of these items was measured on a 4-point ordinal scale (1=Often; 4=Never).
- 6) *Social support* was explored using three items: **I had at least one good friend I could rely on; I got on well with my parents.** Each of these items was measured on a 3-point ordinal scale (1=Not True, 2= Somewhat True, 3=Certainly True). In addition items on help-seeking involved dichotomous responses to questions such as whether the participants reported the experience of any illicit solicitations or requests (i.e. helpline, parents, friends, online reporting mechanisms). For the purpose of this investigation, a dichotomous variable indicating whether the participants had engaged in help-seeking behaviour through any one of the above mentioned forms was recorded as 'Yes' whereas not seeking support from any medium or agent was recorded as 'No'.

Additional information collected on the larger questionnaire, included demographics (e.g. gender) information surrounding their engagement in other online activities (i.e. socialising, researching, and relaxing) and what devices and sites they used.

Procedure

The questionnaire was administered using SURVEY MONKEY, a digital platform that provides facilitated services in the collection, analysis and dissemination of data. The questionnaire (available upon request from the authors) was originally developed in English and translated and tailor-made for each of the countries involved ensuring standard responses to questions (i.e. ethnicity, educational attainment, vocabulary). The survey was distributed via higher education establishments by members of the research consortium in their relative countries, through a combination of non-random, opportunity and convenience sampling; as well as more widely via social media and the network of stakeholder organisations associated with the project. The research was passed by the independent organisational ethics procedures for each of the participatory institutions, with Middlesex University, as lead on the overall project, providing the core documentation. All participants were informed of their rights in engaging in the investigation, and assured that confidentiality and anonymity would be maintained. Prior to completion of the online questionnaire, a consent form was presented through the digital medium for the participants to read and agree to. Following completion of the survey, further details of the study were provided; including contact information for the various investigators, as well as recommendations for support services should any discomfort have been caused.

All data was merged into a final database on SPSS 21.0 for final data cleaning, descriptive and inferential analysis.

Statistics

The statistical analysis presented here included a range of parametric and non-parametric tests. Dynamic high-level analyses were conducted to verify the psychometric properties of the above-described item groupings (factor analysis), to develop the latent group clusters of items together for analysis within differentiated models (K-means cluster analysis and hierarchical cluster analysis), and to predict likelihood of meeting a stranger for a sexual activity and help-seeking behaviour (regression).

Results

Demographics

The mean age of the sample was 21.23 years (range: 18-25, SD=2.16), with female participants representing 72% of the overall sample. Most (70%, n=817) participants identified their primary role as students with 23% being fully employed and 5% unemployed. The majority of participants reported themselves as ethnically native to the country of origin. Nine hundred and seventy one participants (83%) identified themselves as being heterosexual and 10% as LGBTQT in terms of their sexual orientation.

Fifty percent (50%) of the UK participants, 39% of the Italian and 33% of the Irish participants lived in a metropolitan or urban areas whilst 28% of the Irish participants and less than one percent of the Italian and UK participants described their upbringings as linked to rural areas. Fifty eight percent of the Irish respondents, 45% of the Italian respondents and 40% of the UK respondents their neighborhood whilst growing up was safe; whereas 18% of UK, 15% of the Italian and 9% of Irish participants believed it was not. When queried about the relationship with their parents and caregivers,

59% and 53% of respondents in Ireland and the UK respectively reported more often a very good relationship with the parents whilst only 32% of Italian young people responded the same way. Conversely, 17% of Italian participants reported more frequent difficult relationships with their caregivers, than UK (8%) or Irish (10%). Under half (44% and 39%) of Irish and UK participants, and just over one-fifth (23%) of participants responded that they were happy during their adolescent educational years however approximately 1/5th of young adults in each of the countries did report that they were not happy at school. Finally, 64% of the entire sample responded that they had good friends during their formative years.

Factor analysis

Factor analysis was conducted to verify whether the 19 questionnaire items met the psychometric requirements in order to develop latent constructs. This was also critical for the use and analysis of the groupings in profile determination. The following section provides a breakdown of the analysis and the clustering of variables.

Investigating online and offline risky behaviour (non-sexual)

Principal Axis Factoring (PAF) was performed to examine the factorial structure of the items related to online and offline risk taking behaviour. Following analysis, a three factor structure was found with good psychometric properties.

The first factor, Online Risky Behaviour (ORB) consisted of the items personal information, pirate material, accepting unknown people, visiting pornographic sites and sharing photos/videos, with factor loadings ranging from .30 to .60.

The second factor, Risky Offline Behaviours (ROB) was formed with two items - meeting unknown online peers face to face (.81) and meeting unknown online adults face to face (.48).

The third factor consisted of the experience of online (.53) and face to face (.92) harassment (Online-Offline Victimization-O/O-V).

Eigenvalues indicated that the three factors explained 25.52%, 10.45% and 5.86% of the variance respectively. The items all correlated significantly between .09 and .52.

The internal consistency of these identified scales

(Cronbach's alpha) showed online risky behaviour was moderate (.66); for meeting without knowing the peer or adult was weak (.53); and for online and offline harassment was moderate (.68). Variability may be explained by the low numbers of items per factor (Cortina 1993).

Online and offline aggression (O/O-A)

PAF of the items online aggressive behaviour towards others and online aggressive behaviour face to face gave one factorial structure with strong factor loadings of .77 and .76 respectively. Eigen value indicated that the single factor explained 58.81% of the variance. The correlation between both items was strongly significant (.59), and the internal consistency showed an acceptable Cronbach's alpha of .74.

Sexual Solicitation, Requests and Attention (SSRA)

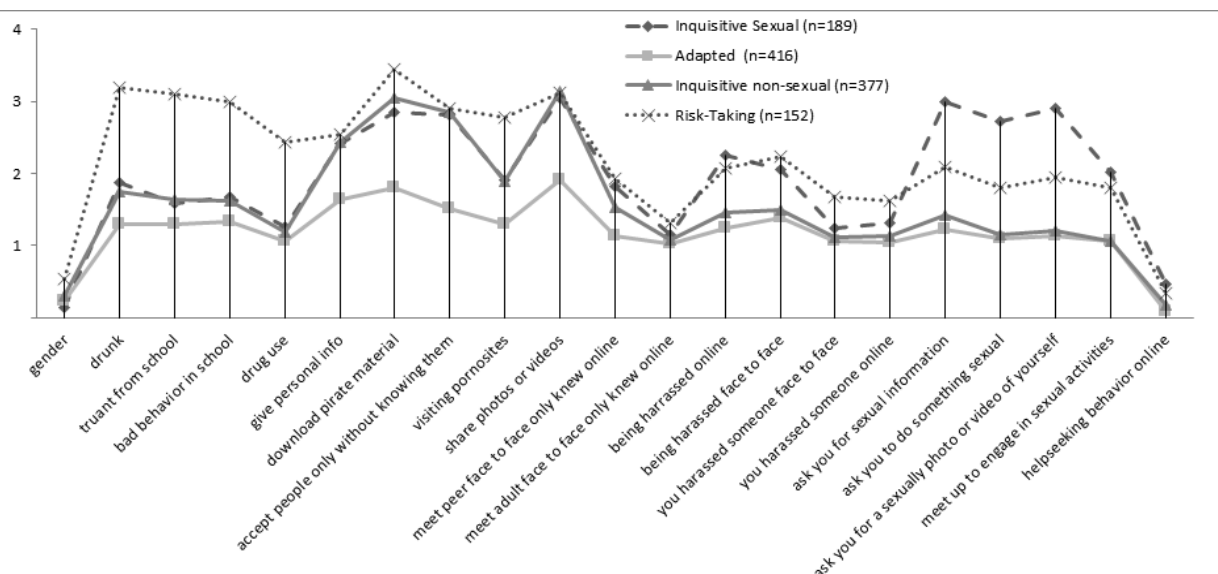
The four items 'others ask you for sexual information (.86), ask you to do something sexual (.91), ask you for a sexual photo or video of yourself (.90) and meet up to engage in sexual activities (.73)' showed very good factor loadings on a one factor structure. These items explained 72.40% of the variance in the factor. Cronbach's alpha was high (.91) and the correlations between the four items was strongly significant and ranged from .60 to .80.

Dividing the sample into profiles

Cluster analysis was used to identify profiles in the young people. This involved combining k-means and hierarchical cluster analysis techniques to explore whether the participants could be grouped into profiles on the basis of the 19 variables included in ORB, ROB, O/O-V, O/O-A, and SSRA (scores were reversed were necessary so that higher scores equated to more frequent occurrences). Also included were gender (male/female) and help-seeking behaviour (yes/no). The results of the cluster analysis, based on Euclidean distance and the Ward hierarchical clustering method, resulted in four 'profiles' of measured behaviour.

In **figure 1**, the four profiles are identified in terms of scores on the examined variables. They are described in more detail below.

Figure 1. Differentiated profiles of participant behaviour



The Adapted Adolescent profile (37%)

This was the largest single group of participants across the investigation (n=416, 36.84%) comprised of a relatively equal split of both males and females. Looking at the **figure 1**, which plots the different profiles against the clusters of on- and offline behaviour as well as the other identified profiles, a fairly generic, normative pattern of behaviours is indicated in the real and virtual worlds. Thus there is no significant aggression to others either in cyberspace or in the real world, few report requests for sexual information about themselves from partners, strangers or unknown adults. Whilst they demonstrate a slight increase in sharing and posting videos online; these videos are not identified as being specifically of a sexual nature and are more likely linked to their engagement on social media sites such as Instagram, Facebook and Twitter. They are the least likely group to report engaging in help-seeking behaviour in relation to online negative experiences, probably due to their low rate of such negative experiences. This was considered the most normative profile.

The non-sexual Inquisitive Profile (33%)

This was the second largest sub-sample of participants (n=377, 33.24%). A mixture of males and females, they demonstrate a fairly similar profile to the 'Adapted Adolescent' but with a few key differences. As with the earlier group they do not demonstrate experience heightened levels of online/offline victimisation nor do they engage with a great deal of online/offline aggression to others; they have no high rate of sexual solicitation or requests online or offline encounters. However, they manifest the highest scores on real and virtual non-sexual risk taking behaviour of any group. Their real world problem behaviour demonstrates an increased likelihood of risks linked to anti-social behaviour and exclusion, such as taking drugs and problematic school and home behaviour. They also show non-sexual online risk behaviour which includes activities such as downloading illegal material and meeting strangers face to face that they had never met in person (sexual nature non-specified). With regard to help-seeking they had low levels suggesting that in many ways this group is normative regarding their online sexual behaviour risk, but they have higher offline risk taking. Their online risk taking behaviour is primarily without a sexual focus.

The Aggressive Risk-Taker Profile (13%)

This group consisted of 152 participants (13.40%) and predominantly populated by males (n=83). They demonstrated a pattern of real world anti-social behaviour such as problems with authority (parents and teachers), truancy, school exclusion, drug and alcohol use. This pattern of real world risk-taking and anti-social behaviour is much greater than any of the other groups. In addition, this group is defined by the highest levels of online/offline aggression towards others, and a heightened level of experiencing online/offline victimisation at the hands of others (second only to the final group discussed below) This group appear to act more aggressively towards their peers in both the real and virtual worlds, which is reflected in their self-reporting of engaging more frequently in the harassment of others both face to face and online The

group shows similar patterns of non-sexual online risky behaviour to the 'Non-sexually Inquisitive' youth, such as downloading illegal content and sharing photographs, and also reported increased visits to adult pornography sites. Lastly, their receipt of sexual requests and solicitation is higher than that of the previous two profiles, but lower than that of the 'Sexually Inquisitive' adolescents. The group had moderate to low levels of help-seeking behaviour.

The Sexually Inquisitive Profile (17%)

This profile is comprised 189 participants (16.67%), the majority of whom were female (n=163). Their risk taking online behaviour (non-sexual) was high on all items with the exception of visiting pornographic websites. They show the highest scores across all profiles in receiving requests for sexual information both general and specific and also demonstrate high likelihood of meeting up to engage in a sexual activity. They are also relatively likely to be the aggressors when considering online and offline harassment, similar to the aforementioned risk takers, and as already, mentioned, also likely to have been victimised. They had low rates of help-seeking behaviour. They also demonstrate heightened levels of online and offline victimisation in the form of experiencing harassment (similar to the 'Risk-Taking Aggressors').

Meeting a stranger offline for sexual purposes

The item of '*you were asked to meet up for a sexual activity*' was considered the most indicative of risk for sexual abuse offline. Therefore this single item was examined in relation to the four profiles identified and related items. **Table 1** highlights the overall model composition for each of the four profiles, including the factors that proved to be significant in predicting the act of 'meeting up for sexual purposes', as well as the amount of variation that could be explained by this.

Firstly, the only common predictor amongst all four profiles was whether the participant received a non-specific request to 'do something sexual' whilst online. This factor is also the most significant and influential in predicting whether an adolescent will meet to engage in sexual activity with someone they only knew online in all four of the profiles.

The '*Adjusted adolescent*' profile accounted for 18.8% of the variation in explaining meeting with strangers for sexual activity. Meeting peers and adults (sexual activity not specified) unknown offline to the youth; requests for sexual actions online; and requests for sexual information about oneself online all contributed to the model. Although these youth presented with the most normative profiles both meeting unknown adults and peers did present a risk for meeting for sexual activity in person.

The '*non-sexual inquisitive profile*' youth had the lowest level of encounters for sexual activity; variation explained was 12.4%. Truancy from school, as well as harassment both online and offline contributed to the model predicting meeting with someone for sex. In addition, the common shared factor of sexual requests for information which predicted across all four profiles contributed to this model.

The '*Aggressive risk-taking profile*' had a large majority of its variability explained (62.2%). Contributing factors included sexual requests (information and action); meeting peer only known online; drug use; downloading illegal content and

having been the victim of harassment in the real world.

The 'Sexually Inquisitive profile' adolescents engagement with an individual offline for sexual activity was explained by two factors: whether they were requested sexual information online; and whether

were able to predict their likelihood of seeking help.

There were a number of significant unique predictors of help-seeking in the 'sexually inquisitive' adolescent; those were most at risk of receiving solicitations. In this group also, girls were more likely to seek help than

Table 1. Factors associated with sexual encounter offline with unknown adult

Profiles	Significant Predictors	Model R ²	S.E.	Sig.
Adapted Adolescent	-asked to do something sexual (online) -meet an adult face to face that only knew online (sex not specified) -asked for sexual information (online) -meet a peer face to face only knew online	0.187	0.205	0.007
Inquisitive non-sexual	-asked to do something sexual (online) -shared photos/videos online (non-sexual) -truant from school -harassed others online -harassed others face-to-face	0.124	0.210	0.041
Risk-Taking Aggressor	-asked to do something sexual (online) -asked for sexual information (online) -meet a peer face to face only knew online -drug use -download illegal content -being harassed face-to-face	0.622	0.584	0.032
Inquisitive Sexual	-asked to do something sexual (online) -meet adult face to face that only knew online (sex not specified)	0.188	0.87	0.006

in the past they had met with an adult they did not know offline (sexual activity not specified). Together, the two factors accounted for 18.8% of the variation between participants of this profile.

Predicting Help-Seeking Behaviour

The analysis then examined which variables would predict help-seeking following online solicitations. **Table 2** examines some of the key items correlated with such action. Positive relationships in terms of support with both peers and parents were associated as was the female gender. In addition, risky off line behaviours were associated.

The results in **table 2** indicate that factors predicting help seeking behaviour differed across each profile. In the 'adapted adolescent' profile, who were the group least at risk of receiving sexual requests, the only factor remaining in the model was gender. Namely, the odds of girls in this group talking to someone after receiving online sexual solicitations were almost 4 times higher than the odds of boys reaching out. In the 'aggressive risk-taking' profile, the group at second highest risk of receiving sexual solicitations, none of the variables

boys (OR=2.9), as were those with a good friend, and those who engaged in more risky online behaviours. This finding of risky online behaviours predicting help-seeking also existed for the 'non-sexually inquisitive adolescent'. Interestingly, in this group of risk-takers, those who were more often receiving online sexual solicitations were more likely to have talked to someone about these solicitations.

When considering these profiles by respective countries, a similar picture emerges in terms of composition with two distinct country-specific anomalies. Firstly, Italian young people had a much lower representation within the 'sexually inquisitive' (7% in Italy versus 17% overall) grouping, and as a consequence, a higher number of youth than the other groups falling within the 'non-sexually inquisitive' category (45% in Italy versus 33% overall). This is a promising figure which is worth considering in the future. As already mentioned, 'non-sexually inquisitive' young people have similar risk factors to the others groups however are also more likely to seek help/disclose solicitation. For educational purposes, service and program providers may want to focus on the former group, to bring them into the latter. The second distinct

Table 2. Factors associated with help-seeking after receipt of sexual solicitation

Association with help-seeking		B	S.E	Odds Ratio (OR)
Gender	Female	0.58**	0.22	1.8
Social support – good friend to rely on	Yes	0.48*	0.19	1.6
Social support – gets on well with parents	Yes	0.38*	0.19	1.5
Risky offline behaviours		0.09*	0.03	1.1

anomaly refers to the British sub-sample where the inverse holds true; a slightly larger number of young people were categorized as '*sexually inquisitive*' (21% in UK versus 17% overall) with a reciprocal decrease in representation with the '*non-sexually inquisitive*'. As was referenced above with the Italian findings, focusing prevention and intervention with this slightly higher risk group with an emphasis of 'moving' these youth from sexual inquisition to non-sexual inquisitive, thus increasing the likelihood of help-seeking behavior and disclosure is a promising way forward.

Discussion

Young people interact online mostly via social networks, such sites have revolutionized peer to peer communication, offering the opportunity to interact, share information, make announcements and post thoughts and images. Ellison (2007) defines SNS as '*web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system*'. SNS allow users to post an online representation of their self as they wish other to see them, via a series of comments and photographs. They provide an opportunity for interaction and networking on a scale never seen before or thought possible. The rise in popularity of key sites such as Facebook and more recently WhatsApp and Instant Messenger has prompted the development of online communities with their own behavioural norms, methods of communication and discourse. Young people have largely driven the social networking revolution from its early inception. It is clear from this research and other recent research exploring young people's online experience (Martellozzo et al. 2016) that the experience is overwhelmingly positive and that the advantages of this form of networking greatly outweigh the disadvantages, there are however a number of risks that young people continue to be exposed to.

The research presented in this paper provides a unique insight into online behaviour amongst a cross-European sample (UK, Ireland and Italy) of 18-25 year olds students during their formative years (12-16). Survey questions examined their demographic characteristics, on- and offline behaviour, with an emphasis on their risk taking actions in both the real and virtual worlds. Specifically, participants were asked to recall their actions on the Internet; in real life; aggressive behaviour; victimisation and a focus on sexual directed behaviours such as receiving requests for photographs, videos and meeting in person. This led to the identification of four distinct risk profiles that show different behaviours and patterns of actions in respondent's real and virtual lives.

Female respondents, and those with stronger social support from parents and friends, were more likely to seek help after receiving sexual requests or messages online. Those who engaged in more risky offline behaviours were also more likely to seek help. Respondents' level of victimisation, online risky behaviours, online/offline aggressions and receipt of sexual messages did not uniquely predict help seeking behaviour.

These findings are supported by research undertaken by Webster and colleagues (2014). The European Online Grooming Project was funded by the European Commission Safer Internet Plus Programme

and aimed to describe the behaviour of both offenders who groom and young people who are 'groomed' and explore differences (e.g. in demographics, behaviour or profiles) within each group and how these differences may have a bearing on offence outcome; describe how information, communication technology (ICT) is used to facilitate the process of online grooming; further the current low knowledge base about the way in which young people are selected and prepared for abuse online; make a significant contribution to the development of educational awareness and preventative initiatives aimed at parents and young people.

The findings suggest that external factors help to *maintain* the offending behaviour such as the online environment, dissonance and offenders perceptions of young people and their behaviour. The research also identified *salient behaviours* in the grooming process such as: *scanning* the online environment for potential people to contact (described by one offender as a 'fishing trip'), the *identity* adopted by the groomer (be it their own or another); the *nature of contact* with the young person; the different ways in which the online groomer can *intensify* the process of grooming and the diverse range of *outcomes* toward the end of the process. The findings from the EC study have contributed to an understanding of online grooming behaviour and three grooming approaches have been identified: These analyses led to the development of a classification that encompassed three types of online groomer: The first 'type' of groomer identified is the **distorted attachment** offender. Men in this group had offence supportive beliefs that involved seeing contact with the young person as a '*relationship*'. Men within this group did not have any indecent images of children and they did not have any contact with any other sexual offenders online. This group also seemed to spend a significant amount of time online talking to the young person before they met the victim. All men in this group went on to meet the victim to develop or further the '*relationship*'. The second type is the **adaptable online groomer**. Unlike the group above, they did not seem to have discussed the encounter in terms of a relationship. Some men in this group had collections of indecent images of children but they were not significant collections in terms of size. Finally, the **hyper-sexualised** group of men were characterised by extensive indecent image collections of children and significant online contact with other sexual offenders or offender groups. It is clear from the research that not all episodes of online grooming result in a physical meeting. Development of the thematic framework was followed by detailed within and between case analysis to identify and understand associations between broad grooming features and individual offender characteristics (Webster et al. 2014).

The final aspect of the analysis at phase two of the research encompassed understanding the behaviour of young people online via the interviews with online groomers. Despite the research not directly interviewing young people that have been harmed online, the offender interviews provided an insight to the diverse behaviour of young people. A detailed, thematic analysis was undertaken with offenders and a similar victim typology was found. It was clear from the the accounts of online groomers that there was evidence of resilient young people that refused to engage online this group are very similar to the *Adapted Adolescent* group. The key features of young people's resilience included: The ability to: recognise risk and deflect any approach considered to be odd or '*weird*'; understanding and acting upon safety messages; feeling confident about rejecting advances and informing others when necessary. It was also clear

that the resilient young people appeared to come from more secure backgrounds. The *Risk Taking Aggressor* group of young people are very similar to the 'risk taking' group identified by Webster and colleagues (2016). This group were similar to the resilient group but were more prepared to take risks and engage in sexualised interactions. They demonstrated more disinhibition and appeared to be more adventurous online. This group of young people had the feeling that they were in control of situations. It was clear from offender accounts that this group were at risk of blackmail and of being groomed following initial contact usually on social networking sites.

The *Inquisitive Sexual* group share similar characteristics with Webster and colleagues 'vulnerable' group of young people who had a high need for attention, often reported difficult family relationships or who had experienced abuse. This group were the most likely to interact and unlikely to confide in anyone. It was clear from offender accounts that this vulnerability was both recognised and exploited during the grooming process. This group of young people appeared to be most at risk of online sexual abuse and ill equipped to protect themselves (Webster et al. 2014). This finding is supported by Quayle and colleagues (2012) research undertaken with young people groomed online for sexual abuse. The research included depth interviews with young victims who reported feeling as if they were in a relationship with the perpetrator and not initially realising that they were being abused. The young people in this study described feeling as if they were 'trapped in a web' and unable to confide in anyone including their peers. It is evident from the research that those young people who are vulnerable in the real world are also extremely vulnerable online and earlier research conducted in the US has also suggested that this is the case (Wolak 2010).

The study has limitations: First, the questionnaires used purposively designed items rather than standardised tools. This was done in order to assure that many of the theoretical constructs and concepts emerging from the literature, and populating the aims and objectives of the overall study could be responded to; second, the retrospective nature of the questions may have included bias in recall. Research has utilised both cross-sectional and retrospective samples in the past, both which offer benefits and limitations to the findings. For the current study, the facility of access to young adults as well as their ability to reflect on experiences was considered appropriate to the research outputs; third, the retrospective nature of the research may also have provided information on ICT which does not reflect young people's current usage of the Internet; fourth, the sample was comprised of students most of whom were female which threatens the generalizability of findings. Finally the sample was non-random and this places limitations upon the range of appropriate statistical analysis.

Implications

The findings from this research have important implications for policy and practice. This research adds weight to the growing literature which suggests that while the majority of young people are able to safely navigate digital media, a minority are more vulnerable online than others. The approach taken by general educational programmes usually run in schools in most EU countries covers key basic Internet safety issues, but this approach is probably not adequate for

vulnerable young people who may need more intensive guidance and support (Livingstone, 2013). It is essential that practitioners working with this group are trained to address problematic Internet related issues but are also aware in a more general sense of young people's online behaviour, preferences and activities. It is also important for practice and policy to draw upon the latest research findings and to ensure that young people's views are represented and taken into account in policy development. Young people are truly digital natives (Palfrey and Gasser 2013) and it is not inconceivable that their expertise and understanding of their online world could be harnessed in practitioner training. The importance of collaboration across agencies has been a reoccurring theme across the findings from this research it is essential for organisations to find effective ways to work together to ensure that young people are aware of risks and enabled to seek appropriate advice, this is a shared responsibility. Finally there is an urgent need for fast track research funding that supports good research which is more timely and responsive to a rapidly changing technological environment and to young people's ever evolving online experience and behaviour.

Conclusion

Much has been done in the EU to protect young people online, including the work of the Safer Internet Awareness Nodes, the EU Directive (Council of the European Union, 2011) and some new legislation has been introduced at national level which includes online grooming and minimum sentences for indecent image collection and distribution. The work of law enforcement including the Europol Cybercrime Centre (EC3) and the availability of revolutionary technology such as the Microsoft PhotoDNA tool which identifies indecent child images, coupled with legislative child protection measures at national level such as the new Digital Economy legislation (which will be implemented in 2016) introduces the concept of age verification to English law for the first time (this applies only to websites). However, these findings have serious implications for both policy and practice in terms of highlighting the importance of prevention and intervention programmes that include support for more vulnerable young people. The findings are of immense importance for law enforcement, educators, mental health services and industry in informing the provision of support for those youth that may be the most susceptible to negative online experience and in informing the development of safe online environments. Parents must also play a role in this process enabling children and young people to use digital media safely, the latest research suggests that rather than limiting screen time for example, parents should engage in an open dialogue with their children about screen 'context, content and connections', this research also suggests that current policy advice on child Internet safety for parents is outdated (Blum-Ross and Livingstone 2016). Understanding the patterns of real and cyber-risks encountered by young people, as well as individual's likelihood to engage in aggressive online and real world behaviour continues to be of central importance for research, practice and policy.

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