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Online sexuality and its relation to the adolescents' offline world

Thesis

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I declare that I have written the thesis independently and all cited resources have been listed in the references.

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Introduction

“I remember the internet which was accessed via a dialed telephone modem. Later it was accessed via a cable. Then it became much easier to browse the internet and look for what I was interested in. And then these things just ... happened naturally. So as a normal guy, I took a look at it online, it is normal... So, the first webpage which I visited was “Leo”(a pornographic website). It was the most known one at that time. And then the dating sites came. First, it was a classic dating site and then the erotic one. Because as you go deeper into the internet, you realize all the stuff you can find there and mainly how to find it.”

This story illustrates a user's first contact with the internet and sexual content online. Specifically it shows the process of discovering the internet and learning how to use this medium, which resulted in a continuous expansion of internet use for sexual purposes. Moving on from the story to the evidence, it has been shown that the word “sex” is one of the most frequently searched topics on the internet (Freeman-Longo & Blanchard, 1998). This indicates that the internet extended the context of where to access sexual material or even where to establish sexual contacts.

Even though online sexuality has been broadly studied over the past two decades, the primary reason it has received research and media attention is the group of Al Cooper and his colleagues from Stanford University. They conducted two large scale survey studies on sexual activities on the internet. The first sample included over 9000 respondents while the second sample consisted of 7000 respondents (Cooper, Morahan-Martin, Mathy, & Maheu, 2002; Cooper, Scherer, Boies, & Gordon, 1999). Research on online sexuality has developed since then, especially in the U.S., Sweden, UK and the Netherlands, where strong research teams have been established.

Up to now, this issue has not been systematically researched in the Czech Republic except for a study on cybersex (Divínová. 2005; Vybíral, Šmahel, & Divínová, 2004). The present thesis represents an attempt to study online sexuality among Czech internet users. In the research I focused on online sexuality in relation to offline sexual behavior, characteristics of users who have experience with online sexuality, and finally on the particularities of online sexuality in the Czech Republic. The most attention is paid to adolescent internet users who grew up side by side with the internet and who may use the internet for sexual purposes without being sexually experienced offline, e.g. with kissing, oral or vaginal sex. However, studies conducted on adult samples are also presented to understand the specifics of online sexuality.

The thesis is based on six different papers (Studies **I-VI**) which are listed in the following chapter. Two of them have been published, one is in press, and the remaining papers are under review. Generally, the thesis consists of two parts. The first part, the core text of the thesis, represents the synthesis of all Studies **I-VI** and is arranged in the following way: the theoretical part, methods, findings, discussion, and conclusion. The second part consists of the full texts of the papers which are enclosed at the end of the thesis.

In the theoretical part called “Setting the problem”, I introduce the definition of online sexuality, its forms, and continue with the research disciplines where online sexuality has been studied and what topics have been researched. This is followed by a summary of the theories that problematize the issue of online sexuality in relation to offline sexual behavior and the offline world and of how sexuality is culturally shaped. Afterwards I move on to the particularities of internet use, including on- and offline sexual activities and behaviors in the Czech Republic which result in the identification of research problems and gaps. These are summarized into three main research questions: 1) the relationship between on- and offline sexuality, 2) the characteristics of users who have experience with sexually related online

activities, and 3) the particularities of sexually related online activities in the Czech Republic. Offline sexuality is introduced in two ways. First, I focus on offline sexual behaviors or sexual attitudes while presenting what are the effects of internet use for sexual purposes on offline sexuality. Second, offline sexuality is elaborated in the chapter about the specifics of Czech society. This means that only those aspects of offline sexuality which may be influenced by the internet or which helps understand the cultural background of sexual behavior among Czech internet users are introduced and discussed in the thesis.

In the “Methodology” section, these six papers are presented in greater details. Here, I provide a methodological overview of each study, i.e. data sources, samples, measures, and statistical analyses which were employed. Furthermore, the “Findings” section presents all relevant results of the single studies. These are structured according to three main research questions. In the following “Discussion” section I elaborate on the obtained findings on how online sexuality is linked to offline sexual behavior and the offline world. I also question whether any particularities of sexually related activities in the Czech Republic have been found and what are their possible implications for young users. Finally, at the end of the thesis the full text of six papers are presented.

List of original publications and papers

Study I: Sevcikova, A., & Daneback, K. (2011). Anyone who wants sex? Seeking sex partners on sex-oriented contact websites. *Sexual and Relationship Therapy*, 26, 170-181.

Study II: Ševčíková, A., & Konečný, Š. (2011). An exploration of the relationship between real-world sexual experience and online sexual activity among 17 year old adolescents.

Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 5(1).

Study III: Ševčíková, A., Vaznonyi, A., Konečný, Š., & Širůček, J. (under review). Brief report: Predictors of online and offline sexual activities and behaviors among adolescents.

Journal of Adolescence.

Study IV: Ševčíková, A., Šerek, J., Macháčková, H., & Šmahel, D. (under review). The extent matters: Exposure to sexual material among Czech adolescents. *Journal of Early Adolescence*.

Study V: Ševčíková, A., Šerek, J., & Macháčková, H. (in press). Exposure to online sexual materials and cross-country differences. In H. Hrachovec & M. Strano (Eds.), *Proceedings Eighth International Conference on Cultural Attitudes Towards Technology and Communication*.

Study VI: Ševčíková, A., Kvapilík, T., Simon, L., & Daneback, K. (under review). Bothering exposure to online sexual content among adolescents. *Youth & Society*.

Setting the problem

Online sexuality

The empirical research on online sexuality has been running since 1993. During this period, the terminology related to sexuality and the internet has grown as well. A recent literature overview made by Nicola Döring (2009) cites studies on internet sexuality, online sexuality, cybersexuality, sexually related online activities, online sexual activity or online sexual behavior. All those terms refer to sexually related content and activities that occur on the internet (Cooper, McLoughlin, & Campbell, 2000; Leiblum & Döring, 2002). This definition seems to be broad as it includes new forms of sexual behavior that the internet generates as well as those sexual activities which the internet mediates and which had been practiced before integration of the internet into everyday life. The definition also goes beyond the problematic, in the past often discussed issue of whether sexually related online activities are in juxtaposition to “real sex”.

Döring (2009) has identified six main areas of online sexuality which have been separately researched within different research fields. As the definition of online sexuality indicates, the classification of sexually related online activities includes those that can be also practiced offline, e.g. through traditional sexual media such as magazines, videos as well as those activities which are unique to the internet. The following taxonomy presents all the areas with emphasis on the specifics of the internet and novelty of sexually related online activities.

1) Establishing sexual contacts on the internet. Internet users go online to seek sex without any financial exchange. Döring (2009) identifies two types of sex contacts. The first one occurs exclusively on the internet and is considered to be the sole activity that the internet has produced. Sometimes it is called cybersex or online sex and may deal with type-based sex or include web cameras (Waskul, 2002). Usually the interaction occurs in chat rooms or other

platforms enabling synchronous communication. As this activity does not primarily portray internet users' bodies, performers have a wide range of possibilities for experimenting with their self-presentations, sexual scripts etc. which, not surprisingly, has received a lot of attention from a large research community (see Cooper et al., 1999, Döring, 2000; Ross, 2005; Šmahel, 2003; Whitty, 2008).

The second type of sex contact leads to real-world sexual encounters. Although dating services had been used before the invention of the internet, online personal advertisements are specific in that sense that they anonymously connect people who live in geographic isolation, with specific sexual practices or from sexual minorities (Döring, 2009; Daneback, Cooper, & Månsson, 2005).

2) Online sexual subcultures. Döring (2009), in her overview, specially defines participation in sexual online communities as a separate sexually related online activity. These online subcultures that unify discriminated individuals (e.g. lesbians or gay men) are unique in that they support their members in emancipation and empowerment. For instance, McKenna and Bargh (1998) have found that active participation in an online community contributed to reformulation of one's own self-concept, i.e. those with homosexual orientation, through their involvement in an online newsgroup, were more likely to come out about their secret identity to their family and friends than those who were just passive lookers.

3) Accessing sexual information on the internet. The internet provides a large amount of information related to sexuality and sexual health which may be discretely sought out by internet users of all generations (Daneback, Månsson, Ross, & Markham, in press; Suzuki & Calzo, 2004). Internet users access sexual information due to reasons of embarrassment, curiosity and a need to increase their knowledge. For instance, males users, those who had not had sex in the last 12 months as well as those who had rarely had sex tended to seek information about sexuality due to embarrassment (Daneback et al., in press).

4) Online pornography. With the expansion of the market on the internet, development of file-sharing websites, and networking sites, internet users may easily access both commercial and non-commercial pornography which can come either from the conventional (mainstream) pornography industry or from amateur production (see Hardy, 2008). Therefore, the internet provides not only an opportunity to accentuate one's own activity in producing pornographic materials but also facilitates access to minority types of pornography (e.g. child, violent or animal pornography) which is also an issue of public concern and criticism.

5) Sex shopping on the internet. Online sex shops represent an extension of existing offline shops, but they can also be purely internet-based. Although online sex shops may accentuate the anonymity level of sex shopping, according to Daneback, Månsson and Ross (2011) the primary reason for making the purchase online was convenience. In comparison to commercial online pornography, online sex shops mainly focus on selling non-digital products. Specifically, a recent study shows that vibrators and dildos are the most popular items in online shops (Daneback et al., 2011).

6) Sex work on the Internet (online prostitution). In the perspective of expansion, the internet is used for the advertising of sexual services (e.g. offline brothels or sex tourism) (Döring, 2009). Besides mediating offline products, sex work comprises only online contact between the client and the sex worker where the customer types in what the sex service provider is expected to do/show on the webcam.

It is worth noting that the taxonomy has been primarily developed based on sex research on adult population. However, prior work provides evidence on internet use for sexual purposes among adolescents. For instance, adolescents establish contacts on the internet within which they discuss sexually relevant topics and take part in sexually-tinged conversations (Smahel, Subrahmanyam, 2007; Subrahmanyam, Smahel, & Greenfield, 2006). Additionally, some of them may have some experience with cybersex (Vybíral et al., 2004).

While seeking romantic partners they create sexual self-representations and sexual nicknames (Subrahmanyam et al., 2004; Subrahmanyam et al., 2006). They also use the internet as a source of sexual information; specifically seeking answers to their questions regarding sexuality and health (Graya, Klein, Noyce, Sesselberg, & Cantrill, 2005; Suzuki & Calzo, 2004). Some studies report consumption of pornography by adolescents (Mesch, 2009; Ševčíková & Šmahel, 2008; Wolak, Mitchell, & Finkelhor, 2007).

In relation to the taxonomy developed by Döring (2009), adolescents engage in large-scale sexually related online activities, ranging from establishing contacts for romantic rather than primary sexual pursuits, through disclosing sexual orientation online, to accessing sexual information and pornography. To date, there is a lack of evidence on the active participation in online sexual subcultures by adolescents. Contrary to the adult population, research on adolescents documents the involvement of older teens in sexual self-presentation (Siibak, 2007; 2010; Smahel & Subrahmanyam, 2007; Subrahmanyam et al., 2006).

Generally, the abovementioned studies provide relatively strong evidence that the internet plays an important role in the sexual lives of adults as well as adolescents. At the same time they have shown how each sexually related online activity is unique and may alter sexual behavior and sexually related experiences.

Perspectives of the research on online sexuality in relation to offline sexual behavior: what affects and how it affects

Research of online sexuality and its relation to offline sexual behavior is interconnected to various research disciplines. Each of these seems to focus on a delimited part of the complex issue of sexually related online activities and their link to offline sexual behavior. For instance, the perspective of **internet psychology** outlines how the characteristics of the internet may affect internet use for sexual pursuits. The first large survey on online sexuality conducted in the last millennium has shown the internet has brought nearly unlimited Access

to a wide range of sexual content for Affordable prices in a private – Anonymous setting. These underlined “A”s actually stand for the historically first theory on sexuality in cyberspace proposed by Cooper (1998). This theory, called the Triple-A Engine, aimed to use the characteristics of the internet to explain why this medium may be considered a powerful medium affecting sexual behavior. Later on, the Triple-A engine was expanded by adding two more “A”s and renamed to Quin-A Engine. The first new “A” stands for Acceptability; the internet is understood as an acceptable way for dating and accessing explicit sexual materials (King, 1999), while the second “A” represents Approximation; the ability to experiment with one’s self and behavior by e.g. approximating being gay, either through fictitious selves or cybersex (Tikkanen & Ross, 2003).

The internet may also be powerful in another way. Michael W. Ross (2005) introduces the concept of “typing, doing, and being”; i.e. what s/he is typing on the screen does not necessarily represent what s/he is doing nor s/he is. This mismatch between those dimensions may motivate individuals to experiment with internet use for sexual purposes. For instance, it has been documented that through fictitious online self-presentations on the internet, users can infiltrate sexual communities and approximate homosexual contacts (Tikkanen & Ross, 2003). However, this new opportunity to explore sexuality may jeopardize internet users’ health. Specifically, those who have female partners and approximate homosexual contacts via the internet are more likely to engage in unprotected anal intercourse with casual partners (Tikkanen & Ross, 2003). There is one possible explanation which clarifies the users’ reduced willingness to use condoms. At the same time this explanation also demonstrates another particularity of the internet which seems to be important for engaging in sexually-related online activities. It concerns accelerated self-disclosure on the internet (Spears, R., & Lea, 1992; Suler, 2004). In an anonymous setting, an internet user is more willing to disclose emotions and intimate/private topics which in turn evokes trust. Due to this highly intimate

discussion, users seeking sexual partners via the internet may establish sexual contact more rapidly (Ross, 2005). At the same time they are more likely to develop the feeling that they know the person well and therefore there is no need to discuss safety issues (Ross, Rosser, & Stanon, 2004).

Apart from exploring the effects that the characteristics of the internet may have on sexuality, the research focus has also concentrated on content mediated by the internet and its potential impact on offline sexual behavior and sexual attitudes. At the level of research discipline, this represents the shift from the field of internet psychology to **media psychology**. The interest in the effects of mediated content on sexuality has also its justification in the fact that the internet has expanded with access to sexual materials which are nearly irrespective to the age of internet users. Some researchers have clearly documented that this unlimited access to sexual materials may produce new forms of exposure to sexual materials. Specifically, apart from intentional consumption of sexual materials, young internet users may face unintentional exposure of online sexual materials (Mesch, 2009; Wolak et al., 2007) which may in turn increase the extent to which they get exposed to sexual materials using the internet.

In terms of the effects of exposure to online sexual content on sexual behaviors, several questions were studied. Speaking about adult population, one of the social concerns deals with whether pornography portraying delinquent or violent content may encourage their consumers in such behavior (see overview Döring, 2009; Lišková 2009). Empirical research provides evidence that the consumption of violent pornography can increase the probability of sexually aggressive behavior only among a few sexually aggressive men (Hald & Malamuth, 2008). However, in general no relation has been documented between the prevalence of pornography and acts of sexual violence in society (Diamond & Uchiyama, 1999). Similarly, there is a lack of evidence on whether consumption of mainstream pornography leads to the

adoption of a sexist view on women, dissatisfaction with one's own sexual life or undermining traditional values of family and marriage (Döring, 2009).

In comparison to the adult population, adolescent internet users seem to be more vulnerable to what online sexually-explicit images communicate. For instance, prior research has documented the impact of exposure to sexual materials at a young age on the acceleration of the onset of sexual behavior (Bleakley, Hennessy, Fishbein, & Jordan, 2008; Brown & L'Engle, 2009; Brown et al., 2006). Furthermore, there is relatively strong evidence that consuming online sexually explicit materials leads to the decreased quality of one's sexual life, specifically to increased sexual uncertainty of adolescents (e.g. being unsure about what s/he likes or dislikes in sex) (Peter & Valkenburg, 2010a) and continuous decrease of adolescent's sexual satisfaction (Peter & Valkenburg, 2009a). Furthermore, it has also been found that increased exposure to sexually explicit internet materials can influence adolescents' attitudes toward sex; i.e. adoption of less progressive gender role attitudes (Brown & L'Engle, 2009; Peter & Valkenburg, 2010a) or beliefs that sex is primarily physical and casual rather than affectionate and relational (Peter & Valkenburg, 2010b).

When comparing adolescents and adults, the effects of exposure to online sexual materials differed. Specifically, only adult men have been found to be less likely to use a condom with an unknown person after exposure to sexual materials on the internet (Peter & Valkenburg, 2011). This indicates that the impact of sexual materials on sexual behavior is a complex issue and may vary depending on the measured type of sexual behavior or sexual attitude. Furthermore, it is also possible that the way adolescents and adults are exposed to sexual materials on the internet may also influence the final effects by exposure on sexual behavior. For instance, the frequency of exposure to sexual materials which influences the extent of exposure effect (L'Engle, Brown, & Kenneavy, 2006) has not been considered in this study although including this parameter of exposure into analyses may critically evaluate

whether there are differences in the impact of exposure to sexual materials online on risk sexual behavior among adolescents and adults.

Moving on, studying the relationship between internet sexuality and offline sexual behaviors with special focus on adolescents also intersects with **developmental psychology**. It questions how the internet is used in relation to developmental changes. Scholars postulate that adolescents experience fundamental changes, fulfill developmental tasks within the contexts which surround them (Havighurst, 1948; Hill, 1983; Macek, 2003). In terms of sexuality, they have to accept their body including physiological changes, sexual maturation, and sexual role (Macek, 2003). Furthermore, they are expected to use their emotional and cognitive capacity to establish and maintain relations with their peers and to acquire experience with erotic relationship and prepare for a partner relationship and family life. The perspective of adolescence as a time for fulfillment of developmental tasks indicates that an adolescent is put under pressure by needs and expectations which may have a biological, psychological, and cultural nature (Havighurst, 1948).

In the age of a close interconnection of the internet and everyday life, opportunities for fulfillment of the developmental tasks have expanded. Especially, in relation to sexuality the internet may play an important role for adolescents as it can help them overcome their shyness while exploring sexuality. Prior research has documented that adolescents use the internet to fulfill their task of establishing their sexuality. For instance, they have been found to access sexual information online (Suzuki & Calzo, 2004), to look for romantic partners (Smahel & Subrahmanyam, 2007; Subrahmanayam et al., 2006), to participate in sexual conversations (Divínová, 2005; Šmahel, 2003) or seek sexual materials online (Brown & L'Engle, 2009; Peter & Valkenburg, 2010a). These findings indicate that adolescents have fully adapted to the internet and use it in line with their developmental needs.

To sum up, research on internet sexuality and its relation to offline sexual behaviors may be conducted using various approaches which complement each other. In particular, it has been shown how internet characteristics may attract people to use this medium for sexual purposes, specifically to engage in new forms of sexually related activities which in turn may affect offline sexual behavior. At the same time, it has been documented that sexual maturation and expectations related to psychosexual development may encourage young people to turn to the internet to explore sexuality. And finally, it has been demonstrated how internet-mediated sexual content can influence offline sexual behavior. This perspective on using different approaches reveals a map of effects to which an internet user may be exposed. Looking at directions of effects, they seem to be amplified as (1) the particularity of the internet goes hand in hand with the need to explore sexuality or (2) both online sexually related interaction and exposure to online sexual materials may affect offline sexual behavior. To conclude, the internet is a specific medium, revolutionary in the multiple effects that are produced within the interaction of internet use for sexual purposes and offline sexual behavior.

Theoretical considerations

Co-construction model

The co-construction model was first developed by Patricia Greenfield (Greenfield, 1984) and aims to connect developmental processes with the internet. This model takes into account that the internet is no longer a medium which affects its passive users and which is used by different people for different purposes or gratifications (see Uses and gratification theory of mass media proposed by Blumler and Katz (1974)). Subrahmanyam with her colleagues (Subrahmanyam et al., 2004; Subrahmanyam & Šmahel, 2011; Subrahmanyam et al., 2006) have found that thanks to the interactive features of the internet, users construct and co-construct their online environments by using available tools in ways that their designers

seem to have never anticipated. Furthermore, there is strong evidence that internet users create new context within which norms are formed, shared with other users (Davis, Hart, G Bolding, L Sherr, J Elford, 2006; Kalmus, Pruulmann-Vengerfeldt, Runnel, & Siibak, 2009). These findings indicate that internet users are creative – co-constructive regarding online content, not only passive recipients of internet-mediated materials.

This view has an implication in that the internet is used in the way within which offline and online worlds are connected (Subrahmanyam & Šmahel, 2011). Then the internet can be perceived as a playground for developmental issues from their offline lives as well as an extension of their offline lives which implicates some continuum between online and offline worlds. Subrahmanyam and Šmahel (2011) propose that online and offline physical worlds are interconnected not only in terms of topics but also in terms of behavior. Thus, primary adolescent sexuality on the internet can manifest in two ways. The internet may serve as a projection screen where adolescents can discuss sexuality without having any offline sexual experience. At the same time, sexually experienced youth may seek out sexually related activities on the internet. Taking into account the particularities of the internet, Subrahmanyam and Šmahel (2011) conclude that the online worlds may be similar, exaggerated or even reversed from the offline worlds. However they are still related to adolescents' developmental needs. The co-construction model is not a theory per se, but rather a perspective (or an approach) to study the relationship between online and offline worlds.

Theory of sexual scripts

The script in sexual research has been introduced by Gagnon and Simon (1973/2005). According to them, the term can be understood as a metaphor that explains when sexual conduct becomes possible. It supposes that all parts of the script have to be present to make a sexual act occur. In other words, scripts define the appropriate setting, appropriate actors and appropriate behaviors. If some part is lacking or inadequate, then no sexual event will occur.

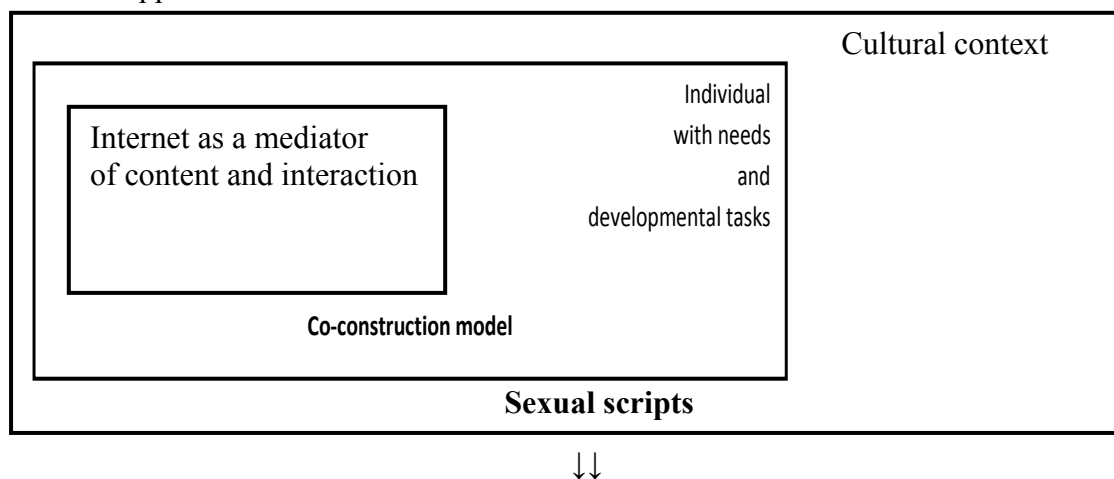
This implies that sexual scripts are learned, shared but at the same time, as the authors note, undergo changes since they are produced within three mutually interconnected dimensions – cultural, interpersonal, and intrapsychic. Cultural scenarios include the socio-cultural norms and values that influence an individual's sexual behavior. Interpersonal scripts are the individual's interpretations of these cultural scenarios. Intrapsychic scripts capture an individual's thoughts and reasoning about sexuality in relation to both cultural scenarios and their sexual behaviors. Thus, intrapsychic scripts interact with interpersonal scripts and at the same time the individual's interpretations of cultural scenarios affect cultural scenarios through practice. Thus, the concept emphasizes the fluidity of sexual scripts and their inter-relation.

The scripting approach, again, is not a theory per se but rather a perspective to study sexuality. It takes into account the context which affects whether sexual events occur or not. Due to the continuously increasing penetration of the internet into everyday life, it provides a useful tool for understanding internet sexuality and analyzing the relationship between sexually related online activities and offline sexual behavior. Primarily, the internet, in particular specific online locations where shame and guilt are suppressed, can represent a place where intrapsychic scripts (desires, dreams, and phantasies) may be projected (Daneback, 2006). Apart from that, the internet modifies the context with whom it is possible to share sexual matters as online sexual content can be accessed within a safe distance from family members or peers (Daneback, 2006). Those modifications of contexts in which sexual events become possible question how sexually related online activities are linked to offline sexual behavior as well as how intrapsychic scripts manifested on the internet relate to users' interpretations of cultural scenarios. Furthermore, the scripting approach stresses that sexual behavior is primarily culturally shaped, which leads us to question which factors may be

behind the country-by-country differences in sexual behavior that scholars observe in their research on either offline or online sexuality (see Arnett, 2002; Livingstone et al., 2011).

The following scheme (Fig 1) pictures the above-mentioned theoretical approaches – the “Co-construction model” and “Sexual scripts theory” in relation to the constructs; (1) the internet as a mediator of content and interaction, (2) an individual who uses the internet in line with his or her needs and developmental tasks, and (3) a cultural context that may shape the relationship between sexually related activities and offline sexual behaviors. The scheme summarizes the main notes: a) the internet as a unique environment and a tool for fulfillment of one’s needs and developmental tasks and b) cultural influence on patterns of internet use and fulfillment of one’s needs and developmental tasks. This is the framework within which the following studies on examining the relationship between sexually related online activities and offline sexual behaviors were conducted.

Figure 1. Online sexuality in relation to offline world within the integrative perspective of theoretical approaches.



Relationship between sexually related online activities and offline sexual behaviors

Czech context

The Czech Republic is a transitional post-communist country in Central Europe with a 40-year history of a communist establishment. This period was ended by the “Velvet revolution” in 1989 which was followed by a fundamental transition process producing large

scale cultural changes (Mareš, 2004). However, it is worth noting that in terms of intergenerational differences in values and attitudes in Czech society, these transition changes have been smooth and no radical intergenerational disruption has been observed in comparison to other post-communist countries (Kalmus & Vihalemm, 2008). Although these changes can affect all areas of life, in this chapter I focus on issues of the emerging information society including internet use patterns and subsequently on the characteristics of sexual behavior in the Czech Republic including Czech attitudes towards sexual behavior.

The Czech Republic has become a country which intensively adopted the internet. In 2011, approximately 71% of the population was identified as internet users (Internet World Stats, 2011). However, there are apparent intergenerational differences. The survey representing the population of the Czech Republic from over 12 years age has shown that 93% of Czech youth aged 12-18 years used the internet while only 63% of Czech adults aged 34-40 were internet users (Lupač & Sládek, 2008). According to Lupač and Sládek (2008), the Czech society is lagging behind in the informatization process; this holds especially for the older generation, people with low education, and people from low-income households.

When comparing with the 27 members states of the European Union, the Czech Republic almost reaches average internet penetration (Internet World Stats, 2011). In comparison to Central and Eastern European countries only, Slovakia (79.2%) and Estonia (77.5%) have higher percentages of internet users than the Czech Republic. For a full picture, neighboring countries such as Germany or Austria has reached an internet penetration of 82.7% and 74,8% respectively, while Poland reported an internet penetration of 62%. To sum up, the statistics indicate that the Czech Republic belongs to average-use countries.

With respect to internet use by children, the Czech Republic was also classified as an average-use country (Hasebrink, Livingstone, Haddon, & Ólafsson, 2009). However, in comparison to other European countries, Czech children (9-16 years) scored high on the time

spent online daily scale (approximately 110 minutes) (Lobe, Livingstone, Ólafsson, & Vodeb, 2011). This is an important finding which goes hand in hand with another particularity of internet use in the Czech Republic. Hasebrink and his collective classified the Czech Republic as a country with medium-internet use associated with high risk that children may encounter online (Hasebrink et al., 2009). This has been confirmed in a follow-up cross-national EU Kids Online survey where young Czech users had increased rates of exposure to sexual images, receiving and sending sexual messages, meeting new people online, cyberbullying, or exposure to potentially harmful user-generated content on websites (Lobe et al., 2011). However, it is worth noting that risk does not mean harm. The EU Kids Online survey revealed that Czech children were less likely to be bothered by something online, although they scored high on online risks, (Livingstone, Haddon, Görzig, Ólafsson, 2011).

Livingstone and Haddon (2009) view the association between average use and high risk as an indicator of a new entrant country where the regulatory infrastructure and safety-awareness are under-developed. However, there is also another explanation of the association. According to Kalmus' and Roosalu's (2012) findings, Czech youth seem to lack proper parental control in this area in comparison with other European youths. Specifically, Czech parents were found to be relatively passive in terms of adopting mediation strategies for internet use and internet safety; social monitoring, restrictive mediation and using technical solutions were less frequently present when compared to the European average. Recalling the generational gap in internet use typical for the Czech society (Lupač & Sládek, 2008), it may be that parents are less confident providing their children information on how to use the internet. At the same time they could consider it important that their children develop digital skills which prevent them from restricting their internet access.

I have mentioned that young Czech internet users have increased rates of risks that they encounter online. This is especially true for receiving and sending sexual messages via

the internet and exposure to online sexual materials. In terms of receiving and sending sexual messages online, the already mentioned EU Kids Online survey has shown that young Czech internet users aged 9 to 16 years had the second highest prevalence among 25 European countries; 10 % of young Czech users have sent or posted sexual messages, while 21% have seen or received sexual messages (Livingstone et al., 2011). Similar results have been found for exposure to offline or online sexual materials. Young Czech internet users had the second highest exposure in comparison to other European countries (Livingstone et al., 2011). Twenty-eight percent of all adolescent users in the Czech Republic have seen sexual images on some websites, 45 % have seen them online or offline. To compare, Norway had the highest rates (34% online, 46% online or offline), contrary to Germany which had the lowest proportion of exposure to sexual content (4% online, 10% online or offline). Furthermore, it is worth noting that this trend continues in later developmental period. The data of the World Internet Project have revealed that Czech emerging adults aged 19 to 21 years reported the highest exposure to online sexual materials in comparison to other six countries (USA, Canada, Singapore, New Zealand, Hungary, China) (Subrahmanyam & Smahel, 2011). Generally, exposure to online sexual materials seems to be a widespread phenomenon in the Czech Republic.

In terms of attitude towards offline pornography, it is worth noting that Czech society has experienced a continuous deliberalization trend. Comparing two cohort groups from 1993 and 1998 representing the population of the Czech Republic, both of which were 15 years old, has revealed an increasingly restrictive attitude toward pornography (Weiss & Zvěřina, 2001). However, these data were obtained before broadband internet penetration into Czech society which definitely expanded access to sexual content and which might affect Czech attitude toward pornography. Although it remains unknown how the attitude has changed under the influence of internet penetration, the EU Kids Online survey provides a sort of piecemeal

evidence that only 23% of Czech young internet users (of those who have seen sexual images online) have been bothered by seeing sexual images online, and this percentage has decreased with age.

On contrary, Czech society experiences liberalization in attitudes towards other forms of sexual behaviors. For instance, Czechs are more tolerant to premarital vaginal intercourse, in particular among Czech women a continuous liberalization trend has been found in masturbation, casual sex, homosexuality, and contraception use. In comparison to other countries, Czech attitudes towards sexual behavior seem to be more liberal and less restrictive than in Western European and American societies, and their sexual attitudes show patterns of continuous liberalization across generations (Weiss & Zvěřina, 2001).

Despite the observed liberalization patterns in Czech society, the cited survey conducted by Weiss and Zvěřina (2001) shows a double decrease in the average number of sexual partners (including casual sexual partners) which contrasts to a deeply-rooted belief about liberated sexual behavior in the Czech Republic. However, in terms of sexual debut, there is a continuous decrease in the age of sexual onset. While in 1998 only 5.3% of 15-year-old boys and 1.3% of 15-year-old girls had vaginal intercourse before 15 years (Weiss & Zvěřina, 2001) , in 2008 this prevalence has sharply increased (15. 8% for boys and 10.4% for girls in a sample of 1000 respondents aged 15-17years) (Katrňák, Lechnerová, Pakosta, & Fučík, 2010). Although Czech youth experience a relatively early sexual debut, their sexual onset seems to be perceived as an integral part of adolescent development which occurs within romantic relationships with contraception use (Katrňák et al., 2010). Similarly, Weiss and Zvěřina (2001) have found in their survey that Czech society become more and more responsible for contraception use. Placing this finding into a broader context, it seems this result is culturally specific and particular for the Czech Republic. For instance, in the United States there is the evidence of an ambivalent attitude toward premarital sex which is often

associated with increased rates of unwanted pregnancy and abortion (Arnett, 2002). To sum up, Czech society has adopted liberal attitudes towards some forms of sexual behavior. Yet, at the same time there seems to be a lack of evidence that Czechs have a tendency to participate in risky sexual behaviors, at least in offline worlds.

Research problems

So far, I have presented what are the possible effects of the interaction of internet use for sexual purposes and offline sexual behaviors and what effects internet users are exposed to. Specifically, I have shown how the particularity of the internet goes hand in hand with the need to explore sexuality and how both online sexually related interaction and exposure to online sexual materials may affect offline sexual behavior. At the same time I have documented that internet use for sexual purposes is, to some extent, peculiar for the Czech Republic as some sexually related online activities such as sending and receiving sexual messages and exposure to online sexual material seem to be salient in young Czech internet users. This may lead to a large amount of questions on the links between internet sexuality and offline sexual behavior and I will pinpoint only some of these, addressed in the following studies.

Taking into account the particularity of the internet and the ways internet users may sexually interact online and build intimate relations on the internet, attention should be turned to the question of how the content of online sexually related interactions is transformed into offline sexual interaction. This issue is even more relevant when considering that the absence of social cues lead to disinhibited sexual interaction within which internet users develop new sexual scripts different from those for offline sexual encounters (Divínová, 2000; Döring, 2000). Although it is known that most online sexual interactions remain on the internet, some of them lead to offline meetings (Ross, Rosser, & Stanton, 2004; Wolak, Finkelhor, Mitchell, Ybarra, 2010) which questions the extent and how content discussed online is reflected in

offline sex. This issue is elaborated in the first article which focuses on a particular sexually related online activity – seeking sexual partners through erotic dating websites (Study I).

Prior research has documented that adolescents have fully adapted to the internet and use it in line with their developmental needs. In particular, they use the internet for the task of establishing their sexuality (Šmahel, 2003; Smahel & Subrahmanyam, 2007; Subrahmanayam et al., 2006; Suzuki & Calzo, 2004). There is evidence that exposure to online sexual materials is linked to offline sexual behavior (Brown & L'Engle, 2009). Taking into consideration an interactive level of internet use for sexual purposes, there is a lack of studies that would examine adolescent's exploration of sexuality on the internet in relation to his or her offline sexual behavior. Generally, it is known that adolescents gradually acquire sexual experiences from masturbation (Halpern, Udry, Suchindran, & Campbell, 2000), kissing, petting/caressing intimate parts, to oral sex and vaginal intercourse (Lacinová, Michalčáková, Ševčíková & Konečný, 2011). At the same time they differ in sexual onset and thus in the extent of acquired sexual experiences. Even more, sexual experience plays a crucial role in peer groups. For instance, it often appears as part of social status, especially among adolescent boys (Macek, 2003). Therefore, it remains unknown how sexually related online activities relate to offline sexual behavior in the digital age – whether those with no offline sexual experiences will use the internet less for sexual purposes than adolescents who have offline sexual experiences, whether online sexual practices increase gradually in line with offline experience or whether individuals turn to the internet to compensate for missing sexual experiences (see Šmahel, 2003). This issue is problematized in the second article which explored the degree of correspondence between sexual behavior in the real world and on the internet (Study II).

Exploring the link between sexually related online activities and offline sexual behavior only on the level of manifestation might provide a rather incomplete picture.

Adolescent sexuality is a complex issue that is predicted by a large scale of predictors, e.g. advanced pubertal status (Bearman & Brückner, 2001; Udry, 1988) or the quality of attachment to peers (Markham, Normand, Gloppen et al., 2010). In relation to internet use, the effects of these predictors may be accentuated. For instance, those with advanced puberty may turn to the internet to explore sexuality and seek support there as the majority of their peers lag behind in their psychosexual development. Similarly, those who have difficulties with their peers and at the same time long for an intimate relationship might be more prone to use the internet for seeking new relationships for possible sexual exploration. However, these are only assumptions. The next study aims to explore predictors of sexual behavior in relation to internet use for sexual purposes (Study **III**).

Speaking about sexuality on the internet, prior research indicates the need to focus on exposure to online sexual content which has been found to be predominant among Czech young internet users. Although prior research has identified psychological predictors of exposure to online sexual materials, it remains unclear why there are high rates of exposure in the Czech Republic, whether there is any variety in the extent and form of exposure and thus in predictors and to what extent exposure is a part of psychosexual maturing among Czech adolescents. The subsequent study focuses on the extent of exposure among Czech adolescents, specifically on the identification of young internet users who are exposed to online sexual materials and the extent of exposure (Study **IV**). Following evidence on the link between psychosocial risks and premature sexual activities (Bearman & Brückner, 2001; Bellis, Hughes, Calafat et al., 2008; Kuortti & Kosunen, 2009; Orr, Beiter, & Ingersoll, 1991), the study questions whether greater exposure to online sexual material at a young age is associated with an increased number of psychological difficulties and risks.

Based on the EU Kids Online II survey, exposure to online sexual materials seems to be highest in Nordic countries and some Eastern European countries (including the Czech

Republic) and lowest in Southern Europe and predominantly Catholic countries (Livingstone et al. 2011). This indicates that some country specifics may be behind the observed differences. This issue is elaborated in the fourth study which aims to identify country-level factors that could be causing these national differences (Study V).

Exposure to online sexual materials seems to be specific when compared with exposure to traditional sexual media such as X-rated magazines, videos or movies as accessibility to sexual materials has been expanded and made easier. Furthermore, malicious software such as popup windows increases the probability that sexual content on the internet may appear on the screen even unintentionally (Wolak, Mitchell, & Finkelhor, 2006). This is only an example showing that sexual materials may be easily available through various channels and various usage patterns. Thus, the following qualitative study aims to expand research on the predictors of exposure to online sexual materials by focusing on the context in which Czech adolescents encounter sexual images on the internet (Study VI).

Research questions

To summarize the research aim, the goal of this thesis is to problematize the relationship between sexually related online activities and offline sexual behaviors and predictors which are behind sexually related online activities. As already mentioned, the online environments can be viewed as something revolutionary that could alter sexual experiences both offline and online.

I What is the relationship between sexually related online activities and offline sexual behaviors?

- Whether and how is content discussed online reflected in an offline sexual encounter?

(Study I)

- Are sexually related online activities in adolescence positively or in a compensatory way associated with offline sexual behaviors? (Study **II, III, VI**)

II What predicts sexually related online activities?

- What predicts interaction-based sexually related online activities? (Study **III**)
- What predicts online exposure to sexual material? (Study **IV**)

III What are the particularities of sexually related online activities in the Czech Republic?

- Are there any predictors which may explain higher rates of online exposure to sexual material (Study **IV, V**)
- Are there any specifics of exposure to online sexual materials among Czech adolescents (Study **VI**)

Method

Data sources

In order to answer the study questions, the methodological base of the thesis is varied. I used both the qualitative (Study **I**, **VI**) and quantitative approach (**II**, **III**, **IV**, **V**) to analyze cross-sectional and longitudinal data. First of all, I will present the basic information about samples and then provide background for the surveys.

Table 1. Basic information about data source.

Project	Studies	Data collection	Number of respondents	Method	Data
Qualitative study I	Study I	2007-2009	17 participants at age 22-56	Face to face and online interviews	
ELSPAC	Study II, III	2006/2007 and 2008/2009	462 respondents in Study II and 323 respondents in Study III	Computer-administrated questionnaires	Psychological longitudinal study from 2005-2011)
EU Kinds Online II	Study IV,V	April - October 2010	610 respondents aged 11-15 years in Study IV and 12472 respondents aged 11-15 years in Study V	Face to face interviews and self-completion paper-based questionnaire	Representative for internet-using-children
Qualitative study II	Study VI	2011	15 participants aged 15-17 years	Online interviews	

The thesis utilizes four different data sources (see Table 1). The first qualitative study (Study **I**) was based on in-depth interviews with participants who used free and legal sex-oriented contact websites to search for sexual partners. The second qualitative study (Study **VI**) was also based on in-depth interviews with participants who were exposed to online sexual material and who considered their exposure to be bothering.

The ELSPAC project (the European Longitudinal Study of Pregnancy and Childhood), the Czech part of this project, was initiated in 1991, when the research sample consisted of all children whose residential addresses were in the city of Brno (approximately 5000 families)

and all children whose residential addresses were in the district of Znojmo (approximately 1500 families), and who were born in the period March 1st 1991 – June 30th 1992. The initial sample included 5549 families. From this sample, 3859 mothers had been surveyed since the prenatal period and repeatedly completed questionnaires (for more information on the ELSPAC sample see Širůček, 2002; Smékal, Lacinová & Kukla, 2004). Since 1999, from the original sample only 883 children and their parents have taken part in broader psychological assessments. These have taken place at intervals of about 2-3 years, when the children were 8, 11, 13, 15 and 17 years old. This sample was affected by continuous attrition (at age 11 - N = 876, at age 13 - N = 617, at age 15 - N = 554, and at age 17 - 477).

The EU Kids Online II which was funded by the EC Safer Internet Programme from 2009-11 aimed to enhance the knowledge of European children's and parents' experiences and practices regarding risky and safer use of the internet and new online technologies. Adopting an approach that is child-centered, comparative, critical and contextual, EU Kids Online II has designed and conducted a major quantitative survey of the experience of 9-16 year olds with respect to online use, risk and safety in 25 European countries. Specifically, 25 142 children (50% girls) were interviewed together with their parents. 'Using the internet' was conceptualized as using any device which allows the respondents to go online and any place where they go online. The EU Kids Online II survey investigated key online risks ranging from pornography, bullying, receiving sexual messages, contact with people not known face to face, offline meetings with online contacts, to potentially harmful user-generated content and personal data misuse (for more information see www.eukidsonline.net).

Measures

In Table 2 there is a brief summary of measures and statistical analyses which were used in Studies (I-VI). Both the measures and data analyses are described in greater detail in the

respective papers, which are included in the thesis. In both qualitative studies, the grounded theory method developed by Strauss and Corbin (1990) was employed for data analysis. In terms of the quantitative data, the PASW (SPSS) Statistics, versions 18.0 and 20.0, software was used. Standard descriptive analyses regarding variables were also performed, including correlation analyses.

Table 2. Overview of measures and data analyses

Study	Measure	Main analysis
Study I		Grounded theory method
Study II	Offline sexual behaviors at age 17 (4-dichotomous items) Sexually related online activities at age 17 (10 items)	T-test analyses
Study III	Peer attachment at age 15 - adapted and expanded Inventory of parent and peer attachment (Armsden & Greenberg 1987; Širůček & Širůčková 2008) Pubertal status (single item) Offline sexual behavior at age 15 (5-dichotomous items) Offline sexual behaviors at age 17 (4 dichotomous items) Interaction-based sexually related online activities at age 17 (9 items)	Hierarchical, binary logistic regression
Study IV	Exposure to online sexual materials Frequency of internet use Emotional problems (derived from the Strength and Difficulty Questionnaire by Goodman, Ford, Simmons, Gatward, & Meltzer, 2003) Sensation seeking (Stephenson, Hoyle, Palmgreen, & Slater 2003) Excessive internet use (derived from the scale suggested by Šmahel, Vondráčková, Blinka, and Godoy-Etcheverry, 2009)	Multinomial logistic regression analysis
Study V	Broadband penetration (EUROSTAT - 2009) Religious faith (European Value Study - 2008)	Multilevel regression
Study IV		Grounded theory method

Findings

The following part presents and interconnects empirical findings that were obtained in Studies (I-VI). Specifically, they are presented in 3 parts with respect to the above-mentioned research questions on the relationship between sexually related online activities and offline sexual behaviors, predictors of sexually related online activities and their particularities in the Czech Republic.

The relationship between sexually related online activities and offline sexual behaviors

In Study I, the data derived from the qualitative study on dating via sex oriented contact websites were used to analyze how online sexual contacts were negotiated and transferred from online interactions into offline encounters. This study has shown that on sex orientated contact web sites users established various types of sexual contacts, ranging from strictly internet-based ones to those connected to the offline world. Even though online interactions were sexually-liberated and allowed the realization of their personal sexual fantasies, the contacts were not easily transferred offline. Some users, specifically those who looked only for offline sex partners, had to develop several strategies to keep their behavior offline sexually disinhibited. This suggests that sexually related online interactions do not unequivocally facilitate offline sexual encounters. To make offline contact possible, users strictly predefined the context of offline sexual encounters, i.e. when and how offline sexual encounters would occur. This, to some extent, contrasts to the concept of sexually-liberated interaction online.

However, the study recognized a group of users who searched for sexual contacts, both online and offline, seeming to easily cross the boundaries between sex-oriented contact websites and everyday life. They treated the internet as a space for fantasizing and experimenting with sex in general, as well as for sex dating. Their online interaction represented a play that preceded offline sexual encounters. The process of offline sexual

encounters was accelerated and depended less on negotiating how the meeting would take place.

Finally, Study **I** revealed that sex-oriented contact websites were also exclusively used for establishing only virtual sexual contacts without the intention of offline realization. This included activities such as chatting about sex, sharing sexual experiences and fantasies, or exchanging pictures, in some cases followed by masturbation. Participants who focused only on sexual interaction online emphasized the role of disclosing sexual content, i.e. talking about sex openly and without inhibition. However, the participants mentioned that a contacted person remained an “unreal” person, even though they had revealed their internal sexual desires. This study indicates that for some users the online sharing of sex related intimate information, did not on its own necessarily contribute to the establishment of a trusting relationship bond, a bond which could help in the progression towards offline encounters. To sum up, the interconnection between sex-oriented contact websites and offline sexual behaviors was not straightforward. Specifically, not all online interactions with disclosed intimate details and desires are transferred into offline sexual encounters.

Study **II** and Study **VI** also documented that the link between sexually related online activities and offline sexual behaviors was not unequivocal. Study **II** examined adolescents’ internet use for sexual purposes, which was defined through accessing sexual information, talking about sex, discussing sexual experiences or sending/receiving erotic pictures online, and having sex on the internet. Using T-tests to analyze data from the ELSPAC research, it has been shown that sexually inexperienced 17-year-olds were less likely to compensate for their lack of sexual experiences by using the Internet or access sex-related information (e.g. guidelines) than sexually experienced peers. Additionally, this finding seems to be partly confirmed in Study **III** based on the longitudinal data from the ELSPAC project where prior

offline sexual experiences (measured at an age of 15 years) was found to predict interaction-based sexually related online activities at age 17.

Nevertheless, it was revealed that individuals who had reported experience both with kissing and petting did not differ in using the Internet for sexual purposes (Study II). Comparing the other two groups, the same relationship was found also in those who had experience with oral sex and sexual intercourse. The only significant difference was identified between adolescents who had already experienced kissing or petting, and those who had had oral sex or sexual intercourse. This indicates that the relationship between the gradual extension of sexual experience offline and the gradual extension of using the Internet for sexual purposes is rather weak. However, the findings may question the adolescents' perception of differences between offline sexual experiences: whether adolescents perceive any difference between kissing and petting, and similarly between oral sex and vaginal intercourse.

When it comes to exposure to sexual material online, a greater disconnection between on and offline sexual activities seems to be apparent. Study IV has shown that the adolescents were involuntarily exposed to sexual material with no respect to their low age and the fact that they were not interested in sexual issues at all.

To sum up, the link between sexually related online activities and offline sexual behaviors takes various forms ranging from the disconnection of some online activities and offline sexual behaviors (Study I, VI), to their, albeit not straightforward, interconnection (Study I, II).

Characteristics of young users who have experiences with sexually related online activities

In the first part of the findings, I documented the variability of the link between sexually related online activities and offline sexual behavior. Considering the type of sexually related

online activities, it seems to be apparent that interaction-based sexually related online activities are more likely to be positively related to offline sexual behaviors as no evidence on compensating a lack of sexual experience online was observed (Study **II**, **III**). On the contrary, exposure to online sexual material can occur even though a recipient is not developmentally prepared for sexual activities (Study **VI**). The following part will ask the question of who has experience with sexually related online activities, particularly who engages in interaction-based activities and who is prone to be exposed to online sexual material.

Using the longitudinal data from the ELSPAC project, Study **III** focused on predicting interaction-based sexually related online activities at age 17 (i.e. talking about sex, discussing sexual experiences or sending/receiving erotic pictures online, and having sex on the internet). In understanding what predicted this phenomenon, the attention was also focused on examining predictors of offline sexual behaviors at the same age. As the quality of peer attachment predicts later sexual onset (Connolly & Goldberg, 1999; Crockett et al. 1996), the specific aim of Study **III** was to analyze to what extent the quality of peer attachment predicted interaction-based sexually related online activities, while considering gender, pubertal status, as well as previous offline sexual activities. The findings from the hierarchical, binary logistic regression analysis revealed that in the first step of the analysis, where trust, alienation, and ambivalence attachment to peers were included, trust and alienation significantly predicted interaction-based sexually related online activities. Entering puberty as well as offline sexual behavior at age 15 on the second one, alienation, attachment, puberty, and prior offline sexual experiences were significant. For comparison, the same analytical approach and predictors was used for predicting offline sexual behavior at age 17. In the first step, only trust and attachment was significant, while in the second one this effect

disappeared and only prior offline sexual predicted later offline sexual behavior. It is worth noting that Study **III** found no gender differences in on- and offline activities.

Although a low number of respondents in the compared categories prevented multinominal logistic regression analysis for a mutual comparison, the present findings indicate that the internet does modify the context for acquiring sexual experiences during adolescence. Specifically, the internet may not be necessarily used to compensate for a lack of sexual behavior, but it helps adolescents with poor peer relationships overcome barriers and find someone with who they may sexually interact.

Study **IV** focused on the factors of exposure to online sexual material in early adolescence (11-15 years). As the internet provides nearly unlimited access to sexual material, the present study problematized the issue of the variability of exposure experience in terms of its extent. The extent was conceptualized through the frequency of exposure, its place and type of online applications. The exposure experience could range from frequent, through sporadic, to never, while exposure to sexual material both off and online simultaneously may represent greater exposure than when exposure occurred in only one forum. Using various online applications while browsing the internet could result in multiple incidences of exposure to sexual material. Study **IV** aimed to test the factors of frequency of exposure to sexual material, place of exposure to sexual material, and type of online exposure to sexual material.

In comparison to Study **III**, Study **IV** tested different predictors. Since exposure to sexual material at young age may represent premature sexual activity in today's digital age which is often linked with psychosocial risks (Bearman & Brückner, 2001; Bellis, Hughes, Calafat et al., 2008; Kuortti & Kosunen, 2009; Orr, Beiter, & Ingersoll, 1991) or represent intentional or unintentional exposure, factors ranging from patterns of internet use to psychological risks (frequency of internet use, excessive internet use, sensation seeking, and emotional difficulties) were considered.

Using multinominal logistic regression analyses, Study **IV** provided evidence on differences in the factors for frequency, place, and type of exposure to sexual material. The findings showed that greater exposure was linked to a larger number of risk-related factors. This trend was confirmed when frequent exposure was compared with sporadic exposure, and when no exposure was compared with exposure in both off- and online environments. However this was not the case when exposure in both off- and online environments was compared to exposure occurring only offline or only online. Detailed analyses of online exposure on different applications also revealed that exposure on sexually-focused websites, i.e. adult/X-rated or peer to peer file-sharing websites was also predicted by an increased number of risk-related predictors.

More specifically, sporadic exposure was linked to age and excessive internet use, while frequent exposure was found to be predicted by age, gender, sensation seeking, and excessive internet use. Almost analogous differences were found between exposure only offline, only online, and in both environments; age and excessive internet use predicted exposure which occurred only online, while age, excessive internet use, gender, emotional problems, and sensation seeking predicted exposure in both environments. However, no differences were found when comparing only online exposure with exposure in both environments. In terms of exposure on sexually-focused websites, i.e. adult/X-rated or peer to peer file-sharing websites, it was predicted by gender, emotional problems, and sensation seeking; no factor related to internet use was significant.

The findings of Study **IV** suggest that the individual's age was an important factor of exposure to a lesser extent (sporadic exposure and exposure only in one environment); it seems to be developmentally appropriate that exposure to sexual material onsets as age advances. Furthermore, the findings also indicate that adolescents who are high on excessive

internet use are more vulnerable to lesser exposure to sexual material while those with risk-related characteristics are more likely to experience greater exposure in general.

Particularities of sexually related online activities in the Czech Republic

As suggested in the introduction, exposure to online sexual materials seems to be highly prevalent among (young) Czech internet users. Study V examined individual-level factors of exposure to sexual materials including patterns of internet use and psychological risks/difficulties. The following Study V developed this research by focusing on country-level factors that may affect internet use as well as attitudes toward sexual materials. Specifically, broadband internet penetration (using data from EUROSTAT), religiosity (using data from the European Value Study project), and a progressive gender role attitude towards seeing sexual material online were considered in the multilevel analysis which was conducted on 20 European countries (including the Czech Republic) that were part of the EU Kids Online II survey. Progressive gender role attitude towards seeing sexual material online was measured with an extent of gender differences in exposure within a country.

The findings revealed that young Czech internet users had the highest exposure to online sexual material (33,8%). Furthermore, country-level factors such as broadband and religiosity did not explain the country's difference in exposure to online sexual material. However, it has been found that in countries with greater average exposure to online sexual material, gender mattered moderately less than in countries with lower average exposure to online sexual material. The findings suggest that the highest exposure to online sexual material in the Czech Republic can be explained by the low prevalence of gender differences in exposure.

Furthermore, it is worth noting that there are various forms of exposure which Czech young users experience. For instance, Study IV on Czech adolescents has shown that

approximately one half of those who had seen sexual material were sporadically exposed (N=113), while the second half of those who had seen sexual material were frequently exposed (N=107). Similarly, approximately the first half of those who had seen sexual material reported exposure that occurred accidentally (images that pop up accidentally; N=28) or on social networking sites (N=20), while the second half had seen sexual images on adult/X-rated or peer to peer file-sharing websites (N=43).

In terms of forms of exposure to online sexual material, for Czech adolescents it seems to be peculiar that some of their experiences with exposure to online sexual material had an unintentional character (Study VI). Specifically, qualitative research-based interviews with adolescents who had seen sexual materials online revealed that besides encountering unrequested sexual materials while browsing online or seeking information, adolescents were confronted with sexually explicit images when interacting online, i.e. establishing intimate or romantic relationships. For instance, an adolescent girl was instructed to click on a link posted in a chat room for 15 year-olds and younger. After clicking on this link, she saw someone's male genitalia broadcasting with a web camera. This example suggests that exposure to online sexually explicit material may occur even in a context where an adolescent is expected to interact in a protected online environment.

To sum up, Studies IV - VI indicate that Czech adolescents experience various forms of exposure to online sexual materials that may range from exposure to a lesser extent to exposure to a great extent as well as from intentional to unintentional exposure. Greater attention to the forms of exposure might provide a deeper understanding of why Czech adolescents report an increased prevalence of exposure in Europe.

Discussion

This thesis problematizes the issue of internet sexuality and its relation to offline sexuality. Table 3 provides a brief summary of the findings of Studies (I-VI). These are presented on a continuum which ranges from the internet as a mediator of content and interaction to individuals with their needs and developmental tasks. Specifically, the left column accentuates the role of the internet and its effect on the form of sexually related online activity and who had experience with sexually related online activities. On the other hand, the right column emphasizes the individual and their needs and developmental tasks for which they engage in sexually related activities.

Table 3. Summary of findings.

Internet as a mediator of content and interaction	Individual with needs and developmental tasks
Content derived from interaction-based sexually related online activities was not easily transferred offline	Sexually experienced adolescents were more likely to use the internet for sexual purposes than sexually inexperienced peers
Adolescents who denied attachment to peers were more likely to engage in interaction-based sexually related online activities	Engaging in Interaction-based sexually related online activities seemed to be predicted by prior offline sexual behavior
Small extent of exposure to online sexual material was linked to excessive internet use	Small extent of exposure to online sexual material was linked to higher age
Exposure to online sexual material can be unintentional	Great extent of exposure to online sexual material was linked to higher age and male gender
Great extent of exposure to online sexual material was linked to a larger number of risk related factors	
Low prevalence of gender differences in exposure was linked to increased proportion of exposure within the Czech Republic	

The findings indicate that the internet is a unique venue for sexually related activities which supports sexually liberated interaction and availability of sexual material. Specifically, a lot of private and intimate content (intrapsychic scripts) becomes publicly private on the internet (Lange, 2007). On one hand, these appear to work hand in hand with an internet user's

psychosexual development. On the other hand, they may easily clash with a user's unpreparedness to face such publicly private content.

Sexually related online activities: the same or reversed from offline world?

Studies II, III documented that young users were active in using the internet for sexual purposes. It has been also shown that their online sexual experiences reflected their offline sexual experiences. Additionally, when users were induced to witness sexual content on the internet without being interested in sexual issues at all, they considered it as an aggressive act. It seems that despite the large continuum of the relationship between the worlds of on- and offline adolescents (Subrahmanyam et al., 2006; Subrahmanyam & Šmahel, 2011), in terms of adolescent sexuality these worlds are similar rather than reversed, at least among older adolescents. The explanation could be that the internet represents an extension of their offline worlds. Those who have developed emotional and cognitive capacity establish and maintain erotic contacts offline (see Macek, 2003) and can do so online as well. Additionally, following Connolly and Goldberg's (1999) concept of development of romantic relationships, interaction-based sexually related online activities seem to be suitable for those adolescents who have shifted their focus on peer groups to intimate dyads.

However, at the level of relating to others, adolescents' online worlds may even be reversed from their offline worlds (Subrahmanyam et al., 2006; Subrahmanyam & Šmahel, 2011). It has been shown that adolescents with refusing attachment to peers were inclined to use the internet for sexual purposes at age 17. According to Hazan and Shaver (1987), refusing attachment can also be understood as a maladaptive reaction to traumatic experience concerning establishing relationships with significant others. This implies that the need to relate to others may be rather suppressed. Since the internet accelerates the formation of

relationships (Bargh & McKenna, 2004), it might help these adolescents overcome barriers that prevent them from relating to others, and thus later establish intimate and erotic contacts.

Although at the level of sexual activities both online and offline worlds seem to be positively interconnected, it remains unknown whether differences in peer attachment are connected with qualitatively different internet use for sexual purposes. Specifically, we may ask whether adolescents with poor attachment to peers are more likely to sexually interact with unknown people while youth with positive peer attachment tend to engage in sexually related online activities with users they know offline (e.g. with their offline romantic partners).

The co-constructing model and a blurred line between being an actor and passive recipient on the internet

Studies (II-VI) suggest that acquiring sexual experiences on the internet among adolescents takes place on the continuum ranging from creative – co-constructive internet use (see Subrahmanyam & Šmahel, 2011; Subrahmanyam et al., 2006) and being a passive recipient. Particularly, exposure to online sexual materials seems to be an example of this blurred line. On one side, the findings revealed that higher age and male gender predicted exposure to online sexual materials which has been previously correlated with intentional exposure (Peter & Valkenburg, 2006; Ybarra & Mitchell, 2005). This indicates that accessing online sexual material in adolescence might be an inseparable part of maturing. On the other hand, exposure to online sexual materials was predicted by excessive internet use. At the same time this factor was found not to predict exposure to sexual material on adult/X-rated or peer to peer file-sharing websites. This may imply that such exposure to sexual material at a young age may be unintentional. In other words, internet users become passive recipients (victims) of intrusive online sexual material or sexually disinhibited behavior of other internet users (e.g. someone else from the internet sends them a link to a website with sexual content).

Similarly, the finding that a great extent of exposure to online sexual material was linked to a larger number of risk related factors may also indicate the existence of a blurred line between creative – co-constructive internet use and the passive – recipient one. Specifically, vulnerable adolescents, scoring high on risk related factors, may actively access sexual material online due to their developmental needs. But it is also possible that they are rather recipients of unrequested online sexual material. Future longitudinal research may clarify whether the internet is just a “screen” for them to manifest on, or rather the origin and source of such difficulties.

The co-construction model supposes that internet users are creative – co-constructive regarding online content (Subrahmanyam et al., 2008; Subrahmanyam & Šmahel, 2011). This concept seems to be valid until users interact, participate in creation of platforms for exchanging messages. Nevertheless, prior research including Studies (IV-VI) show that besides providing a forum for interaction, the internet still has many similarities to traditional media (e.g. TV). In comparison to such traditional media, online content is less regulated as it (immediately) mediates other users’ sexually disinhibited behavior. This brings new challenges for society regarding how to safely navigate (young) internet users in the landscape of online sexuality and how to allow them to use the internet for sexual purposes with respect to their psychosexual needs and developmental tasks.

Exposure to online sexual material in the Czech context: Are there cultural specifics?

In Figure 1 (page 21), I presented that cultural background may affect patterns of internet use and fulfillment of one’s needs and developmental tasks. Considering (1) the increased prevalence of exposure found in Nordic countries and some Eastern European countries and its lower incidence in Southern Europe and predominantly Catholic countries (Livingstone et al., 2011) and at the same time the fact that (2) Nordic countries as well as the Czech

Republic are often considered to have relatively accepting or liberal attitudes towards sexuality and adolescent as well as female sexuality when compared to most other Western cultures (Kontula, 1991; Traeen, 1993; Weiss & Zvěřina, 2001), it was theorized that some gender role attitudes toward sexuality may explain the observed country differences in exposure. Specifically, it was hypothesized that lower gender differences in exposure to online sexual material might have higher rates of exposure to online sexual material than countries with greater gender differences. The cross-national comparative study on exposure to online sexual material at a young age revealed that countries with lower gender differences in exposure were more likely to report higher rates of exposure (Study V). However, when placing this result in perspective with the findings from Studies (IV and VI), it seems that some caution in terms of employing the cultural interpretation is needed.

This finding can be in part interpreted by stipulating that progressed gender attitude towards sexuality may be behind higher rates of exposure to online sexual material as sexual material consumption is not predominantly a boys' activity. However, there are two issues that make me question this interpretation. First, Weiss and Zvěřina (2001) documented a continuous deliberation trend in the perception of offline pornography. Second, previous research work has shown that gender differences appear in the context of wanted - intentional exposure to online sexual material while these differences disappear when predicting unintentional exposure to online sexual material among young internet users (Mitchell et al., 2003; Wolak et al. 2007). Then the finding of the present study might indicate that greater average exposure in some countries could be the outcome of unintentional exposure rather than the result of progressed gender role attitudes, i.e. the cultural specifics of the studied country.

Thus, Studies (IV-VI) indicate the need to pay greater attention to forms of exposure to understand why exposure prevalence is so high among Czech adolescents in comparison to other European countries.

A few notes on implications

The present thesis has documented how the internet expands the context for additional exposure to sexual material, including exposure for acquiring sexual experiences. Following the concept of sexual socialization, often described as the process of collecting knowledge and attitudes related to sexuality (Ward, 2003), there is evidence that sexual socialization on the internet among adolescents takes place when using the internet for fulfilling needs and developmental tasks. Nevertheless, at the same time it is apparent that adolescents receive sexual messages without being interested in them. This means they are exposed to complex influences on the internet which may affect adolescents' sexual behaviors and their attitudes, including a relation to health (see Brown & L'Engle, 2009; Peter & Valkenburg, 2010a, b). Unfortunately, the specifics of this are currently unknown.

Little is known about who is predisposed to being more easily influenced by online sexual materials to adopt altered sexual attitudes. Additionally, research that examined how Czech youth interpret and understand online sexual material, sexually related online activities and their outcomes are rather fragment when comparing them to the current relatively deep knowledge about Czech adolescents' understanding of offline sexual behaviors (see Katrňák et al., 2010; Rabušic & Kepáková, 1999). A sketchy picture is provided by Study VI, which explored adolescents' perception of online sexual material and sources of their negative reactions to seen content on the internet. The most relevant finding seems to be that Czech adolescents keep the knowledge, attitudes and values about sexuality that they have acquired online isolated. Specifically, some of them discussed their disturbing experiences related to

online exposure with their offline friends but they avoided discussing viewed online sexual material with their parents because of their fear that their internet access would be restricted.

Generally, I want to point out that we still know little about the experiences of Czech adolescents' with online sexuality and thorough studies are needed to provide a background for what should be discussed at the parent-child or teacher-pupil levels if sexual education becomes a part of the Czech national curriculum again. Prior research provides several arguments for school-based sex education. First, Czech society is characterized by relatively dominant generational differences in terms of internet use (Lupač & Sládek, 2008). For unknown reasons, Czech youth seem to lack proper parental control in this area in comparison to other European youths, as Czech parents were found to be relatively passive in terms of adopting mediation strategies for internet use and internet safety (Kalmus & Roosalu, 2012). This generational gap may make it difficult for parents to understand what opportunities and risks the internet brings to their children. Furthermore, parent-child discussions about sexual issues (including sexually related online activities) require a safe and trustful family environment. However, it has been found that youth who talked about sex with an unknown person on the internet or exposure to online sexual materials were also more likely to report high degrees of parental conflicts (Wolak et al., 2007; Wolak et al., 2010). Taking into account the fact that, with opportunities the internet provides for sexual socialization in adolescence, it is difficult to monitor the sexual content Czech adolescents view on the internet, it seems wise to provide them space for discussing their experiences, and thus learn about their online sexuality. With that said, developing school-based internet education might be a challenge.

Last but not least, there are some findings which deserve to be communicated further and may be a part of adolescent school/home-based sex education:

- The internet supports sexually disinhibited behaviors (Study **I**).
- Adolescents use the internet for sexual purposes in line with their psychosexual development (Study **II**).
- Adolescents may unintentionally encounter sexual material while using the internet (Study **V, VI**).
- Adolescents seem to be more at risk of becoming a victim of unwanted online sexual solicitation (receiving unwanted requests to talk about sex or to do something sexual) than adults even though they are less likely to engage in sexual risks online than adults (Baumgartner, Valkenburg, & Peter, 2010).
- On the internet there are some people who might employ strategies to force young users to sexually interact online by using threats of transferring an online contact offline, by contacting their parents or stating they know their place of residence etc. For some adolescents these threats can be so strong that they comply with the perpetrator's requests (Study **VI**).
- Frequent exposure to sexually explicit online materials may affect offline sexual behaviors as well as sexual attitudes (e.g. Brown & L'Engle, 2009; Peter & Valkenburg, 2010a, b).
- Vulnerable youth are more likely see online sexual material to a great extent (Study **IV**).

Conclusion

The purpose of this thesis was to shed light on online sexuality. It aimed to examine the link between sexually related online activities and offline sexual behaviors, predictors of sexually related online activities, and finally the particularities of sexually related online activities in the Czech Republic. Not all online interactions with disclosed intimate details and desires are transferred into offline sexual encounters. With respect to the adolescent population, it has been documented that they engaged in interaction-based sexually related online activities in line with their psychosexual development and that their online sexual experiences reflected their offline sexual experiences. Furthermore, it has been shown that even adolescents with alienation attachment to peers were inclined to use the internet for sexual purposes. The focus on predictors of exposure to online sexual material in adolescence revealed not all exposure occurred in the standard stage of maturing and could be, to some extent, unintentional. Finally, exposure to online sexual material among Czech adolescents was found to be linked to smaller gender differences in seeing sexual materials on the internet in comparison to other European countries. To sum up, it seems the internet clearly expands opportunities to acquire sexually related experiences or sexual information and thus modify the context of adolescent sexual socialization.

References

- Arnett, J.J. (2002). *Readings on Adolescence and Emerging Adulthood*. New Jersey: Pearson.
- 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
- Bargh, J.A., & McKenna, K.Y.A. (2004). The Internet and social life. *Annual Review of Psychology*, 55, 573-590. doi: 10.1146/annurev.psych.55.090902.141922
- Bleakley, A., Hennessy, M., Fishbein, M., & Jordan, A. (2008). It works both ways: The relationship between exposure to sexual content in the media and adolescent sexual behavior. *Media Psychology*, 11, 443-461. doi: 10.1080/15213260802491986
- Bearman, P., & Brückner, H. (2001). Promising the future: virginity pledges and the transition to first intercourse. *American Journal of Sociology*, 106, 859–912. doi: 10.1086/320295
- Bellis, M.A., Hughes, K., Calafat, A., et al. (2008). Sexual uses of alcohol and drugs and the associated health risks: A cross sectional study of young people in nine European cities. *BMC Public Health*, 8(155). doi:10.1186/1471-2458-8-155
- Blumler, J.G., & Katz, E. (1974). *The uses of mass communications: Current perspectives on gratifications research*. Beverly Hills, CA: Sage.
- Brown, D. J., & L'Engle, L. K. (2009). X-rated: Sexual attitudes and behaviors associated with U.S. early adolescents' exposure to sexually explicit media. *Communication Research*, 36, 129-151. doi: 10.1177/0093650208326465
- Brown, J.D., L'Engle, K.L., Pardun, C.J., Guo, G., Kenneavy, K., & Jackson, C. (2006). Sexy media matter: Exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior. *Pediatrics*, 117, 1018-1027. doi: 10.1542/peds.2005-1406

- Connolly, J., & Goldberg, A. (1999). Romantic relationships in adolescence: The role of friends and peers in their emergence and development. In W. Furman, B.B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 266-280). New York: Cambridge University Press.
- Cooper, A. (1998). Sexuality and the Internet: Surfing its way into the new Millennium. *CyberPsychology & Behavior*, 1(2), 187-194. doi:10.1089/cpb.1998.1.187
- Cooper, A., McLoughlin, I. P., & Campbell, K. M. (2000). Sexuality in cyberspace: Update for the 21st century. *CyberPsychology and Behavior*, 3(4), 521–536. doi:10.1089/109493100420142
- Cooper, A., Morahan-Martin, J., Mathy, R.M., & Maheu, M. (2002). Toward an Increased Understanding of User Demographics in Online Sexual Activities. *Journal of Sex & Marital Therapy*, 28(2), 105-129. doi: 10.1080/00926230252851861
- Cooper, A., Scherer, C. R., Boies, S. C., & Gordon, B. L. (1999). Sexuality on the internet: From sexual exploration to pathological expression. *Professional Psychology: Research and Practice*, 30(2), 154–164. doi: 10.1037/0735-7028.30.2.154
- Crockett, L.J., Bingham, C.R., Chopak, J.S., & Vicary, J.R. (1996). Timing of first sexual intercourse: The role of social control, social learning, and problem behavior. *Journal of Youth and Adolescence*, 25, 89–111. doi: 10.1007/BF01537382
- Daneback, K. (2006). *Love and sexuality on the Internet*. Unpublished doctoral thesis, Department of Social Work. Goteborg: Goteborg University.
- Daneback, K., Cooper, A., & Månsson, S.-A. (2005). An internet study of cybersex participants. *Archives of Sexual Behavior*, 34(3), 321–328. doi: 10.1007/s10508-005-3120-z

- Daneback, K., Mansson, S.-A., & Ross, M.W. (2011). Online sex shops: Purchasing sexual merchandise on the internet. *International Journal of Sexual Health*, 23(2). doi: 10.1080/19317611.2011.565112
- Daneback, K., Månsson, S.-A., Ross, M.W., Markham, C. (2011). The internet as a source of information about sexuality. *Sex Education*. doi: 10.1080/14681811.2011.627739
- Davis, M., Hart, G., Bolding, G., Sherr, L., & Elford, J. (2006). Sex and the Internet: Gay men, risk reduction and serostatus. *Culture, Health & Sexuality*, 8(2), 161–174. doi: 10.1080/13691050500526126
- Diamond, M., & Uchiyama, A. (1999). Pornography, rape, and sex crimes in Japan. *International Journal of Law and Psychiatry*, 22(1), 1–22. doi: 10.1016/S0160-2527(98)00035-1
- Divínová, R. (2005). *Cybersex: forma internetové komunikace* [Cybersex: the form of internet communication]. Praha: Triton
- Döring, N. (2000). Feminist views of cybersex: Victimization, liberation, and empowerment. *Cyberpsychology & Behavior*, 3(5), 863–884. doi:10.1089/10949310050191845
- Freeman-Longo, R. E., & Blanchard, G. T. (1998). *Sexual abuse in America: Epidemic of the 21st century*. Brandon, VT: Safer Society Press.
- Gagnon, J., & Simon, W. (1973/2005). *Sexual Conduct: The Social Sources of Human Sexuality* (2nd ed.). Chicago: Aldine Transaction.
- Graya, N.J., Klein, J.D., Noyce, P.R., Sesselberg, T.S., & Cantrill, J.A. (2005). Health information-seeking behaviour in adolescence: the place of the internet. *Social Science & Medicine*, 60, 1467–1478. doi:10.1016/j.socscimed.2004.08.010
- Greenfield, P. (1984). *Mind and media: The effects of television, video games, and computers*. Cambridge, MA: Harvard University Press.

- Hald, G. M., & Malamuth, N. M. (2008). Self-perceived effects of pornography consumption. *Archives of Sexual Behavior*, 37(4), 614–625. doi: 10.1007/s10508-007-9212-1
- Hardy, S. (2008). The reality of pornography. *Sexualities*, 11(1–2), 60–64.
- Hasebrink, U., Livingstone, S., Haddon, L., & Ólafsson, K. (2009). *Comparing children's online opportunities and risks across Europe: Cross-national comparisons for EU Kids Online*. LSE, London: EU Kids Online
- Havinghurst, R.J. (1948). *Developmental tasks and education*. New York: McKay.
- Hazan, C., & Shaver, P. (1987). Romantic Love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511-524. doi: 10.1037/0022-3514.52.3.511
- Internet World Stats (2011). *Internet World Stats: Usage and population statistics*. Available at <http://www.internetworldstats.com/europa.htm>
- Kalmus, V., Pruulmann-Vengerfeldt, P., Runnel, P., & Siibak, A. (2009). Mapping the terrain of “Generation C”: Places and practices of online content creation among Estonian teenagers. *Journal of Computer-Mediated Communication*, 14(4), 1257-1282. doi: 10.1111/j.1083-6101.2009.01489.x
- Kalmus, V., & Roosalu, T. (2012). Institutional filters on children's internet use: An additional explanation of cross-national differences in parental mediation. M. Walrave, W. Heirman, S. Mels, C. Timmerman, & H. Vandebosch (Eds.), *e-Youth: Balancing between opportunities and risks* (pp. 235-250). Peter Lang Publishers House.
- Kalmus, V., & Vihalemm, T. (2008). Patterns of continuity and disruption: The specificity of young people's mental structures in three transitional societies. *Young*, 16, 251-278. doi: 10.1177/110330880801600302
- Katrňák, T., Lechnerová, Z., Pakosta, P., & Fučík, P. (2010). *Na prahu dospělosti: Partnerství, sex a životní představy mladých v současné české společnosti* [At the Edge

- of Adulthood: Relationships, Sex and Life Notions of Youth in Contemporary Czech Society]. Brno: Masarykova univerzita, Dokořán.
- King, S.A. (1999). Internet Gambling and Pornography: Illustrative Examples of the Psychological Consequences of Communication Anarchy. *Cyberpsychology & Behavior*, 2(3), 175-193. doi:10.1089/109493199316311
- Kontula, O. (1991). *Cultural terms of sexual initiation* (In Finnish with a summary in English). Thesis, University of Helsinki, Helsinki, Finland.
- Kuortti, M., & Kosunen, E. (2009). Risk-taking behavior is more frequent in teenage girls with multiple sexual partners. *Scandinavian Journal of Primary Health Care*, 27, 47-52. doi:10.1080/02813430802691933
- Leiblum, S., & Döring, N. (2002). Internet sexuality: Known risks and fresh chances for women. In A. Cooper (Ed.), *Sex and the Internet: A guidebook for clinicians* (pp. 19–46). Philadelphia, PA: Brunner-Routledge.
- L'Engle, K. L., Brown, J. D., & Kenneavy, K. (2006). The mass media are an important context for adolescents' sexual behaviour. *Journal of Adolescent Health*, 38, 186-192. doi:10.1016/j.jadohealth.2005.03.020
- Lacinová, L., Michalčáková, R., Ševčíková, A., & Konečný, Š. (2011). Love and sex. In S. Ježek, L. Lacinová, & P. Macek (Eds.), *Adolescent psychosocial development in Brno: ELSPAC study 2005-2011* (33 – 42). Brno: Masaryk University.
- Lange, P. G. (2007). Publicly private and privately public: Social networking on YouTube. *Journal of Computer-Mediated Communication*, 13(1), 261-280. doi: 10.1111/j.1083-6101.2007.00400.x
- Lišková, K. (2009). *Hodné holky se dívají jinak. Feminismus a pornografie*. Praha: Sociologické nakladatelství.

- Livingstone, S., & Haddon, L. (2009). *Kids online: Opportunities and risks for children*. Bristol: The Policy Press.
- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2010). *Risks and safety on the internet: The perspective of European children*. Full findings. LSE, London: EU Kids Online.
- Lobe, B., Livingstone, S., Ólafsson, K., & Vodeb, H. (2011). *Cross-national comparison of risks and safety on the internet: Initial analysis from the EU Kids Online survey of European children*. LSE, London: EU Kids Online.
- Macek, P. (2003). *Adolescence: psychologické a sociální charakteristiky dospívajících*. [Adolescence: psychological and social characteristics of adolescents]. Praha: Portál.
- Mareš, P. (Ed.) (2004). *Society, reproduction, and contemporary challenges*. Brno: Barrister & Principal.
- Markham, C.M., Lormand, D., Gloppen, K.M. et al. (2010). Connectedness as a predictor of sexual and reproductive health outcomes for youth. *Journal of Adolescent Health, 46*, S23-S41. doi:10.1016/j.jadohealth.2009.11.214
- McKenna, K. Y. A., & Bargh, J. A. (1998). Coming out in the age of the internet: Identity “demarginalization” through virtual group participation. *Journal of Personality and Social Psychology, 75*(3), 681–694. doi: 10.1037/0022-3514.75.3.681
- Mesch, G.S. (2009). Social bonds and Internet pornographic exposure among adolescents. *Journal of Adolescence, 32*, 601-618. doi: doi:10.1016/j.adolescence.2008.06.004
- Mitchell, K.J., Finkelhor, D., & Wolak, J. (2003). The exposure of youth to unwanted sexual materials on the internet: a national survey of risk, impact and prevention. *Youth and Society, 34*, 330-358. doi: 10.1177/0044118X02250123
- Orr, D.P., Beiter, M., & Ingersoll, G. (1991). Premature sexual activity as an indicator of psychosocial risk. *Pediatrics, 87*, 141-147.

- Peter, J., & Valkenburg, P. M. (2006). Adolescents' exposure to sexually explicit material on the Internet. *Communication Research*, 33, 178-204. doi:10.1177/0093650205285369
- Peter, J., & Valkenburg, P. M. (2009a): Adolescents' Exposure to Sexually Explicit Internet Material and Sexual Satisfaction: A Longitudinal Study. *Human Communication Research*, 35, 171-194. doi: 10.1111/j.1468-2958.2009.01343.x
- Peter, J., & Valkenburg, P. (2009b). Adolescents' Exposure to Sexually Explicit Internet Material and Notions of Women as Sex Objects: Assessing Causality and Underlying Processes. *Journal of Communication*, 59, 407-433. doi: 10.1111/j.1460-2466.2009.01422.x
- Peter, J., & Valkenburg, P. (2010a). Adolescents' use of sexually explicit internet material and sexual uncertainty: The role of involvement and gender. *Communication Monographs*, 77, 357-375. Doi: 10.1080/03637751.2010.498791
- Peter, J., & Valkenburg, P. (2010b). Processes Underlying the Effects of Adolescents' Use of Sexually Explicit Internet Material: The Role of Perceived Realism. *Communication Research*, 37, 375-399. doi: 10.1177/0093650210362464
- Peter, J., & Valkenburg, P. M. (2011). The use of sexually explicit internet material and its antecedents: A longitudinal comparison of adolescents and adults. *Archives of Sexual Behavior*, 40, 1015-1025. doi: 10.1007/s10508-010-9644-x
- Rabušic, L., & Kepáková, K. (1999). Sexuální chování adolescentů a riziko HIV [The Sexual Behaviour of Adolescents and HIV Risk]. *Sociologický časopis*, 35, 161-179.
- Ross, M.W. (2005). Typing, doing, and being: Sexuality and the Internet. *The Journal of Sex Research*, 42, 342-352. doi: 10.1080/00224490509552290
- Ross, M.W., Rosser, B.R.S., & Stanon, J. (2004). Beliefs about cybersex and Internet mediated sex of Latino men who have Internet sex with men: relationships with sexual

- practices in cybersex and in real life. *AIDS Care*, 16, 1002-1011. doi: 10.1080/09540120412331292444
- Ševčíková, A., & Šmahel, D. (2008). Czech Adolescents on the Internet: Creating Identity and Risk Behavior. In M. Barbovski & M. Diaconescu (Eds.), *Teenagers` Action and Interaction Online in Central and Eastern Europe* (pp. 41-54). Cluj-Napoca : Cluj University Press.
- Siibak, A. (2007). Reflections of RL in The Virtual World. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 1(1). Available at <http://cyberpsychology.eu/view.php?cisloclanku=2007072301&article=1>
- Siibak, A. (2010). Constructing masculinity on a social networking site: The case-study of visual self-presentations of young men on the profile images of SNS Rate. *Young*, 18, 403-425. doi: 10.1177/110330881001800403
- Širůček, J. (2002). Evropská longitudinální studie těhotenství a dětství [European Longitudinal Study of Pregnancy and Childhood]. In V. Smékal & P. Macek (Eds.), *Utváření a vývoj osobnosti: Psychologické, sociální a pedagogické aspekty* [Personality establishment and development: Psychological, social and pedagogic Aspects] (29 – 36). Brno: Barrister & Principal.
- Šmahel, D. (2003). *Psychologie a internet: děti dospělými, dospělí dětmi*. Praha: Triton.
- Smahel, D., & Subrahmanyam, K. (2007). „Any girls want to chat press 911“: partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology & Behavior*, 10(3), 346-353. doi:10.1089/cpb.2006.9945
- Smékal, V., Lacinová, L., & Kukla L. (Eds.) (2004). *Dítě na prahu dospívání* [A child on the threshold of adolescence]. Brno: Barrister & Principal.

- Spears, R., & Lea, M. (1992). Social influence and the influence of the “social” in computer-mediated communication. In M. Lea (Ed.), *Context of computer-mediated communication* (pp. 30-65). Hemel Hempstead: Harvester Wheatsheaf.
- Subrahmanyam, K., Greenfield, P.M., & Tynes, B. (2004). Constructing sexuality and identity in an online teen chat room. *Applied developmental psychology*, 25, 651-666.
doi:10.1016/j.appdev.2004.09.007
- Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Connecting developmental constructions to the Internet: identity presentation and exploration in online teen chat rooms. *Developmental psychology*, 42, 395-406. doi: 10.1037/0012-1649.42.3.395
- Suler, J. R. (2004). The online disinhibition effect. *CyberPsychology and Behavior*, 7(3), 321–326. doi:10.1089/1094931041291295.
- Suzuki, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Journal of Applied Developmental Psychology*, 25(6), 685–698.
doi:10.1016/j.appdev.2004.09.002
- Tikkanen, R., & Ross, M.W. (2003). Technological tearoom trade: Characteristics of Swedish men visiting gay internet chat rooms. *AIDS Education and Prevention*, 15, 122-132.
doi: 10.1521/aeap.15.3.122.23833
- Traeen, B. (1993). *Norwegian adolescents' sexuality in the era of AIDS. Empirical studies on heterosexual behaviour*. Thesis. National Institute for Alcohol and Drug Research/University of Oslo, Oslo, Norway.
- Udry, R. (1988). Biological predispositions and social control in adolescent sexual behavior. *American Sociological Review*, 53, 709-722.
- Van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. M. E. (2008). Online communication, compulsive Internet use, and psychosocial well-being

- among adolescents: A longitudinal study. *Developmental Psychology*, 44, 655-665.
doi:10.1037/0012-1649.44.3.655
- Vybíral, Z., Smahel, D., & Divínová, R. (2004). Growing up in virtual reality – adolescents and the Internet. In P. Mareš (Ed.), *Society, reproduction, and contemporary challenges* (pp. 169-188). Brno: Barrister & Principal. Available at <http://www.terapie.cz/materials/czech-adolescents-internet.pdf>
- Ward, L.M. (2003). Understanding the role of entertainment media in the sexual socialization of American youth: A review of empirical research. *Developmental Review*, 23, 347-388. doi: 10.1016/S0273-2297(03)00013-3
- Waskul, D. D. (2002). The naked self: Being a body in televideo cybersex. *Symbolic Interaction*, 25(2), 199–227. doi: 10.1525/si.2002.25.2.199
- Weiss, P., & Zvěřina, J. (2001). *Sexuální chování v ČR – situace a trendy* [Sexual behavior in CZ – the situation and trends]. Praha: Portál.
- Whitty, M. T. (2008). Liberating or debilitating? An examination of romantic relationships, sexual relationships and friendships on the net. *Computers in Human Behavior*, 24(5), 1837–1850. doi:10.1016/j.chb.2008.02.009
- Wolak, J., Mitchell, K., & Finkelhor, D. (2006). Online victimization of youth: Five years later. *National Center for Missing & Exploited Children Bulletin 07-06-025* (Online). Retrieved December 14, 2011, from <http://www.unh.edu/ccrc/pdf/CV138.pdf>
- Wolak, J., Mitchell, K. J., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth internet users. *Pediatrics*, 119, 247-257. doi:10.1542/peds.2006-1891
- 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. L., & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: A national survey. *CyberPsychology & Behavior*, 8, 473-486.
doi:10.1089/cpb.2005.8.473

Papers

Study I

Sevcikova, A., & Daneback, K. (2011). Anyone who wants sex? Seeking sex partners on sex-oriented contact websites. *Sexual and Relationship Therapy*, 26, 170-181.

Abstract

While the role of the Internet in dating for sexual reasons has been recognized, the amount of research into partner-seeking activities on sex-oriented contact websites is still limited. This study explores the experiences, thoughts, and strategies related to partner seeking activities on sex-oriented contact websites. A qualitative approach is used to complement and expand upon the existing primarily quantitative literature in this field. An analysis of 17 interviews revealed that sex seekers established various types of sexual contacts, located both in the online and the offline worlds. Although online interactions began with the disclosure of sex-related details, not all sexual contact established online progressed into offline encounters. Those who had sex with a partner found on a sex-oriented contact website tended to outline the context in advance of the sexual encounter to help keep their behavior sexually disinhibited once offline. The theory of sexual scripts has been used to interpret the extent of sexually disinhibited behavior in online dating for sexual purposes.

Keywords

Internet; Sexuality; Online Dating; Theory of Sexual Scripts

Introduction

Searching for sexual partners online is an interactive activity where Internet users contact each other to have cybersex or offline sex (Couch & Liamputtong, 2008; Daneback, Cooper,

& Månsson, 2005; Daneback, Månsson, & Ross, 2007; Davis, Hart, Bolding, Sherr, & Elford, 2006; Doering, 2009). Several studies suggest a close link between cybersex and seeking offline sex. Cybersex may precede meeting sexual partners offline (Daneback et al., 2005; Daneback et al., 2007) acting as a practice ground or verification of sexual compatibility (Daneback et al., 2007; Tikkanen & Ross, 2003). There is also a connection between engaging in cybersex and having a higher number of offline sexual partners (Daneback et al., 2005).

From a gender perspective, men tend to look for partners online more often than women, for example visiting web contact sites and responding to sex ads (Cooper, Månsson, Daneback, Tikkanen, & Ross, 2003; Daneback & Månsson, 2009; Shaughnessy, Byers, & Walsh, 2010). However, male Internet users are not a homogenous group. Prior research has recognized a group of men who do not consider themselves homosexuals but seek sex with men on the Internet (Daneback et al., 2007; Tikkanen & Ross, 2003). It has been found that homosexuals and bisexuals are more likely than heterosexuals to meet contacts from sex orientated contact websites in the real world (Albright, 2008). Women are more likely than men to meet online sexual partners offline (Bolding, Davis, Hart, Sherr, & Elford, 2006; Daneback et al., 2007). It seems that contacting a possible sexual partner via the Internet may correspond to different underlying psychological themes for men and women, with heterosexual men potentially focused more on virtual sexual contacts.

The Internet provides various arenas or platforms for partner-seeking activities; these include chat rooms, instant messaging tools, community networks, contact websites, and role playing games such as Everquest and Second Life etc. (Daneback, 2006). While the setting is not focused on in most prior research (Bolding et al., 2006; Ross, Rosser, McCurdy, & Feldman, 2007), some studies have concentrated on particular online environments such as chat rooms (Tikkanen & Ross, 2003), or contact sites (Couch & Liamputtong, 2008, Davis et

al., 2006). In general, online dating sites are characterized by their filtering processes (Davis et al., 2006; Couch & Liamputtong, 2008; Ross et al., 2007; Whitty, 2008). These evoke a feeling of control over partner selection, while increasing the user's control over self-presentation (Ellison, Heino, & Gibbs, 2006; Davis et al., 2006; Ross et al., 2007; Whitty, 2008 etc.) which creates a unique environment for sexual partner seeking, differing slightly from that of chat rooms, and further removed from the more traditional methods used in offline settings. This study focuses on the use of online sex-oriented contact sites to establish sexual contacts.

Theoretical approach

In order to analyze the particularities of sex-oriented contact website use Gagnon and Simon's (2005) ideas on sexual scripts were used. These provided explanations as to when and how the sexual behavior was engaged in. The term "script" is used as a metaphor to explain how sexual conduct becomes possible. It implies that individuals act according to pre-established socio-culturally constructed scripts, and that these scripts are learned and rehearsed, and may change throughout one's life span. The script defines the appropriate settings, actors, behaviors, and other similar factors. If something is absent or inappropriate then no sexual event will occur.

Sexual scripts have three components: cultural, interpersonal, and intrapsychic (Gagnon & Simon, 2005). Cultural scenarios include the socio-cultural norms and values that influence an individual's sexual behavior. Interpersonal scripts are the individual's interpretations of these cultural scenarios. Intrapsychic scripts capture an individual's thoughts and reasoning about sexuality in relation to both cultural scenarios and their sexual behaviors; these may not always be easily manifested in the physical world. The sexual scripting approach emphasizes the fluidity of sexual scripts and their inter-relation, i.e. changes in cultural scenarios affect intrapsychic scripts and vice versa.

An individual's sexual behavior such as same-sex behavior, sexual techniques, and their responsibility for this are now publicly discussed in the media. However, sex and the contexts for sexual arousal are still mostly kept private, and may be surrounded by shame and guilt (Gagnon & Simon, 2005). This may make it difficult for some to manifest their intrapsychic scripts in the physical world. The Internet is a specific environment where anonymity can be preserved. It is thus able to fulfill a need for privacy when engaging in sex-related activities. Individuals feel comfortable bringing up sexual matters online because on the Internet there is no conflict with what they have previously learnt. Furthermore, it is easier to gain the acceptance of others on the Internet. The Internet can thus be seen as providing new places to engage in sexual activity. It should also be noted that for this reasoning to hold true individuals must perceive the Internet as anonymous. Online sexual interaction allows users to simultaneously keep and reveal secrets without experiencing any negative sanctions or consequences. This means that it is possible to engage in sexual activities that are guided by individuals' intrapsychic scripts. Thus, a sex-oriented contact website may represent a platform where users disclose their inner sexual thoughts and desires, while simultaneously looking for partners with whom to share sexual fantasies which would otherwise remain undisclosed (see Couch & Liamputtong, 2008; Ross, 2005; Tikkanen & Ross, 2003). Furthermore, these contact sites make it possible to engage in sexual discussions which would be difficult offline, such as asking a complete stranger if they would like to meet and have sex, sometimes in a rather detailed fashion. Although it is also possible to proposition strangers in offline public environments, establishing contacts online is more attractive for those who wish to stay anonymous, to engage in less traditional sexual activity, or who are distanced from any offline public sex environment (see Ross, 2005).

Purpose of the study

Based on prior findings that the anonymous online environment facilitated the sharing of sexual fantasies, this qualitative study aimed to examine whether the online environment of sex-oriented contact sites served to enhance offline sexual meetings. This environment is characterized by its filtering processes and personal control over self-presentation. The study of sex orientated contact websites focused on how contacts were established, the different kinds of contacts, and how offline sexual encounters were negotiated and transferred (or failed to be) from online interactions into offline encounters. A qualitative approach was chosen to complement and expand upon the existing primarily quantitative literature in this field (Bolding et al., 2006; Cooper et al., 2002; Daneback et al., 2007; Cooper et al., 2003) by exploring the experiences, thoughts, and strategies related to sexual partner-seeking activities on sex-oriented contact websites.

Method

Sampling

This study was conducted from 2007 to 2009 and is based on in-depth interviews with participants who used free and legal sex-oriented contact websites to search for sexual partners. Two methods were used to recruit the participants. Firstly, snowball sampling was used (Charmez, 2008) to recruit nine participants. This was done through the first author's contacts and several sex-oriented contact websites; websites specifically designed for making sexual contacts, sexual partner finding and searching for free sex. Secondly, after analyzing the first round of interviews, eight participants were recruited using theoretical sampling to maximize variability. These participants mainly had no Internet-mediated offline sex experience, and were selectively contacted on sex-oriented contact websites. Ten individuals were interviewed face-to-face in public spaces, and seven were interviewed via instant messengers.

The study included 4 females and 13 males aged 22 to 56. The sample was diverse with regard to marital status, there were singles (N=7), people living with partners (N=4) and divorcees, widowers and married respondents (N=6). The participants predominately defined themselves as heterosexual, with only one woman considering herself bisexual, and one man considering himself homosexual. Twelve participants reported having had sex offline with someone they had met on a sex-oriented contact website. The remainder had never had sex offline with someone they had met online, but were in the process of searching for a sexual encounter(s). Although the sample included participants with diverse backgrounds, it was homogenous in the sense that all had profiles on sex-oriented contact websites and were looking for sexual contacts. Further, despite age differences, the sample can be considered homogenous in that none of the participants represented the digital generation, those who have grown up with internet access.

Interview

The interviews were conducted by the first author. Less sensitive questions relating to the participants' general internet usage patterns were asked first. These were then followed by questions about the participants' histories of internet use for sexual purposes, and their number of established sexual contacts. Later, the participants were asked their reasons for posting an online ad, the types of sexual contacts that they looked for, and how they constructed their profile to reflect their use of contact websites. They were then asked about their experiences contacting sexual partners. These questions ranged from how they established sexual contacts, to offline sexual encounters (if they had had this experience). The interview was constructed in such way that it examined participants' understanding of sex-oriented contact websites, and their experiences with sex-seeking activity on the Internet. The face-to-face interviews lasted approximately one hour, and were less time-demanding than those conducted online. The online interviews were mostly carried out in several sessions, and

thus in several virtual settings. These interruptions affected the length of data gathering on the Internet, as each new session required a short recapitulation of the previous session to enable participants to reorient themselves before further questioning. Various reasons were given for interrupting the interviews, however, it seemed that participants profited from the ability to log in and out, feeling less obliged to complete the interview in one session. Further, the length of the online interviews may also have been influenced by the ability of participants to communicate with others while being interviewed (Smahel, 2003).

Analysis

Data collection and analysis were performed simultaneously (Strauss & Corbin, 1999). Both online and offline interviews were analyzed concurrently. The data underwent a phase of open coding to distinguish several themes. In this step the participants' statements were analyzed line by line, allowing text to be reduced to codes. For example a sentence "We look for almost all categories - for single women and men under certain conditions, because men are more interested in sex than women" was coded into "no preference in a sexual partner". Subsequently, focused coding was done to synthesize and explain the data obtained (Charmez, 2008). In this step the most significant or repetitive codes were chosen, enabling the data to be condensed. For example, online activities such as having sex-themed conversation, asking about the sexual desires of others, and describing one's own sexual wishes were compressed into the "Examining a partner's sexual life alias, exploring one's own tastes" category. Besides code creation, this step also involved exploring codes and comparing them to pre-existing literature dealing with the characteristics of computer-mediated communication, online disinhibition, and online infidelity etc. (Mileham, 2007; Suler, 2004; Walther, 1996). Following the focused coding phase, conceptual categories were established. These included Internet use for establishing only virtual sexual contacts, and engaging in sex-seeking activities for the purposes of finding offline sex partners.

Results

The themes that emerged revolved around the following different patterns of sex-oriented contact website use: A sex-oriented contact website was (1) used only for establishing virtual sexual contacts without the intention of offline realization, or (2) used to find sex partners for offline sexual encounters. The use of a sex-oriented contact website for finding an offline sexual partner took on various forms: (a) a strong focus on the “reality” of the sexual contact, (b) the inclination for both offline and online sexual contacts, and (c) expressing the wish to meet someone offline and have sex.

1. Virtual sexual contacts

Establishing virtual sexual contacts was one of the reasons given for posting ads on sex-oriented contact websites, for two participants this was the sole reason. This included activities such as chatting about sex, sharing sexual experiences and fantasies, or exchanging pictures, in some cases followed by masturbation. A noteworthy fact is that these virtual sexual contacts did not result in any offline sexual meetings and the participants intentionally avoided offline encounters. Participants who focused only on sexual interaction online emphasized the role of disclosing sexual content, i.e. talking about sex openly and without inhibition.

It is exciting. I can ask any intimate question and I receive an answer roughly 90% of the time. Of course I would not ask the same questions to a woman I met at work, on the metro, or on the street. (male, 28 years, single)

However, a partner’s disclosure of their sexual feelings was also related to a depreciation of their authenticity. The participants mentioned that a contacted person remained an “unreal” person, even though they had revealed their internal sexual desires.

You do not even know who you are writing to, so anyone can make up anything. I know a few people there, but it is still the Internet, it is still communication with someone you do not know. They can still lie to you, and that is how I see it. (male, 22 years)

It seems that intimacy is limited to the online environment, and that the online sharing of only sex related intimate information contributes less to the establishment of a trusting relationship bond, a bond which could help in the progression towards offline encounters. Although the interview excerpts above show communication to be disinhibited and sexually-focused, the participants in such sexually-liberated interaction may become unsure of the reality/truthfulness of the disclosed content. It seems that the greater openness produced by the Internet's anonymity may prevent daters from developing trustworthy relationships that could be transferred into the offline world. This may partly explain the participants' preference for only engaging in online sexual contact.

2. From virtual contacts to offline sex

As mentioned above, sex-oriented contact websites may be used in many ways. Besides establishing virtual sexual contacts, some participants had the intention of turning virtual contacts into actual offline sexual encounters.

2.1 Only interested in offline sexual contacts

For ten participants the analysis revealed a strong emphasis on offline sexual encounters. This strong focus reflected their prior experience with erotic contact sites. These participants had gradually developed strategies and learnt the rules, gaining the experience and the knowledge to navigate and interact on these websites. For example, some participants claimed they did not know exactly what they were looking for when they first uploaded their ad. They knew they wanted to have physical sex but not how to make it happen. Thus online sexual

interactions allowed them to discuss and negotiate possible types of sexual meeting, and to refine their partner search accordingly, such as by rephrasing their ads.

At first, we (he and his life partner) didn't know what we wanted. So the first step was to make this clear. We learnt that basically there are endless numbers of people proposing friendship ... so now we try to formulate specific intentions – no friendship, we have enough friends, enough friendship. We focus only on the sexual side. (male, 49 years)

This excerpt is an example of how sex seekers learn to filter their partners on sex-oriented contact websites. This participant's statement points out the difficulties associated with having sex with an unknown person met online. The participant mentioned that potential sexual partners often wished to develop friendship first, and then to have sex in this newly formed familiar context.

The following extract, with a participant who with his partner sought sex partners, demonstrates that the filtering process enables users to define the contexts for sexual contact. On the Internet or over the telephone the participant discussed the offline sexual encounters with his potential sex partners, negotiating how they would be realized, and outlining the limits.

We agreed to find a couple with a girl who is also bisexual. We want them to become our friends, to have barbecues together, go out and have fun sometimes, simply do more than just have sex. The sex is just a kind of bonus. And as far as it is concerned, we're not interested in switching partners, that's the rule, the girls can have fun with each other but no partner switching (male, 43 years).

In relation to the aforementioned participant's experience, an important distinction became apparent between those who sought offline sexual contacts, and those who preferred online sexual contacts; the participants created labels for those with no offline sexual encounter experience, such as "virtualists", "word-slingers", and "collectors of pictures",. This labeling reflected participants' experiences that exchanging messages with sexual content or chatting about sex with these individuals did not result in offline sexual encounters. Therefore, part of the learning process was to recognize the preferences of other users: is this person willing to meet offline and have sex or only to engage in virtual sex? This meant that in a specific phase, being online appeared reduced to a filtering activity.

I: Is it important for you that a partner has experience?

P: Well, we like it more when the couple has experience, at least in the sense that they have already met someone and spoken about it with them. The most terrible groups are those who want a first date. Then we cannot speak about sex on the date...So it is the worst group. We can't say no. We try to find out their attitudes and views over the phone: if there is any jealousy, what they want, what their notions are. (female, 47 years)

There is a noticeable emphasis on prospective partners having experience with Internet mediated sex as a guarantee for a successful sexual meeting. This excerpt shows how using the telephone to create a context for the sexual encounter becomes an alternative medium to the website. This gives the phone calls an additional function on top of checking mutual compatibility (Doering, 2009). The phone call serves as a trial, testing whether the participants can transfer a sexually oriented interaction from the Internet to an offline encounter, and whether their potential partners are capable of talking about sex with strangers rather than just writing sexual scenarios.

2.2 Switching between online and offline sexual contacts

Although having virtual sex is considered to be a substitute for offline sex, as labels such as “virtualists”, “word-slingers”, and “collectors of pictures” suggest. In the study two participants were interested in any type of sexual contact. This inclination towards both online and offline sexual interactions represents their openness to a variety of sexual experiences. They treated the Internet as a space for fantasizing and experimenting with sex in general, as well as for sex dating.

Well, when my relationship with my partner ended, I had no other option than to search alone. I have some experience with this. I mostly just toyed with it, exploring reactions and so on. And I did not stop it if something starting to develop I looked for single men, I tried couples and I tried to contact women sometimes. (female, 36 years)

The continuing importance to users of the Internet as a venue for experimenting with sexual contacts can be seen even in those with experience in meeting sexual partners offline. The online interaction represents play that may precede offline sexual encounters. However, the following excerpts illustrate the variability of explanations given by participants for turning online sexual contacts into offline sexual meetings. Though, the excerpts also show that this transfer may be affected by the impulsivity of online sex-seekers:

I: *What do you have to do...so you can meet in real life and have sex?*

P: *Both must be willing to do it, I don't know what exactly it is. But both must consider it more than only virtual talk about sex. (male, 27 years)*

Once I met a doctor, or he pretended to be a doctor. He was priggish but he attracted me. So I did it with him. It was quite rough, he didn't ask me about contraception, and we had unprotected sex...Perhaps it was my fastest date, we were chatting in the evening and then we hooked up. (female, 36 years)

The excerpts show that experience with virtual sex, and talking about sex, connect the virtual world with offline everyday life, shortening the distance between the online and offline worlds. The negotiation process also seemed to be inhibited when compared to that of users seeking only offline sex. While transferring contacts from the Internet to the offline world can be impulsive, sex seekers may be aware that they do not get to know their sexual partners well on the Internet, and that potentially anyone could pretend to be anybody else on a sex-oriented contact website.

2.3 On the border between an online sexual contact and an offline sexual encounter

The following use of sex-oriented contact websites is specific, and seems to be situated between using these sites to establish sexual contacts online and establishing them offline. It has the characteristic of a desire to have sex offline which has not yet been fulfilled. This was the case for three of the participants.

I: *What do you mean by “you are seeking and yet not seeking”?*

P: *First, I wanted to have sex – at that time I didn't have a girlfriend (now he has one). But now that I know more about them (dating sites), what chance is there to find sex there, I would say that it is more about the entertainment. I would bet that a man would have a higher probability of finding sex in a bar. But if I actually got the chance to have sex, I still think I would not refuse. (male, 26 years)*

Notably, using sexually related contact websites is still attractive despite a perceived lower probability of meeting offline sex partners. The extract shows that although the participant had not yet met an online sex contact in real life, having an ad on a sex-oriented contact site was understood as expressing a desire for sex. In addition, contacting potential partners for offline sex allowed him to feel close to having sex, which could be sexually pleasurable. Furthermore, this participant's experiences suggest that contacting potential sex partners online only may not be perceived as infidelity. In other words, an individual using a sex-oriented contact website is virtually close to an offline sexual encounter, while at the same time far from being unfaithful (see Mileham, 2007; Whitty, 2005).

Discussion

Our results suggest that although interaction on sex orientated contact websites may begin with the disclosure of intimate details such as sexual desires, not all sexual contacts established online progress into offline encounters. Some participants were not able, or did not want, to keep the sexually liberated style of interaction they had expressed online in offline encounters. Moreover, some of those who reported having sex with someone they met online said they developed strategies to recognize partners who would be willing to meet offline. This suggests that sexually related online interactions do not facilitate offline sexual encounters. Based on Gagnon and Simon's (2005) theory of sexual scripts, our data interpretation is that the scripts related to the intrapsychic dimension may be easy to develop in the anonymous online environment where a feeling of privacy and intimacy is preserved. Talking about sexuality on the Internet is actually typing about sexuality (see Ross, 2005). This means that Internet users do not verbally articulate any words with sexual content, and are able to communicate things that would be awkward to say out loud. This reveals a large gap between establishing sexual contacts online and offline. On the Internet users can communicate their intrapsychic scripts more easily than in offline life; users' scripts become

publicly private on the Internet (see Lange, 2007). This may result in the dominance of intrapsychic scripts over (public) interpersonal and cultural scripts in online sexual encounters. However, while these scripts may be suppressed in anonymous non-physical interactions, they seem to come into play in face to face meetings. Participants who had sex offline with a partner they met online reported several common strategies for bridging the gap between the silence and anonymity of the internet and the face-to-face sexual setting. For example a phone call required them to move on from non-verbal sexual interaction to actively voicing where and how sex would occur.

Developing the argument above based on the theory of scripts, it is also assumed that sex-seekers behave on the Internet according to a script that approves of sexually disinhibited behavior in an anonymous, silent, and non-physical environment. This may clash with the more traditional scripts that have previously guided offline sexually related interaction. This disagreement between sexual scripts may inhibit the progression of online sexual contact into offline encounters.

A noteworthy group of sex seekers were distinguished who had no specific contact preferences, nor did they seem to have any trouble meeting their online sexual partners in the offline world. Experience with online sex may shorten the distance between online and offline sexual contact. Interestingly, sex-related online interaction was still appealing for these participants, even though they could easily cross the borders between online and offline sexual encounters. In relation to the prior research finding that cybersex may precede offline sexual encounters (Daneback et al., 2005; Daneback et al., 2007) it is assumed that for these individuals cybersex is arousing and may enhance subsequent offline meetings. Furthermore, it was found that the risks related to the accelerated development of intimacy in online interaction were not a problem for these users (Ross, Rosser, & Stanon, 2004). These sex seekers were less likely to become vulnerable to illusionary feelings of closeness and mutual

familiarity, feelings which can enhance offline meetings with online sexual partners, potentially leading to unprotected sex. Some sex seekers seemed to switch settings from online to offline quickly and easily. This reduced the time available for negotiating the sexual encounters, where various health related issues such as risks and safety could be discussed. Thus, an eagerness to quickly engage in sexual activity may have a negative impact on health.

The last group of online sex seekers lies between online sexual contacts and offline sexual encounters, and represents a specific use of sex-oriented contact websites. Although they desire real-life sexual encounters, they admit that they are less active in seeking sexual partners online. In the results section it is suggested that this kind of website usage actually includes contact with potential sex partners: This contact, for example replying to messages or chatting, provides pleasure in its own right, sometimes accompanied by masturbation. The use of a sex-oriented contact website can be considered both a form of solitary-arousal (viewing sexually explicit materials) and partnered-arousal (sharing sexual fantasies). Both of these activities are more common among male Internet users than female Internet users (Shaughnessy et al., 2010). Even though it requires further research, it is speculated that this particular use of sex-oriented contact websites might be specific to male Internet users who, as prior research has shown, are more likely to look for sexual partners online, to reply to sex ads (Cooper et al., 2003; Cooper et al., 2002) and also have a lower tendency to have sex offline (Bolding et al., 2006; Daneback et al., 2007).

In summary, the specific characteristics of the Internet produce new sexual scripts that are not in accordance with the sexual behavior scripted for more traditional offline encounters. This incongruity can be profitable for certain sex seekers, such as married or engaged users who establish online sexual contacts and may not consider this behavior as infidelity. This may bring a new level of both sexual experience and misunderstanding into marital or partner relationships.

It seems that engaging in online sex-seeking activities allows users to communicate the content of their intrapsychic scripts, making them more accessible to an audience, and thus open to discussion with others. This may be useful for clinicians in that it provides an explanation as to why some Internet users can become fixed to internet use for sexual purposes. Online sex-seeking activities give users easy access to the contents of their intrapsychic scripts, namely to their sexual desires and fantasies. This ease of access may accelerate their fulfillment during online interactions. Therefore, clinicians working with clients who are preoccupied with the internet as a source of sexual satisfaction could aim to find instruments that would enable clients to communicate the content of their intrapsychic scripts offline, e.g. within an existing partner or marital relationship.

This study has several limitations. Although the data from both online and offline interviews covers a wide range of experiences related to the use of sex-oriented contact websites, the participants interviewed offline emphasized different themes to those interviewed online. This may have induced bias in our study: in face-to-face contact participants may have been less willing to reveal the outcomes of virtual interactions, or may have felt less open to disclose their intimate issues than those interviewed via instant messengers. In addition, it is possible that the individuals who volunteered could have an enhanced/escalated agency in their sexual lives on or off the Internet. The findings might also be typical for the Czech Republic, which has a higher rate of extramarital relations than other western countries, e.g. Great Britain (Weiss & Zvěřina, 2001), and a higher number of sexual partners per person compared to, for example, the United States (Weiss, Kučera, & Svěráková, 1995; Weiss & Zvěřina, 2001). Although this study met the criteria for theoretical saturation, including more participants could possibly have added to the results. Finally, a mixed methods design would probably have increased the validity of the findings.

Concluding remarks

In conclusion, sex orientated contact web sites expand users opportunities for sexual interaction. Users establish various types of sexual contacts, ranging from those strictly related to the Internet, to those connected to the offline world. This study has shown that some daters find it difficult to transfer intimate online contact into an offline meeting. The importance of predefining the context of offline sexual encounters has been recognized, as it allows individuals to keep their behavior offline sexually disinhibited. However, there are daters who search for sexual contacts, both online and offline, seeming to easily cross the boundaries between sex-oriented contact websites and everyday life. This potentially accelerates their partner-seeking activities. Determining the socio-demographic characteristics of these daters remains a question for future research. In addition, the new scripts present online may also influence offline sexual scripts on a cultural level. How and when this may occur are also questions for future research.

References

- Albright, J. (2008). Sex in America online: An exploration of sex, marital status, and sexual identity in internet sex seeking and its impacts. *Journal of Sex Research*, 45, 175–186.
- Bolding, G., Davis, M., Hart, G., Sherr, L., & Elford, J. (2006). Heterosexual men and women who seek sex through the internet. *International Journal of STD & AIDS*, 17, 530–534.
- Charmez, K. (2008). Grounded theory. In J. Smith (Ed.), *Qualitative psychology: A Practical Guide to Methods* (pp. 81-110). London: Sage Publications.
- Cooper, A., Månsson, S. A., Daneback, K., Tikkanen, R., & Ross, M. W. (2003). Predicting the future of Internet sex: Online sexual activities in Sweden. *Sexual and Relationship Therapy*, 18, 277-291.

- Couch, D., & Liangputtong, P. (2008). Online dating and mating: The use of the internet to meet sexual partners. *Qualitative Health Research*, 18, 268-279.
- Daneback, K. (2006). *Love and sexuality on the Internet*. Unpublished doctoral thesis, Department of Social Work. Goteborg: Goteborg University.
- Daneback, K., Cooper, A., & Månsson, S.-A. (2005). An Internet study of cybersex participants. *Archives of Sexual Behavior*, 34, 321-328.
- Daneback, K., & Månsson, S.-A. (2009). Kärlek och sexualitet på internet år 2009. En enkätundersökning bland män och kvinnor 18-24 år [Love and sexuality on the internet 2009: A survey of young men and women aged 18-24]. Ungdomsstyrelsen, Se mig. Unga om sex och internet [See me: Young people on sex and the internet]. *Ungdomsstyrelsen*, 9, 182-237.
- Daneback, K., Månsson, S.-A., & Ross, M.W. (2007). Using the Internet to find offline sex partners. *CyberPsychology & Behavior*, 10, 100-107.
- Davis, M., Hart, G., Bolding, G., Sherr, L., & Elford, J. (2006). E-dating, identity and HIV prevention: theorizing sexualities, risk and network society. *Sociology of Health and Illness*, 28, 457-478.
- Doering, N.M. (2009). The Internet's impact on sexuality: A critical review of 15 years of research. *Computers in Human Behavior*, 25, 1089-1101.
- Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication*, 11(2). Retrieved August 26, 2009, from <http://jcmc.indiana.edu/vol11/issue2/ellison.html>
- Gagnon, J., & Simon, W. (2005). *Sexual Conduct: The Social Sources of Human Sexuality* (2nd ed.). Chicago: Aldine Transaction.

- Lange, P. G. (2007). Publicly private and privately public: Social networking on YouTube. *Journal of Computer-Mediated Communication*, 13(1), article 18.
<http://jcmc.indiana.edu/vol13/issue1/lange.html>
- Mileham, B.L.A. (2007). Online infidelity in Internet chat rooms: an ethnographic exploration. *Computers in Human Behavior*, 23, 11-31.
- Ross, M.W. (2005). Typing, doing and being: sexuality and the Internet. *Journal of Sex Research*, 42, 342–52.
- Ross, M.W., Rosser, B.R.S., McCurdy, S. & Feldman, J. (2007). The Advantages and limitations of seeking sex online: A Comparison of reasons given for online and offline sexual liaisons by men have you have sex with men. *Journal of Sex Research*, 44, 59-71.
- Ross, M.W., Rosser, B.R.S., & Stanon, J. (2004). Beliefs about cybersex and Internet-mediated sex of Latino men who have Internet sex with men: relationships with sexual practices in cybersex and in real life. *AIDS Care*, 16, 1002-1011.
- Shaughnessy, K., Byers, E.S., & Walsh, L. (2010). Online sexual activity experience of heterosexual students: Gender similarities and differences. *Archives of Sexual Behavior*. DOI: 10.1007/s10508-010-9629-9
- Šmahel, D. (2003). Komunikace adolescentů v prostředí internetu [Communication among adolescents in the Internet environment]. *Československá psychologie*, 2, 144-156.
- Strauss, A., & Corbin, J. (1999). *Základy kvalitativního výzkumu: postupy a techniky zakotvené teorie* [Basics of Qualitative Research]. Boskovice: Albert.
- Suler, J. R. (2004a). The online disinhibition effect. *CyberPsychology and Behavior*, 7(3), 321–326.
- Tikkanen, R., & Ross, M.W. (2003). Technological tearoom trade: Characteristics of Swedish men visiting gay internet chat rooms. *AIDS Education and Prevention*, 15, 122-132.

- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23, 3-43.
- Weiss, P., Kučera, Z. & Svěráková, M. (1995). Sexuální chování českých adolescentů a jeho rizikovost z hlediska infekce HIV/AIDS: výsledky národního výzkumu [Sexual behavior among Czech adolescents and its riskiness from the perspective of HIV/AIDS]. *Československá psychologie*, 39, 425-432.
- Weiss, P., & Zvěřina, J. (2001). *Sexuální chování v ČR – situace a trendy* [Sexual behavior in CZ – the situation and trends]. Portal: Praha.
- Whitty M.T. (2005). The 'Realness' of Cybercheating: Men and women's representations of unfaithful Internet relationships. *Social Science Computer Review*, 23(1), 57-67.
- Whitty, M.T. (2008). Revealing the 'real' me, searching for the 'actual' you: Presentations of self on an internet dating site. *Computers in Human Behavior*, 24, 1707-1723.

Study II

Ševčíková, A., & Konečný, Š. (2011). An exploration of the relationship between real-world sexual experience and online sexual activity among 17 year old adolescents.

Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 5(1).

Abstract

The aim of this study was to explore the degree of correspondence between sexual behaviour in the real world and that on the internet, among seventeen year old Czechs. The adolescents, 237 girls and 225 boys, completed a computer-administered questionnaire which examined sexual behaviour offline and sexual activities on the Internet. Individuals who reported any offline sexual experience tended to engage in online sexual activities more often than those who did not. The use of the Internet for sexual purposes was similar for those who had experienced kissing and/or petting, it then increased, being similar for those who had experienced oral sex and/or sexual intercourse. Findings suggest that the relationship between the gradual extension of sexual experience offline and the gradual extension of using the Internet for sexual purposes is rather weak.

Keywords: adolescence, sexuality, Internet, Czech Republic

Introduction

One of the many life stage virtues in adolescence is the development of physical and emotional intimacy in relationships with others (Collins & Sroufe, 1999; Erikson, 1968; Weinstein & Rosen, 1991) the topic of sexuality being particularly emphasized during this

period. A great number of teenagers become sexually active during adolescence (Savin-Williams & Diamond, 2004) when undergoing physiological changes that lead to an increased interest in sex (Weinstein & Rosen, 1991). With increasing age the importance of the sexual dimension and sexual experience grows (Furman & Werner, 1997; Weinberg Lottes, & Shaver, 1995; Weiss & Zvěřina, 2004).

Prior research has shown that adolescents may have experience in several offline sexual activities such as autoerotic activities (Halpern, Udry, Suchindran, & Campbell, 2000) and necking or petting (Weiss & Zvěřina, 2004). Further, some have already had intercourse or practiced oral sex (Weinberg et al., 1995). Younger adolescents also report sexual behaviour. For example, in one study three quarters of both sexes were found to have engaged in talking about sex, kissing and hugging, watching or reading pornography (primarily boys), and humping or feigning intercourse before age 12 (Larsson & Svedin, 2002). Based on another study, over 80% of youth had participated in non-coital, partnered sexual activities (typically mutual masturbation and oral-genital contact) before age 16 (Bauserman & Davis, 1996). Late adolescence is the time of coital debut; the sexual debut of women occurs on average at the age of 17, and for men on average at the age of 16 (Baumeister, 2000; DeLamater & Friedrich, 2002; Hopkins, 2000). Placing this in a Czech context, most adolescents experience their first coitus at the age of 17-18 (Weiss & Zvěřina, 2004).

In summary, the aforementioned studies show that adolescents behave sexually and that the issue of sexuality becomes very topical in their lives. This can manifest as an increased need to come in contact with themes related to sex, or to engage in sex-related issues. Adolescent sexual development mostly occurs within the context of romantic relationships (Brown, Feiring, & Furman, 1999). However, in recent times adolescents have also begun to turn to the Internet as a source for the development of their interests in sex-related issues.

Sexual activities on the Internet

The Internet can be understood as an environment providing easy access to various material of a sexual nature in an anonymous setting (Cooper, 1998). It was found that adolescents, for whom sexuality is an important developmental issue, are active in using the Internet in a sexually related context for various purposes: (a) They seek answers to their questions regarding sexuality and health online (Boies, 2002; Graya, Klein, Noyce, Sesselberg, & Cantrill, 2005; Subrahmanyam, 2007; Suzuki & Calzo, 2004). (b) They discuss sexually relevant topics and take part in sexually-tinged conversations (Subrahmanyam, Smahel, & Greenfield, 2006; Smahel, Subrahmanyam, 2007). (c) They experience cybersex (Vybíral, Smahel, & Divínová, 2004). (d) They search for romantic partners on the Internet, namely in chat rooms (Smahel & Subrahmanyam, 2007). (e) In the context of seeking romantic partners they create sexual self-representations (Subrahmanyam, Greenfield, & Tynes, 2004; Subrahmanyam, et al., 2006). To conclude, adolescents engage in various online sexual activities, this can include any activity that involves sexuality for purposes such as recreation, entertainment, exploration, support, education or romantic partner seeking (Cooper & Griffin-Shelley, 2002).

Czech adolescents appear to be active in using the Internet for sexual purposes. A study of 681 12- to 20-year-olds showed that 16% of teenage boys and 15% of teenage girls engaged in “virtual sexual” activities (Smahel, 2006). Additionally, no differences were found among the age groups of 12-14, 15-17 and 18-20 year olds. Adolescents are also unique in utilizing sexual content. Although the percentage range of adolescents being exposed to sexually explicit materials at a young age varies across countries (Livingstone, Haddon, Goerzig, & Ólafsson, 2010; Peter & Valkenburg, 2006; Ybarra & Mitchell, 2005) a representative survey has shown that the Czech Republic has the 2nd highest rate in Europe of adolescent exposure to sexual images online, 29% (Livingstone et al., 2010). Further, Czech

teens seem to be very experienced in sending or posting sexual messages on the Internet, with 11 % reporting this activity, the highest reported percentage in Europe (Livingstone et al., 2010).

A sex-oriented literature review made by Subrahmanyam and Smahel (2011) shows that research on creating sexually relevant content (construction of sexual selves online) and online sexual interaction seems to be eclipsed by research focused on exposure to sexually explicit media (the Internet included) at a young age and its impact on attitudes towards an adolescents' sexuality and sexual behaviour in physical life (see Braun-Courville & Rojas, 2008; Brown & L'Engle, 2009; Flood, 2007; Lo & Wei, 2005; Peter & Valkenburg, 2006; Wolak, Mitchell & Finkelhor, 2007 etc.). In other words, the relationship between sexually related online activities and sexual behaviour in physical life among adolescents was predominantly studied in the context of exposure to sexually explicit online materials. However, the ways in which adolescents are involved in sex related themes online seems to be broader. Therefore, the aim of this paper is to shed light on the relationship between using the Internet for sexual purposes and sexual experience gained in real life among older adolescents, in particular, among 17-year-olds who are familiar with the Internet (Lupač & Sládek, 2008).

Hypotheses in the context of current studies

The relationship between online sexual activities and offline sexual behaviour can be viewed similarly to the broader comparison of behaviour on the Internet with that in real life. According to Smahel (2003), behaviour on the Internet and in physical life corresponds to the actual state of an adolescent's identity, with one apparent difference: the safe environment of the Internet allows adolescents to experiment more with their own sexuality (Subrahmanyam et al., 2004). Furthermore, adolescents in the environment of so-called weblogs look not only

for continuity with their identity as presented in real life, but also for affirmation of their own self-representation among peers, and among their online friends (Huffaker & Calvert, 2005). This interconnectedness of virtual and real life has been confirmed in other studies, which show that adolescents on the Internet affiliate with people they already know in their offline lives (Gross, 2004) or that they use the Internet to intensify their real life love relationships (Subrahmanyam & Greenfield, 2008). Based on the concept of continuity of the adolescents' lives offline and online, it is possible to assume that offline sexual behaviour is reflected in the use of the Internet.

H1: Adolescents who have no off-line sexual experience will use the Internet less for sexual purposes than adolescents who have off-line sexual experience.

The first hypothesis claims there is a difference between the off-line sexually experienced and the inexperienced. The second hypothesis develops this further and tests whether online sexual practices increase gradually in line with offline experience.

H2: There will be differences in the extent of Internet use for sexual purposes between adolescents who have kissed, petted, had oral sex, and had sexual intercourse.

Method

Participants

For this cross-sectional study a sample was taken from a Czech longitudinal research project, a part of the European Longitudinal Study of Pregnancy and Childhood (ELSPAC). The Czech part of this project has been running since 1991, when the research sample consisted of all children whose residential addresses were in the city of Brno and who were

born in the period March 1st 1991 – June 30th 1992 (approximately 5000 families) and all children whose residential addresses were in the district of Znojmo and were born between April 1st 1991 and June 30th 1992 (approximately 1500 families). Since the prenatal period the mothers of the respondents have repeatedly completed questionnaires. Since 1999, the respondents have taken part in broader psychological assessments. These have taken place at intervals of about 2-3 years, when the respondents were 8, 11, 13, 15 and 17 years old. The present study was conducted on 462 respondents (237 girls and 225 boys) of those families remaining active in the longitudinal study. It was carried out within the last wider examination in 2008/2009 when the respondents reached the age of 17. The respondents were sent a letter asking them to participate in our research. Despite the amount of longitudinal data from previous research waves it was not possible to monitor any trends in this area as our research, concerned with sexual behaviour on the Internet, was presented to the respondents for the first time.

Procedure

Respondents who agreed to participate in the research were invited to the Institute where they were asked to fill in computer-administered questionnaires. These included questions related to sexual behaviour in real life, and online sexual activities. Computer administration of the questionnaires ensured anonymity which is crucial when responding to such sensitive issues. Because of the significant amount of time required, the respondents were allowed to interrupt filling in their questionnaires whenever they wished to and to return to them at a later time, usually at home via the Internet. However, they could not change their previous answers when they logged on again from a different location.

Measurement

This study was preceded by a pilot study of 110 participants. Through this pilot study the most common sexual behaviours of adolescents on the Internet were looked at. This helped refine the wording of the questions concerning online sexual activities. A list of these activities included, obtaining information about sex on the Internet, talking about sex, talking about sexual experiences, exchanging erotic photos, and experimenting with “sex on the Internet”. Individuals were asked whether they had looked for sex-related information such as sexual guidelines and problems, not erotic videos or photos. Online sexually related interaction was measured through questions about whether participants had talked about sex, whether they had discussed their own sexual experience or whether they had discussed their online partner’s sexual experience, and whether this had happened with known or unknown people. Further, respondents were asked whether they had sent erotic photos of themselves to others, or received erotic photos from others. And finally, they were asked whether they had ever tried to have online sex with someone.

A graded scale (1 = never, 2 = only once, 3 = several times over the past year, 4 = at least once a month, and 5 = at least once a week) was used to measure the extent of internet use for sexual activities. However, because of low frequency at the extreme ends of the scale this was later changed to only one interval. A scale was created by summing each of the ten items. A higher score indicated greater experience with using the internet for sexual purposes. The scale had good internal consistency ($\alpha = 0.872$).

The second series of questions dealt with offline sexual behaviour, with a special focus on having experience with “kissing”, “petting, embracing, caressing intimate parts”, “oral sex”, and “sexual intercourse”. Non-coital sexual activities were considered to precede intercourse (Weinberg et al., 1995; Weiss & Zvěřina, 2001). Due to the normal distribution of the collected data we used T-tests and Pearson correlations in SPSS v. 15.

Results

For adolescents actual real life sexual activities were more frequent than online sexual activities, as proven by our results. Real sexual activities occurred among 54 - 90% of participants depending on the type of activity; whereas 12 - 60% had been involved in different kinds of online sexual experiences (see Table 1 for details).

---Insert table 1---

Adolescents confirmed the highly sensitive nature of the topic through their reduced willingness to answer questions concerning oral sex and sexual intercourse experience. These were skipped by 52% of participants. The most common real-life sexual activity was kissing and the least common was sexual intercourse. The only difference between boys and girls was found in petting, where girls reported petting with someone more often than boys did, $X^2(1) = 8.87$, $p < 0.01$. Concerning virtual sex life, the most frequent sexual activity was communication about sex, and about the sexual experiences of themselves or others. The least frequent was sending erotic photos of themselves and having sex on the Internet.

To discover the possible relationship between real-life sexual experiences and sexual activities on the Internet the participants were split into two groups. The first group contained those adolescents who had reported any offline sexual experience (such as “kissing”, “petting, embracing or caressing intimate parts”, “oral sex”, and “sexual intercourse”). The second group was made up of those who indicated that they had never kissed, petted, had oral sex, or sexual intercourse with anyone. Both groups were compared based on their level of online sexual activities (by t-test).

---Insert table 2---

As Table 2 indicates, sexually experienced adolescents were significantly more interested in sexual contents and communication on the Internet than inexperienced ones. At the same time it is apparent that even those more sexually experienced adolescents had relatively low scores on this scale (1.21 to 2.49). We may conclude that hypothesis 1, which assumes that there is a difference between the off-line sexually experienced and the inexperienced, was confirmed.

In order to test the second assumption regarding the relationship between the growth of sexual experience offline, and the growth in Internet use for sexual purposes, four mutually exclusive groups were created. The first group included only those adolescents who had kissed; the second, only those who had kissed and simultaneously petted; the third, only those who had experienced oral sex, kissing and petting; and the final group included only those who had experience with sexual intercourse including kissing, petting or oral sex. The groups were mutually exclusive in that the highest level of experience was used as the defining characteristic, e.g. those with kissing, petting and oral sex experience were excluded from the groups “experience with kissing” and “experience with petting” and grouped in “experience with oral sex”.

---Insert table 3---

In Table 3 adolescents who had kissed are compared with those who had never experienced an intimate kiss. Table 4 shows the findings from the comparison of those who had kissed and petted offline and those who reported no petting.

---Insert table 4---

In Table 5 individuals who had experience with kissing, petting, and oral sex are compared with those who had not had oral sex. Finally in Table 6 individuals who had experience with kissing, petting, oral sex and sexual intercourse are compared with those who did not report any sexual intercourse. Due to a gradual distinction in the level of sexual experience, t-tests were used to analyse how individuals with different real life sexual experience differed in using the Internet.

From Table 3 it is apparent that individuals with kissing experience used the Internet to search for sexually relevant information, to talk about sex with a known person, and to share their sexual experiences more often than those adolescents who had no kissing experience. The only significant difference between adolescents with or without experience with petting was found in the frequency of accessing information related to sex (see Table 4). The most interesting thing was that it was the only significant case where inexperienced individuals were more active on the Internet than experienced ones.

---Insert table 5 & table 6---

From Table 5 and Table 6 is evident that the next two levels of sexual activity documented an increasing interest in internet use for sexual purposes among our respondents. Our results suggest that those individuals with oral sex and sexual intercourse experience were more likely to engage in a wide range of online sexual activities than those having no experience with oral sex or sexual intercourse. The only exceptions here were in “Discussing with an unknown person about unknown’s sexual experience” and “Having sex on the

Internet”, where the differences between experienced and inexperienced adolescents were not significant.

To analyse how the groups differed in Internet use, a scale of online sexual activities was developed. Through this the differences in internet use for sexual purposes compared to offline sexual experience was examined. Differences between sexual activities on Internet and sexual experiences in real life were confirmed, $F(3,389) = 19.510$, $p < 0,001$, $r = 0.36$. The Bonferroni post hoc test showed that the group “experienced with kissing” ($M=13.8$, $SD=6.19$) significantly differed from “experienced with oral sex” ($M=18,7$, $SD=5,79$), $p < 0.001$, and from “experienced with intercourse” ($M=19$, $SD=7,41$), $p < 0,001$. Similar findings were found for those “experienced with petting” ($M=14.08$, $SD=4.13$) and for “experienced with oral sex” ($p<0.001$) and “experienced with intercourse” ($p<0.001$). There were no significant differences between adolescents “experienced with kissing” and “experienced with petting”, as well as none between those “experienced with oral sex” and “experienced with intercourse” (see Figure 1). In conclusion, hypothesis H2 was rejected: Internet use for sexual purposes is similar for those who have only experienced off-line kissing and petting, it then suddenly increases, and is again similar at this higher rate for those who have experienced off-line oral sex and sexual intercourse, as demonstrated in Figure 1.

---insert figure 1

Discussion

This research aimed to explore the relationship between online sexual activities and offline sexual experiences. A positive relationship was found between being sexually experienced offline and the range of use of the Internet for sexual purposes. Respectively,

sexually experienced adolescents were more likely to use the Internet for sexual activities than sexually inexperienced ones.

Although the Internet allows access to a range of sexual content, establishing (romantic) contacts, or engaging in sexually-related discussion, this study's findings suggest that sexually inexperienced 17 year olds are less likely to compensate for their lack of offline sexual experience through enhanced Internet use. The only exception was found in regards to the level of experience with petting; here less experienced adolescents looked for more information related to sex online. This might be explained as follows: certain skills are required to establish intimate contacts and to gain experience with some offline sexual practices (Brown et al., 1999) this may be the reason for individuals engaging in sex-related interactions on the Internet. This can mean that a non-interactive sexual behaviour on the Internet, such as looking for sexual information, is a suitable way for approaching sex among those who lack offline experience. While a greater openness to sex-related interaction on the Internet such as talking about sex, discussing sexual experience, exchanging erotic photos, and partly having virtual sex, is connected to a higher degree of offline sexual experience. However, further research is required to examine whether this openness towards sexual interaction enhances sexual activity in physical life, or whether it follows offline sexual experience, in the sense that adolescents use the Internet to reinforce their existing romantic relationships (Subrahmanyam & Greenfield, 2008).

The findings suggest that increased offline sexual experience is related to engaging in interactive activities such as discussing one's sexual experiences, having virtual sex and exchanging erotic photos. However, it has been shown that the extent of the sexual activities performed online did not gradually develop with the acquisition of offline sexual experience. There was a notable difference in the use of the Internet for sexual purposes among adolescents who had kissed or petted and those who had practiced oral sex or sexual

intercourse. Apart from accessing sexually relevant information, talking about sex and discussing one's own sexual experience with a known person, the adolescents with kissing experience did not differ from those with no kissing experience. Further, young people who have petted did not differ in their internet use from their peers with no petting experience, with one exception relating to accessing information. The data suggests that the approach of corresponding the offline behaviour of adolescents to their behaviour on the Internet (Smahel, 2003) is not directly applicable in the area of sexuality. One possible explanation could be that both kissing and necking are considered by adolescents as less serious sexual experiences than oral sex or sexual intercourse, and thus they do not warrant being discussed online or stimulate broader internet use for sexual purposes. However, the findings may be viewed differently when taking into consideration the effects of the internet on adolescent's sexuality. For example exposure to sexual content on the Internet may stimulate offline sexual activity (Brown & L'Engle, 2009). In relation to the present study, we may assume that internet use for sexual purposes to a small extent has a small effect on offline sexual behaviours.

The study suggests that the adolescents who had experienced oral sex and/or sexual intercourse were more likely to be "sexually" active on the Internet and engage in a wide range of measured online sexual activities. This result may be partly explained by a difference in adolescent's perception of offline sexual activities. As prior research has shown, sexual practices with genitals such as oral sex and intercourse are very close in the sense that it is not clear whether oral sex precedes coitus or vice-versa. Some studies have shown that the first participation in oral sex by adolescents follows their first coitus (Weinberg et al., 1995), whereas others have found the opposite (Schwartz, 1999). However, in relation to the acquisition of sexual experiences both activities follow kissing or petting (including caressing the intimate parts of the body). This may imply that these sexual practices have a different meaning for adolescents than kissing and petting. Thus this closeness between oral sex and

coitus is reflected in online sexual activity, those having experience with one of the aforementioned offline sexual practices using the Internet for similar sexual purposes, purposes which are different from those who do not report any experience with oral sex or intercourse.

There were several limitations to this study which must be considered when assessing its findings. Firstly, there was no official trend available on how adolescents acquire offline sexual experience; for example whether petting necessarily precedes sexual intercourse. Secondly, thanks to new media there are many sexual materials accessible to adolescents. These may affect the sexual scripts that they have adopted. Thirdly, the battery on online sexual activities did not include watching online pornography which represents a non-interactive behaviour. Neglecting this activity may raise questions about the aforementioned conclusion that the sexually inexperienced are less likely to compensate their lack of offline sexual experiences by enhanced Internet use for sexual purposes. Finally, the findings come from a cross-sectional study, which limits insight into the role of the Internet in emerging adolescent sexuality. It is not known if turning to the Internet for sexual purposes preceded the acquisition of sexual experiences offline, or vice versa. A longitudinal study could show clearly how the Internet becomes a part of the sexual lives of adolescents: how engaging in online sexual activities changes adolescents, and which of them is preferred by younger adolescents and older adolescents.

Conclusions

The study shows that those with sexual experience offline are more likely to use the Internet for sexual purposes than those who are not experienced at all. Although the Internet offers a wide range of possibilities for sexual interactions, less sexually experienced 17-year-olds do not seem to compensate for their lack of sexual experiences by using the Internet.

Those that had experienced kissing or petting appeared to use the Internet for sexual purposes similarly; the rate and range of use then increased to a higher level which was similar for both those who had experienced oral sex or sexual intercourse. In conclusion, the relationship between the gradual extension of sexual experience offline and the gradual extension of using the Internet for sexual purposes is rather weak.

References

- Baumeister, R. F. (2000). Gender differences in erotic plasticity: The female sex drive as socially flexible and responsive. *Psychological Bulletin*, 126, 247–374.
- Bauserman, R., & Davis C. (1996). Perceptions of early sexual experiences and adult sexual adjustment. *Journal of Psychology and Human Sexuality*, 8, 37–59.
- Boies, S.C. (2002). University students' uses of and reactions to online sexual information and entertainment: links to online and offline sexual behaviour. *Canadian Journal of Human Sexuality*, 11(2), 77-89.
- Braun-Courville, D.K., & Rojas, M. (2009). Exposure to Sexually Explicit Web Sites and Adolescent Sexual Attitudes and Behaviors. *Journal of Adolescent Health*, 45, 156–162.
- Brown, B.B., Feiring, C., & Furman, W. (1999). Missing the love boat: why researchers have shied away from adolescent romance. In W. Furman, B.B. Brown, C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 1-16.). New York: Cambridge University Press.
- Brown, D. J., & L'Engle, L. K. (2009). X-Rated: Sexual Attitudes and Behaviors Associated with U.S. Early Adolescents' Exposure to Sexually Explicit Media. *Communication Research*, 36, 129-151.

- Buzwell, S., & Rosenthal, D. (1996). Constructing a sexual self: Adolescent's sexual self-perceptions and sexual risk taking. *Journal of Research on Adolescence*, 6, 489-513.
- Collins, W. A., & Sroufe, L. A. (1999). Capacity for intimate relationships: A developmental construction. In W. Furman, B. B. Brown, C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 125-147). Cambridge, UK: Cambridge University Press.
- Cooper, A. (1998). Sexuality and the Internet: surfing its way into the new Millennium. *CyberPsychology & Behavior*, 1(2), 187-194.
- Cooper, A., & Griffin-Shelley, E. (2002). The Internet: The new sexual revolution. In A. Cooper (Ed.), *Sex and the internet: A guidebook for clinicians* (pp. 1-15). New York: Brunner-Routledge.
- DeLamater, J., & Friedrich, W. N. (2002). Human sexual development. *Journal of Sex Research*, 39, 10-14.
- Erikson, E. H. (1968). Osm věků člověka [Eight ages of man]. Praha: KÚP.
- Flood, M. (2007). Exposure to pornography among youth in Australia. *Journal Sociology*, 43, 45-60.
- Furman, W., & Werner, E.A. (1997). Adolescent romantic relationships: a developmental perspective. *New Directions for Child Development*, 78, 21-36.
- Graya, N.J., Klein, J.D., Noyce, P.R., Sesselberg, T.S., & Cantrill, J.A. (2005). Health information-seeking behaviour in adolescence: the place of the internet. *Social Science & Medicine*, 60, 1467-1478.
- Gross, E.F. (2004). Adolescent Internet use: what we expect, what teens report. *Applied Developmental Psychology*, 25, 633-649.
- Halpern, C. J. T., Udry, J. R., Suchindran, C., & Campbell, B. (2000). Adolescent males' willingness to report masturbation. *Journal of Sex Research*, 37, 327-332.

- Hopkins, K. W. (2000). Testing Reiss's autonomy theory on changes in non-marital coital attitudes and behaviors of U.S. teenagers: 1960–1990. *Scandinavian Journal of Sexology*, 3, 113–125.
- Huffaker, D. A., & Calvert, S. L. (2005). Gender, identity, and language use in teenage blogs. *Journal of Computer-Mediated Communication*, 10(2). Available at <http://jcmc.indiana.edu/vol10/issue2/huffaker.html>
- Larsson, I., & Svedin, C. G. (2002). Sexual experiences in childhood: Young adults' recollections. *Archives of Sexual Behavior*, 31, 263–273.
- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K., with members of the EU Kids Online network (2010). *Risks and safety on the internet*. The perspective of European children. Full findings and policy implications from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries.
- Lo, V.-h., & Wei, R. (2005). Exposure to internet pornography and Taiwanese adolescents' sexual attitudes and behavior. *Journal of Broadcasting & Electronic Media*, 49, 221-237.
- Lupač, P., & Sládek, J. (2008). The deepening of digital divide in the Czech Republic. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 1(2). Available at <http://cyberpsychology.eu/view.php?cisloclanku=2008060203>
- Peter, J., & Valkenburg, P. (2006). Adolescents' exposure to sexually explicit material on the Internet. *Communication Research*, 33, 178-204.
- Savin-Williams, R., & Diamond, L. (2004). Sex. In R. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 189–232). New York: John Wiley & Sons.
- Schwartz, I.M. (1999). Sexual activity prior to coital initiation: A comparison between males and females. *Archives of Sexual Behavior*, 28, 63–69.

- Smahel, D. (2003). Souvislosti reálné a virtuální identity dospívajících [Connections between the real and virtual identity of adolescents]. In P. Mareš, T. Potočný (Eds.), *Modernizace a česká rodina* [Families, children, and youth in the age of transformation] (pp. 315-330). Brno: Barrister & Principal.
- Smahel, D. (2006). *Czech adolescents' partnership relations and sexuality in the Internet environment*. Paper presented at the Society for Research on Adolescence Biennial Meeting. Available at <http://www.terapie.cz/materials/smahel-SRA-SF-2006.pdf>.
- Smahel, D., & Subrahmanyam, K. (2007). „Any girls want to chat press 911“: partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology & Behavior*, 10(3), 346-353.
- Subrahmanyam, K. (2007). Adolescent Online Communication: Old Issues, New Intensities. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 1(1). Available at <http://www.cyberpsychology.eu/view.php?cisloclanku=2007070701&article=%28search%20in%20Issues%29>
- Subrahmanyam, K., & Greenfield, P.M. (2008). Online communication and adolescent relationships. *Future of Children*, 18(1), 119-146. Available at http://futureofchildren.org/futureofchildren/publications/docs/18_01_06.pdf
- Subrahmanyam, K., Greenfield, P.M., & Tynes, B. (2004). Constructing sexuality and identity in an online teen chat room. *Applied developmental psychology*, 25, 651-666.
- Subrahmanyam, K. & Smahel, D. (2011). *Digital Youth: The Role of Media in Development*. Springer: New York.

- Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Connecting developmental constructions to the Internet: identity presentation and exploration in online teen chat rooms. *Developmental psychology*, 42, 395-406.
- Suzuki, L.K., & Calzo, J.P. (2004). The search for peer advice in cyberspace: an examination of online teen bulletin boards about health and sexuality. *Applied Developmental Psychology* 25, 685-698.
- Vybíral, Z., Smahel, D., & Divínová, R. (2004). Growing up in virtual reality – adolescents and the Internet. In P. Mareš (Ed.). *Society, reproduction, and contemporary challenges* (pp. 169-188). Brno: Barrister & Principal. Available at <http://www.terapie.cz/materials/czech-adolescents-internet.pdf>
- Weinberg, M. S., Lottes, I. L., & Shaver, F. M. (1995). Swedish or American heterosexual college youth: who is more permissive? *Archives of Sexual Behavior*, 24, 409–437.
- Weinstein, E., & Rosen, E. (1991). The development of adolescent sexual intimacy: implications for counseling. *Adolescence*, 26, 331–340.
- Weiss, P., & Zvěřina, J. (2001). Sexuální chování v ČR - situace a trendy [Sexual behavior in CZ - a situation and trends]. Praha: Portál.
- Weiss, P., & Zvěřina, J. (2004). *Sexuální chování v ČR: srovnání výzkumů z let 1993, 1998 a 2003* [Sexual behavior in CZ: a comparison of researches from 1993, 1998, 2003]. Available at <http://sex.systemic.cz/archive/cze/textbook2005/weiss2.pdf>
- Wolak, J., Mitchell, K.J., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national survey of youth internet users. *Pediatrics*, 119, 247-257.
- Ybarra, M.L., & Mitchell, K.J. (2005). Exposure to Internet pornography among children and adolescents: A national survey. *CyberPsychology & Behavior*, 8, 473-486.

Table 1. Frequency of individual sexual activities in real life and on the Internet

Sexual activities in real life	Yes	%	No	%
Kissing	402	90,1	44	9,9
Petting, embracing or caressing someone's intimate parts	350	78,8	94	21,2
Oral sex*	214	61,3	135	38,7
Sexual intercourse*	189	54,2	160	45,8
Sexual activities on the Internet	Yes	%	No	%
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	240	53,8	206	46,2
Talking with a known person (a friend or a partner) about sex	267	60	178	40
Talking with an unknown person about sex	101	22,7	343	77,3
Discussing one's own sexual experience with a known person (e.g. friend)	206	46,3	239	53,7
Discussing one's own sexual experience with an unknown person	77	17,3	368	82,7
Discussing with a known person their sexual experience	227	51	218	49
Discussing with an unknown person their sexual experience	90	20,2	355	79,8
Sending an erotic photo of yourself to someone	122	12,2	390	87,8
Receiving an erotic photo from someone	122	27,5	321	72,5
Having sex on the Internet	51	11,5	393	88,5

Note. * About 52 % respondents did not answer items examining experiences with oral sex and sexual intercourse.

Table 2. Differences in the degree of Internet use for sexual purposes compared to the level of sexual experience

		Sexually experienced vs. sexually inexperienced			
		N	M	Std. Deviation	t (df)
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	experienced	405	2,21	1,30	4,551***
	inexperienced	40	1,50	0,91	df(56)
Talking with a known person (a friend or a partner) about sex	experienced	404	2,49	1,34	9,720***
	inexperienced	40	1,30	0,65	df(78)
Talking with an unknown person about sex	experienced	403	1,42	0,84	6,834***
	inexperienced	40	1,05	0,22	df(192)
Discussing one's own sexual experience with a known person (e. g. friend)	experienced	404	2,04	1,22	11,440***
	inexperienced	40	1,13	0,33	df(177)
Discussing one's own sexual experience with an unknown person	experienced	404	1,33	0,75	8,714***
	inexperienced	40	1,00	0,00	df(403)
Discussing with a known person their sexual experience	experienced	404	2,15	1,23	7,755***
	inexperienced	40	1,28	0,60	df(77)
Discussing with a unknown person their sexual experience	experienced	405	1,37	0,79	9,452***
	inexperienced	40	1,00	0,00	df(403)
Sending an erotic photo of yourself to someone	experienced	403	1,22	0,61	7,158***
	inexperienced	40	1,00	0,00	df(402)
Receiving an erotic photo from someone	experienced	402	1,49	0,85	9,315***
	inexperienced	40	1,03	0,16	df(327)
Having sex on the Internet	experienced	403	1,21	0,63	6,556***
	inexperienced	40	1,00	0,00	df(402)

Note. *** significant at $p < 0.001$, ** significant at $p < 0.01$, * significant at $p < 0.05$

Table 3. Differences in the degree of Internet use for sexual purposes compared to the level of experience with kissing

		Experience with kissing vs. lack of this experience			
		N	Mean	Std. Deviation	t (df)
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	experienced	55	2,20	1,39	2,601*
	inexperienced	43	1,58	0,96	df(95)
Talking with a known person (a friend or a partner) about sex	experienced	54	1,83	1,15	2,161*
	inexperienced	43	1,40	0,85	df(95)
Talking with an unknown person about sex	experienced	53	1,19	0,74	n.s.
	inexperienced	43	1,09	0,37	df(94)
Discussing one's own sexual experience with a known person (e. g. friend)	experienced	54	1,46	0,97	2,4689*
	inexperienced	43	1,12	0,32	df(67)
Discussing one's own sexual experience with an unknown person	experienced	54	1,15	0,63	n.s.
	inexperienced	43	1,00	0,00	df(53)
Discussing with a known person their sexual experience	experienced	54	1,52	0,95	n.s.
	inexperienced	43	1,28	0,59	df(90)
Discussing with a unknown person their sexual experience	experienced	54	1,15	0,66	n.s.
	inexperienced	43	1,00	0,00	df(53)
Sending an erotic photo of yourself to someone	experienced	54	1,07	0,43	n.s.
	inexperienced	43	1,05	0,30	df(95)
Receiving an erotic photo from someone	experienced	53	1,17	0,61	n.s.
	inexperienced	43	1,09	0,37	df(95)
Having sex on the Internet	experienced	54	1,11	0,57	n.s.
	inexperienced	43	1,00	0,00	df(53)

Note. *** significant at $p < 0.001$, ** significant at $p < 0.01$, * significant at $p < 0.051$

Table 4. Differences in the degree of Internet use for sexual purposes compared to the level of experience with petting

		Experience with petting vs. lack of this experience			
		N	Mean	Std. Deviation	t (df)
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	experienced	108	1,78	1,39	-1,990*
	inexperienced	55	2,20	0,96	df(85)
Talking with a known person (a friend or a partner) about sex	experienced	108	2,14	1,15	n.s.
	inexperienced	54	1,83	0,85	df(160)
Talking with an unknown person about sex	experienced	108	1,15	0,74	n.s.
	inexperienced	53	1,19	0,37	df(159)
Discussing one's own sexual experience with a known person (e. g. friend)	experienced	108	1,69	0,97	n.s.
	inexperienced	54	1,46	0,32	df(160)
Discussing one's own sexual experience with an unknown person	experienced	108	1,11	0,63	n.s.
	inexperienced	54	1,15	0,00	df(160)
Discussing with a known person their sexual experience	experienced	108	1,71	0,95	n.s.
	inexperienced	54	1,52	0,59	df(160)
Discussing with a unknown person their sexual experience	experienced	108	1,19	0,66	n.s.
	inexperienced	54	1,15	0,00	df(160)
Sending an erotic photo of yourself to someone	experienced	108	1,03	0,43	n.s.
	inexperienced	54	1,07	0,30	df(160)
Receiving an erotic photo from someone	experienced	108	1,17	0,61	n.s.
	inexperienced	53	1,17	0,37	df(159)
	experienced	107	1,09	0,57	n.s.
Having sex on the Internet	inexperienced	54	1,11	0,00	df(159)

Note. *** significant at $p < 0.001$, ** significant at $p < 0.01$, * significant at $p < 0.05$

Table 5. Differences in the degree of Internet use for sexual purposes compared to the level experience with oral sex

		Experience with oral sex vs. lack of this experience			
		N	Mean	Std. Deviation	t (df)
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	experienced	48	2,42	1,40	2,742**
	inexperienced	111	1,80	1,03	df(70)
Talking with a known person (a friend or a partner) about sex	experienced	48	2,90	1,34	3,366***
	inexperienced	111	2,14	1,17	df(157)
Talking with an unknown person about sex	experienced	48	1,56	0,87	3,090**
	inexperienced	111	1,15	0,43	df(57)
Discussing one's own sexual experience with a known person (e. g. friend)	experienced	48	2,27	1,20	3,100**
	inexperienced	111	1,67	0,95	df(74)
Discussing one's own sexual experience with an unknown person	experienced	48	1,50	0,88	2,876**
	inexperienced	111	1,12	0,44	df(58)
Discussing with a known person their sexual experience	experienced	48	2,58	1,27	4,221***
	inexperienced	111	1,72	0,96	df(71)
Discussing with a unknown person their sexual experience	experienced	48	1,65	0,98	3,046**
	inexperienced	111	1,19	0,53	df(59)
Sending an erotic photo of yourself to someone	experienced	48	1,31	0,72	2,700**
	inexperienced	111	1,03	0,21	df(51)
Receiving an erotic photo from someone	experienced	47	1,51	0,80	2,830**
	inexperienced	111	1,16	0,39	df(56)
	experienced	48	1,27	0,61	n.s.
Having sex on the Internet	inexperienced	110	1,09	0,46	df(71)

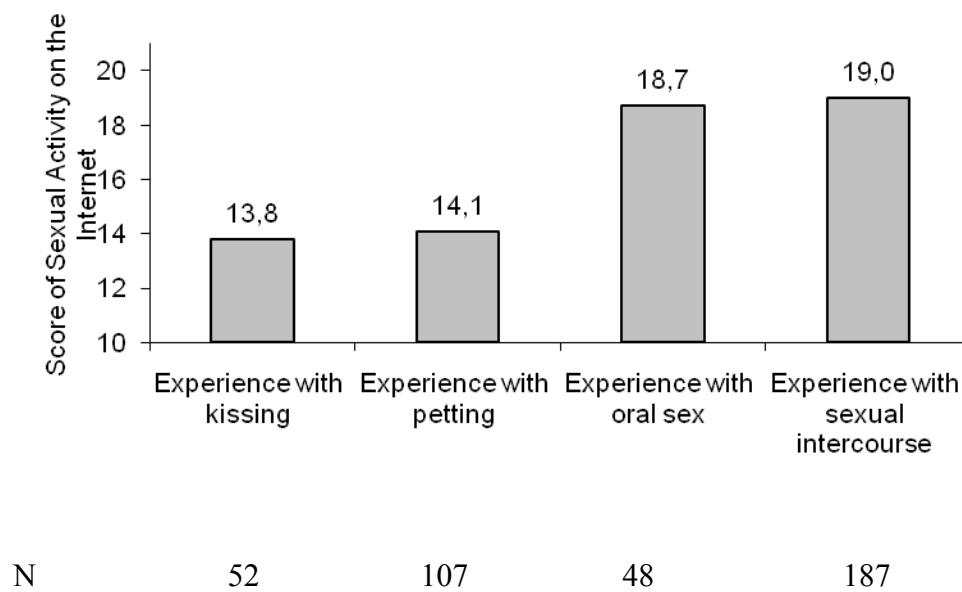
Note. *** significant at $p < 0.001$, ** significant at $p < 0.01$, * significant at $p < 0.05$

Table 6. Differences in the degree of Internet use for sexual purposes compared to the level of intercourse experience

		Experience with sexual intercourse vs. lack of this experience			
		N	Mean	Std. Deviation	t (df)
Access information related to sex (guidelines, problems etc., not erotic videos or photos)	experienced	188	2,41	1,34	3,114**
	inexperienced	159	1,99	1,19	df(344)
Talking with a known person (a friend or a partner) about sex	experienced	188	2,79	1,38	2,937**
	inexperienced	159	2,37	1,27	df(345)
Talking with an unknown person about sex	experienced	188	1,62	0,98	3,919***
	inexperienced	159	1,28	0,63	df(345)
Discussing one's own sexual experience with a known person (e. g. friend)	experienced	188	2,39	1,31	4,241***
	inexperienced	159	1,85	1,06	df(344)
Discussing one's own sexual experience with an unknown person	experienced	188	1,46	0,86	2,869**
	inexperienced	159	1,23	0,63	df(337)
Discussing with a known person their sexual experience	experienced	188	2,48	1,29	3,834***
	inexperienced	159	1,98	1,13	df(344)
Discussing with a unknown person their sexual experience	experienced	188	1,48	0,87	n.s.
	inexperienced	159	1,33	0,72	df(344)
Sending an erotic photo of yourself to someone	experienced	187	1,35	0,74	3,688***
	inexperienced	159	1,11	0,45	df(313)
Receiving an erotic photo from someone	experienced	188	1,77	1,02	5,752***
	inexperienced	158	1,27	0,57	df(3302)
	experienced	188	1,29	0,73	2,116*
Having sex on the Internet	inexperienced	158	1,15	0,52	df(335)

Note. *** significant at $p < 0.001$, ** significant at $p < 0.01$, * significant at $p < 0.05$

Figure 1. Differences in overall sexual activity on the internet



Study III

Ševčíková, A., Vaznonyi, A., Konečný, Š., & Širůček, J. (under review). Brief report: Predictors of online and offline sexual activities and behaviors among adolescents. *Journal of Adolescence*.

Abstract

Despite the fact that many adolescents spend a lot of time online, both who engages in sexually related online activities (SROA) and the effects these have on adolescent sexual development are unknown. This longitudinal study on 323 adolescents (51.1% girls) aimed to explore how peer attachment processes predicted both SROA and offline sexual behaviors at age 17 in order to elucidate potential similarities or differences. Sex, pubertal status, and prior offline sexual experiences were also considered. Findings based on hierarchical logistic regression analyses revealed that SROA were predicted by, alienation from peers, advanced pubertal development, and previous offline sexual experiences. Offline sexual behaviors at age 17 were only predicted by previous offline sexual experiences. This study's findings indicated that the internet does impact adolescent sexual development by providing an additional context for exposure.

Keywords: adolescent sexuality, Czech Republic, internet, peer attachment, peer relationships, puberty, youth

Introduction

Internet use has become an integral part of adolescent life. In contrast to traditional media it offers both specific content and the opportunity to interact with others. Its features, in particular anonymity and access to sexual content, make it a unique venue for the exploration of adolescent sexuality and reduce the risk of personal or social sanctions (Daneback & Ross 2011). Although evidence exists on how adolescents use the internet for sexual purposes

(Subrahmanyam & Šmahel, 2011), it remains largely unknown who engages in sexual-related online activities (SROA) and to what extent.

It is known that adolescent sexuality is closely linked to peers and peer interaction (Brown, Feiring, & Furman, 1999). Following Connolly and Goldberg's (1999) concept of the development of romantic relationships, the first erotic contact occurs between the ages of 14 to 16, a time when youth initially meet potential partners in the context of larger mixed-gender groups. Sexual activity becomes more prevalent between the ages of 17 to 20 when the focus of peer groups shifts to intimate dyads. Previous work has documented that the quality of peer relations and subsequent romantic relationships are closely related to a trust attachment which predicts later sexual onset (Connolly & Goldberg, 1999; Crockett et al. 1996).

The internet seems ideal for relationship formation and for establishing close online relations, particularly for youth who experience relationship problems (Wolak, Mitchell, & Finkelhor, 2003). The absence of social cues online lead users to express their "true" selves and idealize their online partner which increases relationship satisfaction (Bargh & McKenna, 2004). This implies that trust attachment between peers may not be the only predictor useful in terms of understanding how and when sexual activities occur online. Specifically, adolescents with weak attachments to peers may turn to the internet to engage in SROA.

Using longitudinal data, the current study aimed to examine the extent to which the quality of peer attachment predicted SROA, while also considering sex, pubertal status, and previous offline sexual behaviors. More generally, the focus was on understanding what predicted SROA, while also examining the same for offline sexual behaviors.

Methods

Sample

The data was collected in the Czech Republic as part of the European Longitudinal Study of Pregnancy and Childhood (ELSPAC) which started in 1991. Here a Czech subsample from ELSPAC was used, made up of all the children with residential addresses in the city of Brno, born between March 1st (1991) and June 30th (1992), approximately $N = 5000$ families. Starting in 1999, 883 children and their parents periodically, when the children were aged 8, 11, 13, 15 and 17 years, participated in a broader psychological assessment. Over time, a number of families dropped out. The present study included 323 Caucasian adolescents (51.1% girls) who completed surveys at both 15 and 17. Respondents who agreed to participate were invited to visit the research institute to complete both a written and a computer-administered questionnaire.

Measures

Peer attachment at age 15

The quality of peer attachment was assessed using the Experienced Peer Relationships Scale which comprised three 5-point-subscales measuring trust (12 items; $\alpha = .87$, $M=4.01$, $SD=.56$), alienation (13 items; $\alpha = .82$, $M=1.66$, $SD=.41$), and ambivalence (6 items; $\alpha = .57$, $M=1.96$, $SD=.53$) (Širůček & Širůčková 2008). Subscales of trust and alienation were validated with the Inventory of Parent and Peer Attachment (Armsden & Greenberg 1987). The correlation for trust was 0.77 and the correlation for alienation was 0.59. The measured scale scores were computed by averaging the items of each subscale; higher scores indicated greater attachment (see the appendix).

Pubertal status and offline sexual behavior at age 15

Pubertal status was assessed by a single question asking adolescents to rate whether they perceived their bodies to be like those of a child's (1), like those of an adolescent's (2) or like those of a woman's/man's (3); a higher score indicated a more advanced pubertal status ($M=2.15$, $SD=.40$). Offline sexual behaviors at age 15 were measured by five dichotomous

items (0=no, 1=yes) asking whether they had ever (1) kissed, (2) necked, (3) petted or caressed intimate body parts, (4) had vaginal intercourse, or (5) had oral sex. The composite scores were computed by summing all the items. A higher score indicated more sexual experiences ($\alpha = .74$, $M = 1.90$, $SD = 1.40$).

SROA

At age 17, respondents were asked whether they had ever done any of the following nine behaviors: talked about sex with somebody known / somebody unknown; discussed their own sexual experiences with somebody known / somebody unknown; discussed somebody's sexual experiences with them, somebody known / somebody unknown; received erotic photos from somebody; sent their own erotic photos to somebody; and had "sex on the Internet." Although a 5 point Likert-type scale was used, ranging from "never" (1) to "at least once a week" (5), ratings were re-coded as (0) "no" and (1) "yes". This was due to the low frequencies of scores and the high positive skew. Those who had online experiences were coded as 1; those with none were coded as 0.

Offline sexual behaviors at age 17

Offline sexual behaviors at age 17 were measured by four dichotomous items (0=no, 1=yes) asking whether they had ever kissed, petted or caressed someone's intimate body parts, had oral sex, or had vaginal intercourse. Those who had any offline experiences were coded as 1, while those who lacked these experiences were coded 0.

Results

At age seventeen, 21 respondents (7%) reported no sexual experiences (this result was the same at age 15), while 49 respondents (15%) reported only offline experiences; 227 respondents (70%) reported both offline and online experiences, and only 8 respondents (3%) engaged only in SROA. Correlations were then computed between the main study constructs

(Table 1). Except for gender, all hypothesized predictors were significantly associated with either SROA or offline sexual behaviors at age 17.

--- Table 1 ---

Two hierarchical binary logistic regression analyses were then completed. Peer attachment (trust, alienation, and ambivalence) were entered in the first step, with puberty and offline sexual behaviors at age 15 in the second. The first analysis predicted SROA using a comparison between all youth who reported engaging in any SROA at age 17 and those who had no experiences with SROA. In the second analysis, which predicted offline sexual behaviors at age 17, all youth who had any offline sexual experience at age 17 were compared with those who had no such experiences.

--- Table 2 ---

The initial model step showed that both stronger peer trust and alienation attachment to peers predicted SROA, while in the second step greater alienation from peers ($OR = 3.36, p < .05$), advanced pubertal status ($OR = 2.08, p < .05$), and previous offline sexual experiences ($OR = 1.75, p < .001$) were significant. In the initial model step for offline sexual behavior at age 17 peer trust was significant, whereas in the second step only previous offline sexual experiences ($OR = 6.04, p < .001$) were significant.

Discussion

Alienation attachment to peers, pubertal status, and prior offline sexual experiences predicted SROA in adolescence, while offline sexual behavior at age 17 was only predicted by prior sexual experiences. Although quality of attachment was only able to explain to a small extent the variability in SROA, alienation has been found to be an important factor. Adolescents are expected to use their emotional and cognitive capacity to establish and maintain relations with their peers and to acquire experience with erotic relationships (Havighurst, 1948; Macek, 2003). The internet seems to help adolescents with poor peer

relationships to overcome barriers and find someone with whom to sexually interact. This complements prior results which showed a link between adolescents with poor relations to parents, and establishing close online relationships (Wolak et al., 2003).

Advanced pubertal status also predicted SROA. A similar finding was revealed for passive use of the internet for sexual purposes in adolescence, specifically for exposure to online sexually-explicit materials (Peter & Valkenburg, 2006). It may be that differences in the timing of pubertal development lead those with advanced pubertal status to turn to the internet to discuss sexual issues as their less developed offline peers might lack interest in sexuality. But it is also possible that internet use for sexual purposes has generally become an ordinary part of adolescence for those with advanced physiological changes.

Prior offline sexual experiences seem generally to be an important characteristic of those who engaged in SROA and were sexually active at age 17. However, a lack of data on SROA at younger ages prevents a conclusion as to whether SROA is an outcome of prior offline sexual experiences or vice versa.

This study has several limitations which need to be mentioned. Firstly, a single-item measure of puberty was used. Further, small sample sizes limited the use of multinomial regressions which would have allowed the analysis of differences in predictors of SROA and offline sexual behaviors. Despite these limits, this study's findings indicate that the internet does impact adolescent sexual development by providing an additional context for exposure.

References

- Armsden, G. C. & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, 16, 427-454. doi: 10.1007/BF02202939
- Brown, B.B., Feiring, C., & Furman, W. (1999). Missing the love boat: why researchers have shied away from adolescent romance. In W. Furman, B.B. Brown, C. Feiring (Eds.),

- The development of romantic relationships in adolescence* (pp. 1-16.). New York: Cambridge University Press.
- Bargh, J.A., & McKenna, K.Y.A. (2004). The Internet and social life. *Annual Review of Psychology*, 55, 573-590. doi: 10.1146/annurev.psych.55.090902.141922
- Connolly, J., & Goldberg, A. (1999). Romantic relationships in adolescence: The role of friends and peers in their emergence and development. In W. Furman, B. B. Brown & C. Feiring, (Eds.), *The Development of romantic relationships in adolescence* (pp. 266–290). New York: Cambridge University Press.
- Crockett, L.J., Bingham, C.R., Chopak, J.S., & Vicary, J.R. (1996). Timing of first sexual intercourse: The role of social control, social learning, and problem behavior. *Journal of Youth and Adolescence*, 25, 89-111. doi: 10.1007/BF01537382
- Daneback, K., & Ross, M.W. (2011). The complexity of internet sexuality. *Advances in Psychosomatic Medicine*, 31, 121-134. doi: 10.1159/000328920
- Furman, W., Brown, B.B., & Feiring, C. (Eds.) (1999). *The development of romantic relationships in adolescence*. New York: Cambridge University Press.
- Havinghurst, R.J. (1948). *Developmental tasks and education*. New York: McKay.
- Macek, P. (2003). *Adolescence: psychologické a sociální charakteristiky dospívajících*. [Adolescence: psychological and social characteristics of adolescents]. Praha: Portál.
- Peter, J., & Valkenburg, P. M. (2006). Adolescents' exposure to sexually explicit material on the Internet. *Communication Research*, 33, 178-204. doi:10.1177/0093650205285369
- Širůček, J., & Širůčková, M. (2008). Experienced relationships with peers. In S. Ježek & L. Lacinová (Eds.), *Fifteen-year-olds in Brno: A slice of longitudinal self-reports* (pp. 13-18). Brno: Masaryk University.
- Subrahmanyam, K., & Šmahel, D. (2011). *Digital youth: The role of media in development*. New York: Springer. doi: 10.1007/978-1-4419-6278-2_3

Wolak, J, Mitchell, K. J., & Finkelhor, D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence*, 26, 105-119. doi: 10.1016/S0140-1971(02)00114-8

Appendix

Table 1.Descriptive statistics.

	N	%	M (SD)	Range
Sex Gender	323	51.1 (boys)		
Peer attachment-trust	323		4.01(0.56)	1.5
Peer attachment-alienation	323		1.66 (0.41)	1.5
Peer attachment-ambivalence	323		1.96 (0.53)	1.5
Puberty	306		2.15 (0.40)	1.3
Offline sexual behaviour at age 15	316		1.90 (1.40)	0-1
SROA	235			
Offline sexual behaviour at age 17	276			

Peer attachment

Peer attachment-trust

The dimension of trust comprises twelve items on 4-point Likert scale from never to always. It concerns the experience of reciprocity, trust, respect and helpfulness of others and toward others. As a result, it indicates the possibility of drawing the social support in the sense of emotional security and acceptance.

1. They are concerned about what I do.
2. They take me seriously. - 3. They understand me.
4. Their opinions are important for me.
5. I make time for them when they need it.
6. I would do anything for them.
7. My friends respect my feelings.
8. I can open up to them.
9. They can be honest to me.

10. They are with me when I feel lonely.

11. I tell them the truth.

12. They listen to me when I need it.

Peer attachment-alienation

The dimension of alienation comprises thirteen items on 4-point Likert scale from never to always.. It contains curses, slander, mockery, ignorance, lies, direct rejection of the contact, etc. Thus, above all, it contains direct demonstration of conflict and interpersonal aggression.

1. They try to decide for me.

2. They bad-mouth me.

3. They lie to me.

4. They express disapproval of my behavior.

5. If I ask them for anything, they make excuse. 6. I bad-mouth them.

7. We argue with each other.

8. They call me names.

9. They refuse me.

10. When they organize something, they do not let me know about it.

11. They make fun of me.

12. They ignore me when I suggest something.

13. They react aggressively if I tell them something they do not like.

Ambivalent attachment to peers

The dimension of ambivalence been examined in this way so far and comprises six items, pointed at comparison with others and fears of their loss or abandonment. At the same time,

there is a submissive position and higher evaluation of others in comparison with oneself present. Ambivalence was measured on 4-point Likert scale from never to always.

1. I conform to them.
2. I'm afraid I could lose them.
3. I am afraid they will betray me.
4. I am afraid they are ashamed of me. Mám strach, že se za mne stydí.
5. They are better than me in every way.
6. I am ashamed in front of them.

Table 1. Correlations among main study constructs.

	1	2	3	4	5	6	7
1. Peer attachment – trust							
2. Peer attachment– alienation	-.46*						
3. Peer attachment– ambivalence	-.02	.46*					
4. Puberty	.10*	-.01	.01				
5. Offline sexual behaviors at age 15	.13*	.00	-.01	.13*			
6. Sex	.36*	-.13	.12*	.23*	.01		
7. SROA	.05	.12*	.12*	.17*	.29*	-.01	
8. Offline sexual behaviors at age 17	.12*	-.01	-.04	.08	.39*	-.03	.31*

* $p < .05$, two-tailed.

Table 2. Hierarchical logistic regressions predicting SROA and offline sexual behaviors at Age 17.

	No SROA experience (N=65) ^a			No off-sexual behaviors at age 17 (N=27) ^a		
	SROA experience (N=218)		R ^{2a} χ^2	Off-sexual behaviors at age 17 (N=256)		R ^{2a} χ^2
	<i>B</i> (<i>SE</i>)	<i>OR</i> (95% <i>CI</i>)		<i>B</i> (<i>SE</i>)	<i>OR</i> (95% <i>CI</i>)	
<i>Step 1</i>			.07 11.44			.05 9.30
Peer attachment – trust	.69(.30) *	1.99[1.11-3.52]		.96(.38) *	2.61[1.24-5.51]	
Peer attachment – alienation	1.35(.52)**	3.85[1.40-10.55]		.92(.66)	2.51[.69-9.06]	
Peer attachment – ambivalence	.25(.31)	1.28[.69-2.37]		-.50(.42)	.61[.27-1.40]	
Constant	-4.23(1.74)*			-2.10(2.17)		
<i>Step 2</i>			.21 7.95			.41 2.60
Peer attachment – trust	.54(.32)	1.71[.91-3.23]		.74(.51)	2.09[.77-5.65]	
Peer attachment – alienation	1.23(.55)*	3.31[1.17-9.35]		.55(.79)	1.73[.38-8.12]	
Peer attachment – ambivalence	.42(.34)	1.53[.78-2.98]		-.28(.48)	.76[.30-1.94]	
Puberty	1.03(.45)*	2.08[1.17-6.75]		.50(.72)	1.65[.40-6.23]	
Offline sexual behaviors-age 15	.56(.13)***	1.75[1.45-2.27]		1.80(.36)***	6.04[3.00-12.16]	
Constant	-6.08(2.09)***			-3.78(3.00)		

Note. a = reference category. B = unstandardized regression coefficient. SE = standard error. OR = odds ratio. CI = confidence interval for OR. a = Nagelkerke.

χ^2 = Hosler-Lemeshow fit index.

*** p < .01

** p < .01

* p < .05

Study IV

Ševčíková, A., Šerek, J., Macháčková, H., & Šmahel, D. (under review). The extent matters: Exposure to sexual material among Czech adolescents. *Journal of Early Adolescence*.

Abstract

Adolescents grow up surrounded by media which exposes them to risks such as contact with sexual material. This study focused on youths in the Czech Republic, a country with increased rates of exposure to sexual material. It examined how predictors of exposure varied with the extent of the exposure. A sample of adolescents aged 11 to 15 years (N=610) from the project EU Kids Online II was used. Sporadic exposure was linked to age and excessive internet use, while frequent exposure was linked to age, gender, sensation seeking, and excessive internet use. Almost analogous differences were found between exposure only offline, only online, and in both environments; age and excessive internet use predicted exposure only online, while age, excessive internet use, gender, emotional problems, and sensation seeking predicted exposure in both environments. Concern should be focused on the extent to which Czech adolescents encounter sexual material, rather than exposure rates.

Keywords: internet; sexual content; traditional sexual media; early adolescence; EU Kids Online II

Introduction

The exposure of young people to sexual material is a common concern evoked by the presence of media. Traditional sources of sexual material (magazines, videos) have been expanded since the internet has become an integral part of adolescents' lives, providing nearly unlimited access to sexual material (Subrahmanyam & Šmahel, 2011). As high levels of exposure at a young age can have broad negative effects on an adolescent's sexuality and well-being (L'Engle, Brown & Kenneavy, 2006), it is important to examine which young adolescents are at risk of exposure to sexual material and to what extent.

This issue is especially topical in the Czech Republic where heightened rates of exposure to offline and online sexual material have been found among adolescents (Livingstone, Haddon, Görzig, & Ólafsson, 2011a). The EU Kids Online II survey showed that Czech adolescents aged 9 to 16 years had the second highest rate of exposure to offline or online sexual material among 25 European countries (Livingstone et al., 2011a). Forty-five per cent of all Czech adolescent internet users had seen sexual images either offline or online, 28% having seen these on the internet. In comparison, Germany, a neighbouring country, had the lowest rate of exposure to sexual material, only 10% having been exposed, with 4% being exposed online.

These findings provide evidence that almost half of all Czech adolescent internet users aged between 9-16 years have seen sexual material (Livingstone et al., 2011a) and this trend continues with advancing age. Czech emerging adults (aged 19 to 21 years) reported the highest rate of exposure to online sexual material when compared with six other countries, the USA, Canada, Singapore, New Zealand, Hungary, and China (Subrahmanyam & Šmahel, 2011). This suggests a need for deeper analysis into what this prevalence means, who tends to encounter sexual material and to what extent.

The context of growing up in the Czech Republic

The Czech Republic is a transitional post-communist country in Central Europe with a 40-year history of a communist establishment. This period was ended by the “Velvet revolution” in 1989 which produced large scale cultural changes resulting in intergenerational differences in Czech society (Marada, 2004). With regard to values, Kalmus and Vihalem (2008) found that the younger Czech generation is more global-minded and has adopted values related to liberalism and consumerism than the older generation. It is worth noting that liberalism influences sexual behaviour. Specifically, it has been found that Czech attitudes towards sexual behaviour are more liberal and less restrictive than in Western European and American societies, and that their sexual attitudes show patterns of continuous liberalisation across generations (Weiss & Zvěřina, 2001).

As well as its historical and cultural transformations, Czech society has also undergone changes caused by the large scale penetration of information and communication technologies. Young people have markedly adopted the internet. In 2007, 93% of Czech youth aged 12-18 years used the internet while only 63% of Czech adults aged 34-40 were internet users (Lupač & Sládek, 2008). However, Czech adolescents seem to lack proper parental control in this area in comparison with other European youths. Czech parents were found to be relatively passive in terms of adopting mediation strategies for internet use and internet safety; social, monitoring, restrictive mediation and using technical solutions were less frequently present when compared with the European average (Kalmus & Roosalu, 2012).

Based on the above, Czech adolescents live in a specific context characterised by liberalised norms on sexuality, a generational gap in internet use, and less parental supervision

over internet use. This combined may shape their everyday life affecting their exposure to sexual material.

Predictors of exposure to sexual material

Generally, exposure to sexual material can be perceived as a developmentally determined phenomenon. With increasing age interest in sexual material may become more normative, as during adolescence a child becomes a sexually reproductive adult. Previous studies have shown older adolescents tend to consume sexual material off or online more often than younger internet users (Brown & L'Engle, 2009; Wolak, Mitchell & Finkelhor, 2007; Ybarra & Mitchell, 2005).

Like sexual development, gender has also been found to be a relevant predictor of having been exposed to sexual material; specifically adolescent boys were more likely to encounter sexual material than girls (Peter & Valkenburg, 2006; Ybarra & Mitchell, 2005).

Besides the aforementioned demographic characteristics, scholars have also shown relations between psychosocial difficulties and exposure to sexual material (Ybarra & Mitchell, 2005; Wolak et al., 2007). Wolak et al. (2007) found that those adolescents reporting depression and negative life experiences were more likely to encounter sexual material on the internet. Since emotional problems may increase adolescents' tendencies to expose themselves to risks (Ethier, Kershaw, Lewis, Milan, Niccolai, & Ickovics, 2006), this study proposes to explore whether young adolescents with emotional problems will be more likely to encounter sexual images.

Further, previous studies provided evidence that heightened sensation seeking among adolescents increased the likelihood of exposure both off and online (Brown & L'Engle, 2009; Peter & Valkenburg, 2006). At a young age, accessing forbidden sexual material may be highly stimulating as it is a novel experience.

Several scholars have also proposed a link between excessive internet use and accessing sexual material online (Meerkerk, Eijnden, & Garretsen, 2006; Shapira et al., 2003) as sexual material can be addictive (Meerkerk et al., 2006). Excessive or problematic internet use (Widyanto & Griffiths, 2007) manifests through the following symptoms: salience, when the activity becomes a crucial part of daily life; euphoria caused by the activity; tolerance, the need to increase the activity to achieve the original sensation; withdrawal symptoms; conflict, usually with those closest to the individual; and relapse (Griffiths, 2000; Widyanto & Griffiths, 2007). Despite its importance, most of the studies on the link between excessive internet use and sexual material have focused on adult samples. There is a lack of research on younger age groups, specifically on adolescents who can also be at risk of excessive internet use (e.g. Van den Eijnden, Meerkerk, Vermulst, Spijkerman, Engels, & Rutger, 2008). Furthermore, it appears that no previous study has focused on revealing the strength of excessive internet use as a predictor of sexual exposure to online material among young adolescents.

Interest in sexuality begins to emerge during early adolescence, however, not all adolescents are focused on this issue and are at risk of excessive internet use for sexual purposes; thus exposure may not essentially be linked to pathological internet use. Therefore, it is also possible to consider that exposure may arise from non-problematic internet use, and occur due to an increased amount of time spent online (see Mitchell et al., 2003). The frequency with which an adolescent uses the internet may also relate to their access to the internet, and thus to the material resources of the adolescent's family and their socioeconomic status.

Diversity in exposure to sexual material

Previous studies have documented that exposure to sexual material can occur in many forms which are consequently linked to different predictors (see Mitchell et al., 2003; Wolak

et al., 2007; Ybarra & Mitchell, 2005). For instance, in terms of unintentional and intentional exposure, experience with harassment, online sexual solicitation, offline interpersonal victimisation, and depression have been found to be predictors of unintentional exposure. Intentional exposure has been linked to males, rule breaking behaviours, and potentially risky internet practices such as using file-sharing programs, and talking about sex with an unknown person (Mitchell et al., 2003; Wolak et al., 2007). Likewise, differences were revealed in the predictors of online and offline exposure. Increased levels of depression and weaker emotional bonding with a caregiver were linked to exposure to sexual material occurring both off and online together, but they did not predict exposure which occurred only offline (Ybarra & Mitchell, 2005). These findings suggest that there are qualitative differences in the predictors that foretell different forms of exposure.

In the Czech Republic, where a large proportion of adolescents have seen sexual material both off and online (Livingstone et al., 2011a), it seems important to focus on the extent of this exposure (e.g. in terms of frequency or place of exposure), and whether the predictors of exposure vary depending on the extent to which they have been exposed. In addition, it seems that no study has yet focused on exploring the predictors of varying extents of exposure to sexual material.

The extent of exposure to sexual material

The extent of exposure to sexual material can be operationalised in several ways. The first deals with the frequency of exposure. Due to the increased accessibility of the internet in everyday life, and websites which use malicious software such as pop-up windows (Wolak, Mitchell, & Finkelhor, 2006), there may be a wide spectrum of experience with exposure to sexual material at young ages. This experience can range from frequent, through sporadic, to never.

The extent of exposure can also be defined through the places where exposure occurred. Whether the adolescent encountered sexual material only offline (through traditional media, such as magazines, TV or videos), only online, or in both environments can be crucial. Previous studies have shown that exposure to sexual material in media other than the internet was strongly related to exposure to sexually explicit material online (Peter & Valkenburg, 2006). This indicates that exposure to sexual material both off and online simultaneously may represent greater exposure than when exposure occurs in only one forum.

Similarly, with the integration of the internet into everyday life, the range of online applications where sexual material is easily accessible has expanded. For instance, it has been documented that adolescents encountered sexual material through X-rated websites (Wolak et al., 2007), peer-to peer file-sharing networks (Greenfield, 2004), pop-up advertisements (Wolak et al., 2007) and social network sites (Ringrose, 2010). This list shows that young adolescents can use various online applications, based on their interests, while browsing the internet. This in turn may result in multiple incidences of exposure to sexual material, both sought and unsought.

Previous studies have compiled sufficient information about the link between psychosocial risks and premature sexual activities (Bearman & Brückner, 2001; Bellis, Hughes, Calafat et al., 2008; Kuortti & Kosunen, 2009; Orr, Beiter, & Ingersoll, 1991). Mostly, premature sexual activity is represented by the early onset of sexual behaviour. However, in today's digital age premature sexual activity may be expanded to include visiting sexually-focused websites and greater exposure to sexual material. As an association between early sexual activity and concomitant psychosocial risks has been found (Orr et al., 1991), it is hypothesised that risk related predictors will be more strongly related to frequent exposure, exposure in both on and offline environments and visiting sexually focused websites than sporadic exposure and only offline or only online exposure or exposure on non-sexually

focused websites. More precisely, frequent exposure, exposure in both environments, and exposure on sexually focused websites will have a stronger connection to emotional problems, sensation seeking, and excessive internet use than the remaining categories mentioned above.

Research aim

Recognising the particularities of the Czech cultural context, the present study aimed to develop a greater understanding of the extent to which Czech young adolescents encountered sexual material, and which predictors were related to sporadic and frequent exposure to sexual material. It also sought to discover where the exposure occurred, only offline, only online or in both environments, while controlling for age, gender, socio-economic status and frequency of internet use. Finally, this study aimed to explore variability in the predictors of exposure across different online applications, such as X-rated websites, peer-to peer file-sharing websites, pop-up websites, and social network sites.

Methods

Participants

This study used data from the international research project EU Kids Online II coordinated by the London School of Economics and Political Science. The project aimed to enhance the knowledge of European children's and parents' experiences and practices regarding risky and safer use of the internet and new online technologies. This study was conducted from April to October 2010 across 25 European countries, where 25,142 children aged 9-16 years were interviewed together with their parents.

In the Czech Republic a registered directory of fixed line telephones was used for the selection of a representative sample. For the sample selection, municipalities and postal districts for cities with populations over 50,000 were used as a primary sampling unit. The sample was stratified by: (1) region using nomenclature of territorial units for statistics, specifically NUTS 3 (see Eurostat, 2010); (2) level of urbanisation, total number of

inhabitants in municipalities or postal districts. Households which had been selected randomly from the register were contacted via telephone and screened for their eligibility to participate in the study, i.e. being a residential/occupied household with a child aged 9-16 years who used the internet. A total number of 1,438 eligible households were identified, of which 70% (N = 1009) successfully participated in the research. For the purposes of the present research, the total sample was narrowed to Czech young adolescents aged 11-15 years (N = 610; 48 % boys). Due to missing answers on some items, however, data from 495 (or 483) participants were used in the analyses.

Procedure

Data gathering was performed via a survey, conducted by the market research company Ipsos MORI, which was commissioned to work with EU Kids Online, and who contracted a national fieldwork agency in the Czech Republic. An agency interviewer went into each preselected household and collected data from the child using an interviewer-administered questionnaire and a self-completion paper-based questionnaire which focused on sensitive information such as online risks and psychological self-evaluation. In households where more than one eligible child was present, one child per household was selected, based on the most recent birthday. The child's parent also participated in the survey using an interviewer-administered questionnaire. Where both parents were present, the parent who spent the most time with the child participated. The research was conducted in accordance with ESOMAR ethical guidelines, and approved by the London School of Economics Research Ethics Committee. Confidentiality and anonymity were guaranteed, and all relevant information and questions were explained to both the parents and the children involved. Also, the parent was in the vicinity while the child had their face to face interview and filled in the self-completed questionnaire.

Measures

The questionnaires for children and parents were developed by members of the EU Kids Online team with guidance from Ipsos MORI, and were further tested and refined by a two-phase process of cognitive interviewing and pilot testing (for further details see Livingstone et al., 2011b).

Frequency of exposure to sexual material. Two questions were used to measure the frequency of exposure to sexual material. Children were asked about their experience with exposure to sexual material in general. First, the participants were questioned on their experience with exposure using the dichotomous response scale: “In the past year, you have seen lots of different images – pictures, photos, videos. Sometimes, these might be obviously sexual – for example, showing people naked or people having sex. Have you seen anything of this kind in the past 12 months?” Those who answered “yes” were then asked: “How often have you seen these things in the past 12 months?” a single four-point scale with categories “every day or almost every day; once or twice a week; once or twice a month; and less often” was used to measure frequency of exposure (the place of exposure – whether offline or online was not distinguished). Using these two questions, three categories were developed. All participants who answered “no” to the first question were coded as having “no exposure” (= 0), the participants who answered “yes” to the first question and “less often” to the second question were coded as having “sporadic exposure” (= 1), and the participants who answered “yes” to the first question and “every day or almost every day”, “once or twice a week” or “once or twice a month” to the second question were coded as having “frequent exposure” (= 2). This categorisation reflected the fact that the answers on the four-point frequency scale were positively skewed and non-normally distributed (Shapiro-Wilk(236) = 0.77, $p < .01$).

Place of exposure to sexual material. All participants who reported exposure were asked a dichotomous question on the place of offline exposure: “In which, if any, of these places have you seen these kinds of things?” (a) “In a magazine or book”, (b) “On television,

in a film or a video/DVD”. They were then asked a dichotomous question on online exposure: “Have you seen these kinds of things on any websites in the past 12 months?” Those who reported exposure to sexually explicit material in a magazine, book, on television, in a film or a video/DVD, but not on websites, were coded as having “only offline exposure” (= 1). Those who reported exposure only on websites were coded as having “only online exposure” (= 2). Those who reported exposure both on websites and in a magazine, book, on television, in a film or a video/DVD were coded as having “both offline and online exposure” (= 3). Again, the participants with “no exposure” (= 0) were identified through the dichotomous question: “In the past year, you have seen lots of different images. Sometimes, these might be obviously sexual – for example, showing people naked or people having sex. Have you seen anything of this kind in the past 12 months?”.

Type of online exposure to sexual material. Participants who had been exposed online were asked: “Which types of website have you seen things like this on in the past 12months?”. The adolescents could tick any of the following alternatives: (a) “On a social networking site”, (b) “In images that pop-up accidentally”, (c) “On an adult/X-rated website”, (d) “On a peer to peer file-sharing website (e.g. limewire)”, and (e) “Other”. Based on their answers they were divided into three mutually exclusive categories. The category “Only in images that pop-up accidentally” (= 0) included those who ticked this option only. The second category “On a social networking site” (= 1) captured those who ticked this option itself or together with the option “In images that pop-up accidentally”. Finally, participants who ticked the options “On an adult/X-rated website” and/or “On a peer to peer file-sharing website”, irrespective of whether they ticked any other options, were included in the third category (= 2). Those who answered “Other” or did not specify the type of online exposure were excluded from the categorisation.

Socio-economic status (SES). During the preceding screening process information relating to the chief income earner's level of education and occupation was gathered. This information was grouped and cross-referenced to calculate three-level socio-economic statuses: low (=0), middle (=1) and high (=2). As educational systems vary across countries, national measures were standardised using the International Standard Classification of Education (ISCED). Then, in the main survey, the parent interviewed was only asked about the highest level of completed education in the household based on which the level of SES of the household unit was assigned (for further details, see Livingstone et al., 2011b).

Frequency of internet use. Next, how often adolescents used the internet was assessed. Respondents were asked: "How often do you use the internet?" with possible answers being: "less than once a month" (= 1), "once or twice a month" (= 2), "once or twice a week" (= 3), "every day or almost every day" (= 4). This scale was treated as continuous, higher scores indicating more frequent internet use.

Emotional problems. Six items were used to capture participants' emotional problems which were derived from the Strength and Difficulty Questionnaire (Goodman, Ford, Simmons, Gatward, & Meltzer, 2003). Respondents were asked "How true is this of you?" with response alternatives (a) "having a lot of headaches, stomach-aches or sickness"; (b) "being very angry and often losing their temper"; (c) "often feeling unhappy, sad or tearful", (d) "being nervous in new situations and easily losing confidence"; (e) "being easily distracted and finding it difficult to concentrate"; and (f) "having many fears, being easily scared". The three-point response scale was used: "not true" (= 1), "a bit true" (= 2) and "very true" (= 3). Scale scores were computed by averaging the items; a higher score indicated greater emotional problems. The scale was internally consistent ($\alpha = .69$).

Sensation seeking. To assess the extent of sensation seeking, the items suggested by Stephenson, Hoyle, Palmgreen, and Slater (2003) were adopted. Participants were asked:

“How true is this of you?” with two items: “I do dangerous things for fun” and “I do exciting things, even if they are dangerous”. These were answered on a scale “not true” (= 1), “a bit true” (= 2) and “very true” (= 3). Scale scores were computed by averaging the items; a higher score indicated more sensation seeking. The scale was internally consistent ($\alpha = .79$).

Excessive internet use. Participants were asked five questions which referred to the aforementioned six factors of addictive behaviour adjusted by Griffiths (2000). The five questions used in the present study were derived from the ten-item version of the scale measuring symptoms of problematic internet use (Šmahel & Blinka, in press; Šmahel, Vondráčková, Blinka, & Godoy-Etcheverry, 2009). One question capturing mood changes addressed two factors: euphoria and withdrawal symptoms. Participants were asked how often in the past 12 months they had gone without eating or sleeping because of the internet (salience); how often they felt bothered when they could not be online (euphoria and withdrawal symptoms); how often they caught themselves surfing when they had not really been interested (tolerance); whether they dedicated less time to their family, friends or schoolwork because of the time spent on the internet (conflict); and whether they tried to spend less time on the internet without success (relapse and reinstatement). Four-point response scales were offered: “never/almost never” (= 1) “not very often” (= 2) “fairly often” (= 3) and “very often” (= 4). Scale scores were computed by averaging the items; a higher score indicated more problematic internet use. The scale was internally consistent ($\alpha = .78$).

Data analysis

Three multinomial logistic regression models, including the same predictors, were estimated. First, the frequency of exposure was predicted using “no exposure” and “sporadic exposure” as reference categories which were compared with “frequent exposure”. Second, the place of exposure was predicted with “no exposure”, “only online exposure”, and “only offline exposure” serving as reference categories which were compared with “both offline and

online exposure”. Finally, the type of online exposure was predicted. Exposure only to images that pop-up accidentally was set as a reference category in order to compare accidental online exposure with exposure on social networking sites and exposure on pages where sexually explicit material is usually sought (adult/X-rated and peer-to-peer sharing websites).

The fit of all logistic regression models (i.e. whether the estimated values of outcome variables matched the observed values) was assessed by the Hosmer –Lemeshow (H-L) statistic, which is recommended if multiple continuous variables are present (Agresti, 2002). Since the H-L statistic is available only for binary logistic regression, the advice of Hosmer and Lemeshow (2000) was followed to assess the fit of multinomial models by applying the test individually to all binary comparisons between the categories of the outcome variable. Data were analysed using the PASW (SPSS) Statistics 18 software.

Results

Descriptive statistics

Descriptives of all variables are presented in Table 1.

--- Table 1 ---

Out of 610 participants, 74 did not answer the question on frequency of exposure and 88 did not answer the question on the place of exposure (see Table 1). Moreover, several participants had missing values on some predictor variables. Therefore, a total number of 495 participants could be used when predicting the frequency of exposure, and a total number of 483 participants could be used when predicting the place of exposure. The comparisons between participants who were included and excluded from the analyses ($N_{\text{Included}} = 495$ and $N_{\text{Excluded}} = 115$ when predicting the frequency of exposure, and $N_{\text{Included}} = 483$ and $N_{\text{Excluded}} = 127$ when predicting the place of exposure) showed no significant differences in their mean age ($t_{608} = -.71$, $p = .48$; $t_{608} = .68$, $p = .50$), socioeconomic status ($t_{600} = .67$, $p = .50$; $t_{600} = 1.32$, $p = .19$), frequency of internet use ($t_{608} = -.56$, $p = .58$; $t_{608} = .17$, $p = .87$), emotional

problems ($t_{600} = 1.45$, $p = .15$; $t_{600} = 1.12$, $p = .26$), sensation seeking ($t_{597} = .43$, $p = .67$; $t_{597} = 1.39$, $p = .16$), and gender ($\chi^2_1 = .78$, $p = .38$; $\chi^2_1 = .02$, $p = .90$). Regarding excessive internet use, included and excluded participants did not differ when predicting the frequency of exposure ($t_{580} = 1.24$, $p = .21$), but they differed when predicting the place of exposure ($t_{580} = 2.74$, $p < .01$), with excluded participants having slightly greater excessive internet use than included participants ($r = .15$).

Next, out of 153 participants who indicated that they were exposed online (i.e. only online or both offline and online), 55 did not specify the type of their online exposure or chose the “other” category (see Table 1). Another seven participants had missing values on some predictors. Therefore, data from 91 participants were used when predicting the type of online exposure.

Predicting the frequency of exposure

Multinomial logistic regression analysis was employed to predict the odds of being sporadically or frequently exposed, no matter if offline or online. Categories “no exposure” and “sporadic exposure” (Table 2) were used as reference categories. A test of the full model versus a model with intercept only was statistically significant (LR $\chi^2_{14} = 182.51$, $p < .01$), which meant that the full model explained a significant amount of the original variability in the frequency of exposure. Moreover, all individual models had a good fit to the data, as indicated by non-significant goodness-of-fit tests (H-L χ^2 , see Table 2).

--- Table 2 ---

The results showed that greater odds of being sporadically exposed, compared to not being exposed, were predicted by higher age (OR = 1.36, $p < .01$) and greater excessive internet use (OR = 1.79, $p < .05$). Other predictors, including gender and sensation seeking, were not significant. Greater odds of being frequently exposed, compared to not being exposed, were predicted by higher age (OR = 2.19, $p < .01$), male gender (OR = 2.75, $p < .01$), and greater excessive internet use (OR = 1.79, $p < .05$).

.01), greater sensation seeking (OR = 1.70, $p < .01$), and greater excessive internet use (OR = 3.75, $p < .01$). Similarly, greater odds of being frequently exposed, compared to being sporadically exposed, were predicted by age (OR = 1.61, $p < .01$), male gender (OR = 3.41, $p < .01$), greater sensation seeking (OR = 1.36, $p < .05$), and greater excessive internet use (OR = 2.09, $p < .01$).

Predicting the place of exposure

The likelihood of being exposed only offline, only online, and in both environments was predicted using multinomial logistic regression. Reference categories were set as “no exposure” (Table 3; top part), “only offline”, and “only online” (Table 3; bottom part). The difference between the intercept only model and the full model was significant (LR $\chi^2_{21} = 141.51$, $p < .01$). This suggests that a significant amount of the original variability in the place of exposure was explained. At the same time, all individual models fitted well to the data (see Table 3).

--- Table 3 ---

The results indicated that the likelihood of being exposed only offline, compared to not being exposed, was significantly predicted only by higher age (OR = 1.34, $p < .01$). Likewise, greater odds of being exposed only online, compared to not being exposed, were predicted by higher age (OR = 1.72, $p < .01$) and also by excessive internet use (OR = 2.08, $p < .05$). Finally, a greater odds of being exposed in both environments, compared to not being exposed, was predicted by higher age (OR = 1.80, $p < .01$), male gender (OR = 1.88, $p < .05$), greater emotional problems (OR = 2.31, $p < .05$), greater sensation seeking (OR = 1.58, $p < .01$), and greater excessive internet use (OR = 2.76, $p < .01$).

When other reference categories were used, greater odds of being exposed in both environments, compared to being exposed only offline, were predicted by higher age (OR = 1.34, $p < .05$) and male gender (OR = 2.09, $p < .05$). On the other hand, greater odds of being

exposed in both environments, compared to being exposed only online, were not predicted by any variable in the model.

Predicting the type of online exposure

Finally, a multinomial logistic regression model was used to predict the odds of being exposed on social networking sites and on adult/X-rated or peer to peer file-sharing websites. Exposure only to images that pop up accidentally was a reference category. A test of the full model versus the intercept only model was significant ($LR \chi^2_{14} = 34.42, p < .01$), thus a significant amount of the original variability was explained. All the individual models fitted well to the data (see Table 4).

--- Table 4 ---

The results showed that greater odds of being exposed on social networking sites, rather than through images that popup accidentally, were predicted only by greater sensation seeking ($OR = 1.85, p < .05$). Further, a greater likelihood of being exposed on adult/X-rated and/or peer to peer file-sharing websites, compared to exposure through images that pop up accidentally, was predicted by male gender ($OR = 9.45, p < .01$), greater emotional problems ($OR = 6.02, p < .05$), and greater sensation seeking ($OR = 2.46, p < .01$).

Discussion

The present study of Czech young adolescents provided evidence on differences in the predictors for frequency, place, and type of online exposure. The findings showed that a greater exposure was linked to a larger number of risk related predictors. This trend was confirmed when frequent exposure was compared with sporadic exposure, and when no exposure was compared with exposure in both off and online environments. However this was not the case when exposure in both off and online environments was compared to exposure occurring only offline or only online. Detailed analyses of online exposure on different applications also revealed that exposure on sexually-focused websites, i.e. adult/X-rated or

peer to peer file-sharing websites was predicted by an increased number of risk related predictors.

In terms of frequency, sporadic exposure was predicted by a limited number of the studied predictors, only advanced age and excessive internet use. For some Czech young adolescents a small amount of exposure may be an ordinary part of maturing as their interest in sexuality increases (Bearman & Brückner, 2001; Weinstein & Rosen, 1991). It is also possible that with increasing age the adolescents may be less monitored by their parents, in order to foster independence (Goldstein, 1984), which may result in greater exposure to sexual material.

The findings also showed young adolescents scoring higher on excessive internet use were more likely to experience sporadic exposure. This significant factor of sporadic exposure might stem from young internet users lacking the skills to regulate their online activities and resist the incentives provided by the internet, especially younger adolescents who seem to require greater control than their older counterparts (see Eccles, Buchanan, Flanagan, Fuligni, Midley, & Yee, 1991).

Considering the cultural specifics of the Czech Republic, it may be that Czech parents provide less frequent mediation (see Kalmus & Roosalu, 2012) thus increasing Czech young adolescents' vulnerability to excessive internet use. Further, the liberal and permissive atmosphere in the Czech Republic (Kalmus & Vihalem, 2008; Weiss & Zvěřina, 2001) may mean that Czech young adolescents grow up in an environment with easy access to sexual material both off and online. These hypotheses should be tested in further research.

Frequent exposure differed from both no exposure and sporadic exposure. Its predictors were increased age, being male, sensation seeking, and excessive internet use. The presence of risk related predictors (sensation seeking and excessive internet use) seems to be in line with previous studies providing evidence that psychosocial risks are linked to

premature sexual activities (Bearman & Brückner, 2001; Bellis et al., 2008; Kuortti & Kosunen, 2009; Orr et al., 1991).

The analysis of the place of exposure showed almost analogous results. In comparison to no exposure, exposure both offline and online was predicted by an increased number of risk factors. In other words, young adolescents with more psychosocial difficulties seem to be at greater risk of exposure to sexual material which is in line with prior work describing the link between psychosocial risk factors and sexual activities in early adolescence (see Bearman & Brückner, 2001; Bellis et al., 2008; Kuortti & Kosunen, 2009; Orr et al., 1991). However, when comparing exposure both offline and online with exposure only offline, only advanced age and being male were significant predictors. This may indicate that the internet is attractive for those with increased interest in sexual issues and seeing sexual images online is an ordinary part of maturing.

Comparing exposure in both environments simultaneously and exposure only online, none of the studied predictors were found to be significant. One possible explanation could be that exposure only online and exposure in both environments has the same denominator which may be the internet. Due to the wide accessibility of sexual material (Subrahmanyam & Šmahel, 2011), the internet can be attractive for those young adolescents who want to access sexual material. However, it is also possible that the attrition of those scoring highly on excessive internet use may bias the results of the study.

Further, the logistic regression analyses showed that excessive internet use was an important predictor in all types of internet based exposure. However, the detailed analyses on types of online exposure and its predictors showed no link between excessive internet use and sexually focused online applications such as Adult/X-rated or peer to peer file-sharing websites. One explanation could be that excessive internet use in early adolescence may have a different background. It may be too early for young adolescents to develop problematic

internet use for sexual purposes, and exposure to sexual material in early adolescence may be a side effect of some other form of problematic internet use such as overuse of online communication, which has been documented as having a strong addictive potential in this developmental period (see Van den Eijnden et al., 2008). It is worth noting that almost 36 % of the participants did not specify the application of online exposure and the final number of adolescents included in the analyses was rather small which could also bias the findings.

Several limitations must be considered when interpreting the results of this study. Aside from those already mentioned, only internet users participated in this survey. Also, due to the sensitivity of this topic, asking adolescents about their experiences with sexual material in early adolescence, the questions did not examine exactly what kind of sexual pictures the adolescents encountered. Further, more detailed measures assessing specific frequencies of exposure in different contexts and SES could have been used. Finally, as the present analyses were based on cross-sectional data, it is important to recognise that the causal relations between the studied predictors and exposure to sexual material are not definitive, and further research using a longitudinal approach would be valuable.

In conclusion, this study provided evidence on differences in predictors of exposure to sexual material. Although a large proportion of the Czech adolescents have been exposed to sexual material both off and online (Livingstone et al., 2011a), the extent of this exposure varies with the predictors altering accordingly. The individual's age was found to be an important predictor of exposure to a lesser extent of (sporadic exposure and exposure only in one environment). Although it seems to be developmentally appropriate to begin to be exposed to sexual material as age advances, it is important to communicate with young adolescents about messages mediated by visual sexual material. Further, the findings indicate that less exposure to sexual material can be a subsidiary phenomenon of excessive internet use among Czech young adolescents. Future research should pay greater attention to the

origin of excessive internet use in early adolescence; whether it is caused by a lack of self-regulation mechanisms in this developmental period and whether a lower level of parental mediation may contribute to the development of excessive internet use among young adolescents.

Finally, this study showed that greater exposure, as well as exposure on sexually focused applications, was linked to an increased number of risk related predictors. These results indicate a need to develop strategies to prevent vulnerable children from the exposure risk. Although it is a challenge, it seems that those showing psychosocial difficulties require greater attention from caregivers and other relevant adults to help them navigate through their development and use of new technologies and understanding of messages that these media convey.

References

- Agresti, A. (2002). *Categorical data analysis*. Hoboken: John Wiley & Sons.
- Bearman, P., & Brückner, H. (2001). Promising the future: Virginity pledges and the first intercourse. *American Journal of Sociology*, 106, 859–912. doi:10.1086/320295
- Bellis, M.A., Hughes, K., Calafat, A., et al. (2008). Sexual uses of alcohol and drugs and the associated health risks: A cross sectional study of young people in nine European cities. *BMC Public Health*, 8, 155-165. doi:10.1186/1471-2458-8-155
- Brown, J. D., & L'Engle, K. L. (2009). X-rated sexual attitudes and behaviors associated with U.S. early adolescents' exposure to sexually explicit media. *Communication Research*, 36, 129-151. doi:10.1177/0093650208326465
- Eccles, J.S., Buchanan, C.M., Flanagan, C., Fuligni, A., Midley, C., & Yee, D. (1991). Control Versus Autonomy During Early Adolescence. *Journal of Social Issues*, 47(4), 53-68. doi: 10.1111/j.1540-4560.1991.tb01834.x
- Ethier, K., Kershaw, T. S., Lewis, J. B., Milan, S., Niccolai, L. M., & Ickovics, J. R. (2006). Self-esteem, emotional distress and sexual behavior among adolescent females: Inter-relationships and temporal effects. *Journal of Adolescent Health*, 38, 268-274. doi:10.1016/j.jadohealth.2004.12.010
- Eurostat (2010). *NUTS – Nomenclature of territorial units for statistics*. Retrieved 30 January 2011, from http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction
- Goodman, R.R., Ford, T.T., Simmons, H.H., Gatward, R.R. & Meltzer, H.H. (2003). Using the strengths and difficulties questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *International Review of Psychiatry*, 15(1–2), 66–72. doi: 10.1192/bjp.177.6.534

- Goldstein, H. S. (1984). Parental composition, supervision, and conduct problems in youths 12 to 17 years old. *Journal of the American Academy of Child Psychiatry*, 23, 679-684. doi:10.1016/S0002-7138(09)60536-7
- Greenfield, P. M. (2004). Inadvertent exposure to pornography on the Internet: Implications of peer-to-peer file-sharing networks for child development and families. *Journal of Applied Developmental Psychology*, 25, 741-750. doi:10.1016/j.appdev.2004.09.009
- Griffiths, M. (2000). Does Internet and computer “addiction” exist? Some case study evidence. *Cyberpsychology & Behavior*, 3, 211-218. doi:10.1089/109493100316067
- Hosmer, D. W., & Lemeshow, S. (2002). *Applied logistic regression*. Hoboken: John Wiley & Sons.
- Kalmus, V., & Roosalu, T. (2012). Institutional filters on children's internet use: An additional explanation of cross-national differences in parental mediation. M. Walrave, W. Heirman, S. Mels, C. Timmerman, & H. Vandebosch (Eds.), *e-Youth: Balancing between opportunities and risks* (pp. 235-250). Peter Lang Publishers House
- Kalmus, V., & Vihalemm, T. (2008). Patterns of continuity and disruption: The specificity of young people’s mental structures in three transitional societies. *Young*, 16, 251-278. doi: 10.1177/110330880801600302
- Kuortti, M., & Kosunen, E. (2009). Risk-taking behaviour is more frequent in teenage girls with multiple sexual partners. *Scandinavian Journal of Primary Health Care*, 27, 47-52. doi:10.1080/02813430802691933
- L’Engle, K. L., Brown, J. D. & Kenneavy, K. (2006). The mass media are an important context for adolescents’ sexual behaviour. *Journal of Adolescent Health*, 38, 186-192. doi:10.1016/j.jadohealth.2005.03.020

- Lin, S. S. J., & Tsai, C.-C. (2002). Sensation seeking and internet dependence of Taiwanese high school adolescents. *Computers in Human Behavior*, 18, 411-426.
doi:10.1016/S0747-5632(01)00056-5
- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011a). *Risks and safety on the internet: The perspective of European children. Full findings*. London: EU Kids Online, LSE.
- Livingstone, S., Haddon, L., Görzig, A. and Ólafsson, K. (2011b). *Technical Report and User Guide: The 2010 EU Kids Online Survey*. London: EU Kids Online, LSE.
- Lupač, P., & Sládek, J. (2008). The deepening of the digital divide in the Czech Republic. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 2. Retrieved December 14, 2011, from <http://cyberpsychology.eu/view.php?cisloclanku=2008060203&article=2>
- Marada, R. (2004). Social construction of youth and formation of generational awareness after socialism. In P. Mareš et al. (Eds.), *Society, Reproduction and Contemporary Challenges* (pp. 149-168). Brno: Barrister & Principal.
- Meerkerk, G. J., Van den Eijnden, R. J. J. M., & Garretsen, H. F. L. (2006). Predicting compulsive internet use: It's all about sex! *CyberPsychology & Behavior*, 9, 95-103.
doi:10.1089/cpb.2006.9.95
- 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 & Society*, 34, 330-358. doi:10.1177/0044118X02250123
- Orr, D.P., Beiter, M., & Ingersoll, G. (1991). Premature sexual activity as an indicator of psychosocial risk. *Pediatrics*, 87, 141-147.
- Peter, J., & Valkenburg, P. M. (2006). Adolescents' exposure to sexually explicit material on the Internet. *Communication Research*, 33, 178-204. doi:10.1177/0093650205285369

- Ringrose, J. (2010). Sluts, whores, fat slags and Playboy bunnies: Teen girls' negotiations of 'sexy' on social networking sites and at school. In C. Jackson, C. Paechter, & E. Renold (Eds.), *Girls and education 3-16: Continuing concerns, new agendas* (pp. 170-182). Basingstoke: Open University Press.
- Shapira, N. A., Lessig, M. C., Goldsmith, T. D., Szabo, S. T., Lazoritz, M. L., Gold, M. S., & Stein, D. J. (2003). Problematic Internet use: Proposed classification and diagnostic criteria. *Depression and Anxiety*, 17, 207-216. doi:10.1002/da.10094
- Šmahel, D., & Blinka, L. (in press). Excessive internet use among European children. In S. Livingstone, L. Haddon, & A. Görzig (Eds.), *Children, risk and safety on the internet*. London: The Policy Press.
- Šmahel, D., Vondráčková, P., Blinka, L., & Godoy-Etcheverry, S. (2009) Comparing addictive behavior on the internet in the Czech Republic, Chile and Sweden. In G. Cardoso, A. Cheong, & J. Cole (Eds), *World wide internet: Changing societies, economies and cultures*, Macau: University of Macau, pp 544-79.
- Stephenson, M. T., Hoyle, R. H., Palmgreen, P., & Slater, M. D. (2003). Brief measures of sensation seeking for screening and large-scale surveys. *Drug and alcohol dependence*, 72, 279-286. doi:10.1016/j.drugalcdep.2003.08.003
- Subrahmanyam, K., & Šmahel, D. (2011). *Digital Youth: The Role of Media in Development*. New York : Springer.
- Van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. M. E. (2008). Online communication, compulsive Internet use, and psychosocial well-being among adolescents: A longitudinal study. *Developmental Psychology*, 44, 655-665. doi:10.1037/0012-1649.44.3.655
- Weinstein, E., & Rosen, E. (1991). The development of adolescent sexual intimacy: implications for counseling. *Adolescence*, 26, 331-340.

- Weiss, P., & Zvěřina, J. (2001). *Sexuální chování v ČR – situace a trendy* [Sexual behavior in CZ – the situation and trends]. Praha: Portál.
- Widyanto, L., & Griffiths, M. (2007). Internet addiction: Does it really exist? (revisited). In J. Gackenbach (Ed.), *Psychology and the internet: Intrapersonal, interpersonal, and transpersonal implications* (pp. 141–63). San Diego, CA: Academic Press.
- Wolak, J., Mitchell, K., & Finkelhor, D. (2006). Online victimization of youth: Five years later. *National Center for Missing & Exploited Children Bulletin 07-06-025* (Online). Retrieved December 14, 2011, from <http://www.unh.edu/ccrc/pdf/CV138.pdf>
- Wolak, J., Mitchell, K. J., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth internet users. *Pediatrics*, 119, 247-257.
doi:10.1542/peds.2006-1891
- Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: A national survey. *CyberPsychology & Behavior*, 8, 473-486.
doi:10.1089/cpb.2005.8.473

Table 1. Descriptive statistics.

	N	%	M (SD)	Range
Age	610		12.99 (1.47)	11-15
Gender	610	48.4 (boys)		
Socioeconomic status	602		1.25 (0.60)	0-2
Frequency of internet use	610		3.80 (0.49)	1-4
Emotional problems	602		1.49 (0.39)	1-2.83
Sensation seeking	599		1.88 (1.10)	1-3
Excessive internet use	582		1.49 (0.54)	1-4
Frequency of exposure				
No exposure	300	56.0		
Sporadic exposure	123	22.9		
Frequent exposure	113	21.1		
Total	536	100.0		
Place of exposure				
No exposure	300	57.5		
Only offline	69	13.2		
Only online	47	9.0		
Both offline and online	106	20.3		
Total	522	100.00		
Type of online exposure				
Only via images that pop up accidentally	30	19.6		
On a social networking site	24	15.7		
On an adult/X-rated and/or peer to peer file-sharing website	44	28.8		
Other or missing values	55	35.9		
Total	153	100.00		

Table 2. Logistic regression models predicting the frequency of exposure to sexual material.

	Reference category: No exposure (N = 275)						Reference category: Sporadic exposure (N = 113)		
	Sporadic exposure (N = 113)			Frequent exposure (N = 107)			Frequent exposure (N = 107)		
	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>
Intercept	-7.45(1.53)**			-14.99(2.09)**			-7.54(2.23)**		
Age	0.31(0.09)**	1.36	(1.15-1.62)	0.78(0.12)**	2.19	(1.75-2.74)	0.48(0.12)**	1.61	(1.27-2.04)
Gender (0 = boys)	0.22(0.25)	1.24	(0.77-2.01)	-1.01(0.30)**	0.36	(0.20-0.66)	-1.23(0.32)**	0.29	(0.16-0.54)
Socioeconomic status	-0.27(0.20)	0.76	(0.52-1.13)	0.08(0.24)	1.08	(0.68-1.73)	0.35(0.25)	1.42	(0.87-2.32)
Frequency of internet use	0.22(0.28)	1.25	(0.73-2.14)	0.01(0.36)	1.01	(0.51-2.03)	-0.21(0.40)	0.81	(0.37-1.77)
Emotional problems	0.50(0.32)	1.65	(0.89-3.08)	0.52(0.38)	1.68	(0.80-3.54)	0.02(0.39)	1.02	(0.48-2.17)
Sensation seeking	0.22(0.12)	1.25	(0.99-1.59)	0.53(0.13)**	1.70	(1.33-2.19)	0.31(0.13)*	1.36	(1.05-1.77)
Excessive internet use	0.58(0.28)*	1.79	(1.04-3.08)	1.32(0.29)**	3.75	(2.13-6.59)	0.74(0.28)**	2.09	(1.22-3.61)
H-L χ^2 (df)		4.36(8)			12.55(8)			8.79(8)	

Note. $R^2 = .36$ (Nagelkerke), .19 (McFadden). B = Unstandardised regression coefficient. SE = Standard error. OR = Odds ratio. CI = Confidence interval for OR. ** $p < .01$. * $p < .05$.

Table 3. Logistic regression model predicting the place of exposure to sexual material.

	Reference category: No exposure (N = 275)								
	Only offline exposure (N = 65)			Only online exposure (N = 43)			Both offline and online exposure (N = 100)		
	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>
Intercept	-7.75(1.83)**			-9.44(2.25)**			-12.15(1.90)**		
Age	0.29(0.11)**	1.34	(1.09-1.65)	0.54(0.13)**	1.72	(1.32-2.23)	0.59(0.11)**	1.80	(1.46-2.21)
Gender (0 = boys)	0.10(0.29)	1.11	(0.62-1.98)	-0.65(0.36)	0.52	(0.26-1.06)	-0.63(0.28)*	0.53	(0.31-0.93)
Socioeconomic status	-0.15(0.24)	0.86	(0.54-1.38)	-0.13(0.29)	0.88	(0.50-1.56)	-0.22(0.23)	0.80	(0.51-1.25)
Frequency of internet use	0.17(0.33)	1.19	(0.62-2.28)	-0.13(0.37)	0.88	(0.42-1.83)	0.08(0.34)	1.08	(0.55-2.12)
Emotional problems	0.64(0.38)	1.90	(0.90-4.03)	-0.05(0.51)	0.95	(0.35-2.61)	0.84(0.37)*	2.31	(1.12-4.75)
Sensation seeking	0.18(0.15)	1.19	(0.90-1.59)	0.26(0.16)	1.29	(0.94-1.78)	0.46(0.13)**	1.58	(1.23-2.02)
Excessive internet use	0.54(0.32)	1.71	(0.92-3.19)	0.73(0.37)*	2.08	(1.01-4.25)	1.01(0.28)**	2.76	(1.60-4.75)
H-L χ^2 (df)	6.98(8)			7.90(8)			5.36(8)		
	Reference category: Only offline exposure (N = 65)			Reference category: Only online exposure (N = 43)					
	Both offline and online exposure (N = 100)			Both offline and online exposure (N = 100)					
	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>			
Intercept	-4.40(2.30)			-2.71(2.61)					
Age	0.29(0.13)*	1.34	(1.04-1.72)	0.04(0.15)	1.05	(0.78-1.40)			
Gender (0 = boys)	-0.74(0.35)*	0.48	(0.24-0.95)	0.02(0.39)	1.02	(0.47-2.19)			
Socioeconomic status	-0.08(0.27)	0.93	(0.54-1.59)	-0.10(0.31)	0.91	(0.49-1.67)			
Frequency of internet use	-0.09(0.44)	0.91	(0.39-2.14)	0.21(0.46)	1.23	(0.50-3.03)			
Emotional problems	0.19(0.44)	1.21	(0.52-2.84)	0.89(0.54)	2.43	(0.84-7.02)			
Sensation seeking	0.28(0.16)	1.32	(0.98-1.80)	0.20(0.17)	1.22	(0.88-1.70)			
Excessive internet use	0.48(0.32)	1.61	(0.86-3.01)	0.28(0.36)	1.33	(0.66-2.67)			
H-L χ^2 (df)	14.38(8)			3.47(8)					

Note. $R^2 = .28$ (Nagelkerke), $.13$ (McFadden). B = Unstandardised regression coefficient. SE = Standard error. OR = Odds ratio. CI = Confidence interval for OR. ** $p < .01$. * $p < .05$.

Table 4. Logistic regression models predicting the type of online exposure.

	Reference category: Only in images that pop up accidentally (N = 28)					
	On a social networking site (N = 20)			On an adult/X-rated and/or a peer to peer file-sharing website (N = 43)		
	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B(SE)</i>	<i>OR</i>	<i>95% CI</i>
Intercept	-6.79(5.76)			-10.21(6.08)		
Age	0.17(0.24)	1.18	(0.73-1.91)	0.29(0.23)	1.33	(0.84-2.11)
Gender (0 = boys)	-0.01(0.67)	0.99	(0.27-3.65)	-2.25(0.69)**	0.11	(0.03-0.41)
Socioeconomic status	-0.10(0.51)	0.90	(0.33-2.43)	-0.32(0.50)	0.73	(0.28-1.92)
Frequency of internet use	0.84(1.32)	2.31	(0.17-30.48)	1.12(1.35)	3.06	(0.22-42.98)
Emotional problems	0.64(0.94)	1.89	(0.30-11.93)	1.79(0.89)*	6.02	(1.04-34.74)
Sensation seeking	0.61(0.31)*	1.85	(1.00-3.42)	0.90(0.30)**	2.46	(1.37-4.44)
Excessive internet use	-0.77(0.62)	0.46	(0.14-1.55)	-0.82(0.57)	0.44	(0.14-1.33)
H-L χ^2 (df)		4.18(8)			10.42(8)	

Note. $R^2 = .36$ (Nagelkerke), .18 (McFadden). B = Unstandardised regression coefficient. SE = Standard error. OR = Odds ratio. CI = Confidence interval for OR. ** $p < .01$. * $p < .05$.

Study V

Ševčíková, A., Šerek, J., & Macháčková, H. (in press). Exposure to online sexual materials and cross-country differences. In H. Hrachovec & M. Strano (Eds.), *Proceedings Eighth International Conference on Cultural Attitudes Towards Technology and Communication*.

Abstract. This study examined individual-level factors and country-level factors which predict exposure to online sexual materials (EOSM) among European children. The sample consisted of children aged 11-15 years (N=12,472) who were surveyed within the project EU Kids Online II. A cross-cultural comparison has shown that the country-level factors accounted for 11 % of the variation in EOSM within the European sample. However, neither broadband penetration, nor religious faith were significant as studied country-level factors, while all individual-level predictors such as advanced age, being male, increased amount of time spent online, emotional problems, sensation seeking, and excessive internet use predicted EOSM. On the other hand, gender had a different effect on EOSM at the cross-country level. The countries with higher rates of exposure indicated lower gender differences in EOSM. The implications of the findings are discussed.

1. Introduction

The expansion of the internet into the bedrooms of children has raised concerns regarding the nature of some of its contents. In particular, these concerns deal with exposure to online sexual materials (EOSM) at a young age as this can negatively affect children's attitudes towards sex or sexual well-being (Brown and L'Engle, 2009; Peter and Valkenburg, 2006, 2007).

Even though this concern is present in most of the modern countries, a recent cross-national research on 25 European countries has shown differences in prevalence of EOSM among young internet users. For instance, the highest rates of EOSM were found in Norway where 34% of children at age 9-16 years saw sexual images on websites, while the lowest prevalence was documented in Germany with 4% of children reporting EOSM (Livingstone, Haddon, Görzig, and Ólafsson, 2011).

Previous studies provide evidence that children with more psychological difficulties and risk factors are more likely to experience EOSM (Peter and Valkenburg, 2006; Wolak, Mitchell, and Finkelhor, 2007; Ybarra and Mitchell, 2005). Children suffering from depression (Ybarra and Mitchell, 2005), who scored higher on impulsiveness (Wolak et al. 2007) and sensation seeking (Peter and Valkenburg, 2006) seem to be more vulnerable to seeing sexual images online. Also, an increased time spent online has been found to predict EOSM (Mesch, 2009; Mitchell Finkelhor, and Wolak, 2003). Within the perspective of psychological difficulties and risk factors, higher frequency of internet use can be a manifestation of excessive internet use, i.e. pathological internet use (Young, 1998).

Considering the relation of cross-national differences in EOSM and psychological difficulties/risk factors as the predictors of EOSM, there are few explanations why

children with psychological difficulties and risk factors might differ in their prevalence across countries. For instance, a lower standard of living which varies across countries has been found to affect children's well-being (Gallo and Matthews, 2003). However, focusing on the European context from where comparative data are available, an analysis of EOSM across 25 European countries provides evidence that children's EOSM seems to be highest in Nordic countries and some Eastern European countries, and lowest in Southern Europe and predominantly Catholic countries (Livingstone et al. 2011). This indicates that some cultural specifics other than standard of living may be behind the differences in the rate of EOSM across Europe.

COUNTRY-LEVEL CHARACTERISTICS IN RELATION TO VARIABILITY OF EOSM

Considering previous research, the North, the East and the South of Europe differ in the level of internet use and internet access (Eurostat, 2009; Livingstone et al. 2011). For instance, South Europe is known for lower internet penetration in comparison to Nordic countries and some Eastern countries, among which particularly Estonia and the Czech Republic have experienced rapid growth of internet penetration (Internet World Stats, 2011). In relation to EOSM, the expansion of broadband penetration may be related to the extent of EOSM as high speed internet connections allow access to a relatively large amount of data in a short time, including sexual images. Therefore, we hypothesize that broadband penetration rates might help explain the cross-country differences in EOSM.

Furthermore, the findings have shown that lower EOSM was found in the Southern catholic European countries. In general, it is known that religiosity varies across European countries (EVS, 2008) and, at the same time, it has a regulatory effect on sexual behavior. For instance, higher religiosity delays sexual development (Hardy and Raffaelli, 2003). In terms of EOSM, children with lower religiosity have been found to be more likely to see sexual images online (Mesch, 2009). Therefore, we hypothesize that religious faith may contribute to the differences in EOSM in Europe.

Finally, Nordic countries are known for progressive gender role attitudes (e.g. Sjöberg, 2004). Considering strong evidence for gender differences in EOSM in the fact that more boys have seen sexual images on the internet than girls (Mesch, 2009; Peter and Valkenburg, 2006; Wolak et al. 2007), we hypothesize that in countries with liberal sexual norms women might be more sexually empowered and thus more active in seeking sexual stimulations (see Clement, Schmidt, and Kruse, 1984). With this in mind, we expect that countries with lower gender differences in EOSM might have higher rates of EOSM than countries with greater gender differences.

To sum up, the study aimed to examine to what extent cultural specifics might explain variations in EOSM across Europe and to identify country-level factors that could be responsible for these national differences. Considering the important role of psychological difficulties and risk factors in EOSM, emotional problems, sensation seeking and excessive internet use were also included in the analyses. Demographic characteristics such as age and gender were controlled as well.

2. Methods

PARTICIPANTS

The present study used data from the international research project EU Kids Online II, which aimed to enhance the knowledge of European children's and parents' experiences and practices regarding risky and safer use of the internet and new online technologies. This study was conducted during April/October 2010 across 25 European countries, where 25 142 children (50% girls) aged 9-16 years were interviewed together with their parents. The representative samples of the countries were stratified by region and level of urbanization. Addresses of households were selected randomly by using Random Walk procedures in most countries. In a small number of countries an alternative random-selection approach to recruitment was adopted. At each address, one child was randomly selected from all eligible children in the household (i.e. all those aged 9-16 who use the internet). More detailed information about the recruitment is available at [http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/EUKidsII%20\(2009-11\)/Survey/Technical%20report.PDF](http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/EUKidsII%20(2009-11)/Survey/Technical%20report.PDF). In our study we focused only on young adolescents aged 11-15 years (N=12,472) who answered all the analyzed questions. Additionally, the sample was reduced from the original 25 to 20 European countries due to the missing values of utilized country-level factors.

PROCEDURE

Data gathering was performed via a survey, which was preceded by instructions and two rounds of testing that the children understand. The professional agency Ipsos MORI provided support for designing the questionnaire and cooperated with local fieldwork agencies to ensure that a unified, standard approach was used in each country. Data was collected at children's homes where one child (together with one parent) was interviewed. The whole research was conducted in line with ESOMAR ethical guidelines and approved by the LSE Research Ethic Committee. Confidentiality and anonymity were guaranteed and all the information and questions were stated and explained to parents and children in an age-appropriate way and in the local language.

MEASURES

Exposure to online sexual materials. This variable was measured using two filter questions: (1) "In the past year, you have seen lots of different images. Some of these might be sexual. Have you seen anything of this kind in the past 12 months?" indicating general exposure (see Table 1) and (2) "Have you seen these kind of things on any websites in the past 12 months?". These items examined the occurrence of exposure (Yes or No). Children who answered "yes" on both the questions were identified as those having experience with EOSM.

Frequency of internet use. Next, how often adolescents used internet was assessed. Respondents were asked: "How often do you use the internet?" with possible answers being: "less than once a month" (= 1), "once or twice a month" (= 2), "once or twice a week" (= 3), "every day or almost every day" (= 4). This scale was treated as continuous, higher scores indicating more frequent internet use.

Emotional problems. The participants were also asked a set of questions that dealt with emotional problems which were derived from the Strength and Difficulty Questionnaire (Goodman, Ford, Simmons, Gatward, and Meltzer, 2003). The variable included 6 items using a 3-point Likert scale from “not true” (1), “a bit true” (2), to “very true” (3). The questions addressed problems such as a) having a lot of headaches, stomach-aches or sickness, b) being very angry and often losing temper, c) often feeling unhappy, sad or tearful, d) being nervous in new situations and easily losing confidence, e) being easily distracted and finding it difficult to concentrate, and f) having many fears, being easily scared. The scale scores were computed by averaging the items; a higher score indicated greater emotional problems. The scale was internally consistent ($\alpha=.65$).

Sensation seeking. To assess the extent of sensation seeking, the items suggested by Stephenson, Hoyle, Palmgreen, and Slater (2003) were adopted. Participants were asked: “I do dangerous things for fun”, “I do exciting things, even if they are dangerous”. These were answered on a scale ranging from “not true” (1), “a bit true” (2) or “very true” (3). Scale scores were computed by averaging the items and a higher score indicated more sensation seeking. The scale was internally consistent ($\alpha=.76$).

Excessive internet use. This variable was measured by using a five-item scale with a four-point response scale (from “never” (1) to “very often” (4)). The participants were asked how often, in the past 12 months, they had gone without eating or sleeping because of the internet, how often they felt bothered when they could not be online, how often they caught themselves surfing when they had not really been interested, whether they dedicated less time to their family, friends or schoolwork because of the time spent on the internet, and whether they tried to spend less time on the internet without success. These five items were derived from the ten item version of the scale (see Šmahel, Vondráčková, Blinka, and Godoy-Etcheverry, 2009) using the concept of behavioral addiction developed by Griffiths (2000). The scale covers five proposed criteria: salience, mood modifications, tolerance, conflicts, time restriction. Scale scores were computed by averaging the items; a higher score indicated more problematic internet use. The scale was internally consistent ($\alpha=.75$).

Country-level indicators.

Broadband penetration. This factor indicates the percentage of European households using broadband connection in 2009. The data was obtained from EUROSTAT (see <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=t.siir150&plugin=1>).

Religious faith. This factor indicates the percentage of religious people within the European countries that was assessed by the European Value Study in 2008 (see <http://www.europeanvaluesstudy.eu/>)

See Table 1 for a more detailed description of the variables.

Table 1. Variable description within European sample

	Europe (N=9,664)		
	<i>M (SD)</i>	Range	%
Gender (girls)			50.0
Age	12.99(1.41)	11/15	
Frequency of	3.66 (.59)	1/4	

Internet use			
Emotional problems	1.42 (.36)	1/3	
Sensation seeking	1.69 (1.02)	1/3	
Excessive internet use	1.44 (.51)	1/4	
Broadband	53.50(14.53)	24.00/77.00	
Religion	22.90(19.99)	6.90/82.20	DATA

ANALYSIS

We used the multilevel modeling approach with random effects to examine the relevance of individual and contextual influences when predicting EOSM. Data from 20 European countries was used. Multilevel analysis is an extension of simple regression analysis and assumes that the studied people are divided into groups with both individual- and group-level predictors explaining the variance in individual-level outcomes. In our dataset, children were divided into twenty countries; thus a two-level model with individual (level-1) and country (level-2) variables was employed. Since the outcome variable was dichotomous in our case, a model assuming Bernoulli distribution and using the logistic link function on the individual level was estimated (Hox, 2002; Raudenbush, Bryk, Cheong, Congdon, and du Toit, 2004). Three multilevel models were estimated in total. The level-1 part was identical for all three models, and it comprised the six above-mentioned individual-level predictors:

$$\text{Log}(p_{ij}/(1-p_{ij})) = \beta_{0j} + \beta_{1j}(\text{Gender})_{ij} + \beta_{2j}(\text{Age})_{ij} + \beta_{3j}(\text{Frequency})_{ij} + \beta_{4j}(\text{EMO})_{ij} + \beta_{5j}(\text{Sensation Seeking})_{ij} + \beta_{6j}(\text{Addiction})_{ij}$$

where p was the probability that the child i from the country j had seen on-line sexual images, β_{0j} was the intercept for the country j , and other β s were regression coefficients for the given predictors. However, the models differed in their specification of the level-2 parts. The first model (Model 1) assumed that children from different countries have different initial log-odds of EOSM. Therefore, a random intercept (u_{0j}) was included to account for the inter-country variation. Individual-level regression coefficients were assumed to be the same across countries, and no country-level predictors were included:

$$\begin{aligned}\beta_{0j} &= \gamma_{00} + u_{0j}, \\ \beta_{1j} &= \gamma_{10}, \beta_{2j} = \gamma_{20}, \dots, \beta_{6j} = \gamma_{60}.\end{aligned}$$

Next, two country-level predictors (broadband penetration and religion) were added (Model 2). Therefore the intercept part of the level-2 model changed to:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Broadband})_j + \gamma_{02}(\text{Religiosity})_j + u_{0j}$$

where γ_{01} and γ_{02} were regression coefficients for country-level predictors. Finally, we tested whether the effect of gender on EOSM varied across the countries (Model 3). Thus, we added a random slope for gender (u_{1j}) to the model:

$$\beta_{1j} = \gamma_{10} + u_{1j}.$$

The models were estimated using the restricted penalized quasi-likelihood estimation procedure in HLM for Windows 6.08. For the sake of easier interpretation, gender (female = 0; male = 1) and age (age 11 = 0; age 12 = 1; etc.) variables were

added to all analyses as uncentered, while all other predictors were grand-mean centered before the analysis. This was done after the list-wise exclusion of missing data from all analyses (except description of prevalence of EOSM in Table 2).

3. Results

First we performed a basic comparison of the prevalence among children in Europe (see Table 2). The results show that Czech internet users have the highest EOSM (33,8%), while the lowest EOSM was reported by children from Germany (4,9%).

In the next step, we conducted a multilevel regression analysis predicting the odds of being exposed to sexual materials on the internet (vs. not being exposed) in 20 European countries. The results are presented in Table 3.

In Model 1, the intercept tells us that an “average” girl from an “average” European country had .08 odds of EOSM. All individual-level predictors significantly predicted the children’s EOSM. Being a boy increased the odds 1.38 times. With advancing age, the odds increased 1.45 times for every additional year of age. The odds also increased with greater frequency of internet use, emotional problems, sensation seeking, and excessive internet use (see odds ratios in Table 3).

The random part of the model indicated that children from different countries significantly differed in their EOSM, and this could not be attributed to individual-level predictors. Since the outcome variable was dichotomous, it was not possible to simply compute the percentage of its variance which was attributable to the country level. However, there are at least two ways to deal with this problem. First, a median odds ratio (MOR) can be computed. If we repeatedly randomly choose two children from different countries who have the same covariates and compute the odds ratios between the person of higher and the person of lower propensity, the MOR is the median of these odds ratios. MOR can be equal to or higher than 1, with a MOR of 1 meaning no inter-country variation (Larsen and Merlo, 2005). The MOR of our model was 1.84, which meant that children from different countries considerably differed in their EOSM. The second way is based on assuming that the dichotomous outcome variable arises from an underlying continuous variable. Since we know its variance ($\sigma_e^2 = \pi^2/3$ for the standard logistic distribution), we can easily compute the ratio between the country-level and total variance (Goldstein, Browne, and Rasbash, 2002). For our data, $\sigma_{u0}^2 / (\sigma_{u0}^2 + \sigma_e^2) = .11$, meaning that country-level differences accounted for 11 % of the variation in EOSM.

Table 2. Sample description and basic variable frequency

Country	N	Percent of females	Exposure on the Internet
Austria	605	49.4	18.0
Belgium	596	50.8	20.4
Bulgaria	685	49.1	22.5
Cyprus	555	50.7	12.5
Czech Republic	610	50.2	33.8
Germany	626	46.0	4.9
Denmark	666	54.5	30.0
Estonia	612	49.4	33.4
Greece	501	43.7	17.7
Spain	678	47.1	10.0
Finland	686	51.9	29.3
France	543	52.3	25.0
Hungary	648	50.7	13.4
Ireland	675	50.0	12.0
Lithuania	603	49.7	28.1
Netherlands	665	53.7	28.0
Poland	668	47.6	15.0
Portugal	574	50.3	16.8
Romania	653	50.1	22.9
Slovenia	623	50.6	22.9
Total	12,472	49.9	20.6

Note. All results in this table are displayed with “country weight” except for N, which is the actual number of respondents in each country.

Table 3. Multilevel regression with Exposure to sexual materials on the internet as the dependent dichotomous variable (unit-specific models)

	Model 1			Model 2			Model 3		
	<i>B (SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B (SE)</i>	<i>OR</i>	<i>95% CI</i>	<i>B (SE)</i>	<i>OR</i>	<i>95% CI</i>
Fixed effect									
<i>Level-1 variables</i>									
Intercept	-2.56(.16)**			-2.56(.16)**			-2.56(.16)**		
Gender (male)	.32(.06)**	1.38	(1.23-1.55)	.32(.06)**	1.38	(1.23-1.55)	.32(.08)**	1.38	(1.16-1.65)
Age	.37(.02)**	1.45	(1.40-1.52)	.37(.02)**	1.45	(1.40-1.52)	.38(.02)**	1.46	(1.40-1.52)
Frequency	.39(.06)**	1.47	(1.30-1.66)	.38(.06)**	1.47	(1.30-1.66)	.38(.06)**	1.46	(1.29-1.66)
Emotional problems	.39(.08)**	1.47	(1.26-1.73)	.39(.08)**	1.47	(1.26-1.73)	.39(.08)**	1.47	(1.26-1.73)
Sensation seeking	.37(.03)**	1.45	(1.38-1.53)	.37(.03)**	1.45	(1.38-1.53)	.37(.03)**	1.45	(1.38-1.53)
Excessive internet use	.73(.05)**	2.07	(1.86-2.30)	.73(.05)**	2.07	(1.86-2.30)	.73(.05)**	2.08	(1.87-2.32)
<i>Level-2 variables</i>									
Broadband		-		-.01(.01)	.99	(.96-1.02)		-	
Religiosity		-		-.01(.01)	.99	(.97-1.01)		-	
Random effect									
σ_{u0}^2		.41**			.42**			.42**	
σ_{u1}^2		-			-			.07*	

Note. B = unstandardized regression coefficient. SE = standard error. OR = odds ratio. CI = confidence interval for OR. σ_{u0}^2 = inter-country variance. σ_{u1}^2 = random slope variance (gender). N = 9,664.

** p < .001.

* p < .01.

None of the country-level predictors were able to explain the inter-country differences in the participants' EOSM. As can be seen in Model 2, the predictors of broadband penetration and religiosity were both non-significant and only had a negligible effect on the odds of being exposed¹.

However, we found that the countries differed significantly in the effect of gender. In some countries, gender mattered more than in others when predicting EOSM – this follows from the fact that the regression coefficients for gender significantly varied across countries (variance .07 and standard deviation .27; see Model 3). Assuming that the coefficients are normally distributed, we can expect that in 67 % of countries the regression coefficient lied between $.32 \pm .27$, i.e. from .05 to .59. Obviously, the gender effect ranged from none to considerable. Moreover, tau correlation between random slopes and random intercepts was found to be -.22. This suggests that in countries with higher average EOSM, gender mattered moderately less than in the countries with lower average EOSM.

4. Discussion

This study has shown that all individual-level predictors, including demographic characteristics of children, frequency of internet use, psychosocial difficulties, and risk factors were significant, while culture-level predictors such as broadband and religiosity could not explain the country difference in EOSM. However, it has been found that in countries with greater average EOSM gender mattered moderately less than in countries with lower average EOSM.

The findings on individual-level predictors are in line with prior research in that older children tend to consume sexual contents online more often than younger internet users (Mitchell et al. 2003; Wolak et al. 2007; Ybarra and Mitchell, 2005). This might be given in relation to psychosexual development: one's interest in sexuality increases with age. Furthermore, the results are also consistent with previous studies documenting that boys are more likely to see sexual images on the internet than girls (Mesch, 2009; Wolak et al. 2007). The observed gender differences might be related to the differences in socialization of boys; interest in sexuality is generally supported among boys and the social status of boys in male peer groups is influenced by their knowledge of sexuality, which may increase their need to consume sexual materials on the internet (Macek, 2003).

Also, frequency of internet use as a significant predictor of EOSM has been documented in similar studies on exposure to sexual materials on the internet (Mesch, 2009; Mitchell et al. 2003). Increased time spent online may be a manifestation of pathological/excessive internet use on one hand. On the other hand, EOSM may be an outcome of non-problematic internet use, since malicious software may cause sexual images to unexpectedly popup on the (whole) screen (Wolak, Mitchell and Finkelhor, 2006).

The study confirms on the cross-national sample that vulnerable children, facing emotional problems, increased sensation seeking and excessive internet use, are more likely to experience EOSM (see Peter and Valkenburg, 2006; Wolak et al.; Ybarra and Mitchell, 2005) which again raises the question of how to protect vulnerable children from the risk of EOSM and at the same time to allow/empower them to profit from the opportunities that the internet brings.

Although the country-level factors accounted for 11 % of the variation in EOSM within this cross-country sample, none of the studied cross-national-level indicators significantly explained the differences in EOSM. This indicates the complexity of EOSM and that further research is needed. Even the findings that in countries with greater average EOSM gender mattered moderately less than in countries with lower average EOSM should be interpreted with caution. In the introduction we suggested that this could advert to the gender-related cultural specifics of studied countries. In those cultures where gender differences in EOSM are less distinct, girls might be more empowered in their sexually-related activities on the internet, which in turn could increase the occurrence of EOSM in general. However, this cultural interpretation of the gender effect on EOSM could also be clarified by another relevant explanation. Previous research work has shown that gender differences appear in the context of wanted - intentional EOSM while these differences disappear when examining unwanted EOSM among young internet users (Mitchell et al. 2003; Wolak et al. 2007). Then the finding of the present study might indicate that greater average EOSM in some countries could be rather the outcome of unwanted – unintentional EOSM than the result of progressed gender role attitudes.

¹ Since the country-level predictors appeared to be insignificant, we tested several other predictors for explorative purposes. They were added to the model "two-by-two" to keep a reasonable ratio between the number of predictors in the model and the number of cases on the second level (N=20). These predictors were: internet usage (Eurostat), percentage of young people who have had sexual intercourse (Unicef), ICT Development Index (ITU), percentage of young people living in single-parent family structures (Unicef). None of them was found to have a significant effect.

Therefore, the study suggests the need to reflect a type and place of EOSM when exploring cultural indicators which could explain differences in the rates of EOSM. Specifically, it might be important to consider how internet usage patterns may affect a type of EOSM; whether EOSM occurs intentionally (visiting X-rated websites) or unintentionally (pop-up advertisements) or whether it occurs in a private setting (computers in bedrooms) or in public (computers in living rooms or schools). All such information related to EOSM may help in identifying country-level indicators responsible for the observed national differences.

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References

- Brown, J. D., & L'Engle, K. L. (2009). X-rated sexual attitudes and behaviors associated with U.S. early adolescents' exposure to sexually explicit media. *Communication Research*, 36, 129-151. doi:10.1177/0093650208326465
- Clement, U., Schmidt, G., & Kruse, M. (1984). Changes in sex differences in sexual behavior: A replication of a study on West German students (1966–1981). *Archives of Sexual Behavior*, 13(2), 99-120.
- European Values Study (2008). Retrieved 30 January 2011, from <http://www.europeanvaluesstudy.eu/evs/surveys/survey-2008.html>
- Eurostat (2009). Retrieved 30 January 2011, from <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsiir150&plugin=1>
- Eurostat (2010). *NUTS – Nomenclature of territorial units for statistics*. Retrieved 30 January 2011, from http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction
- Goodman, R.R., Ford, T.T., Simmons, H.H., Gatward, R.R., & Meltzer, H.H. (2003). Using the strengths and difficulties questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *International Review of Psychiatry*, 15(1–2), 66–72.
- Goldstein, H., Browne, W., & Rasbash, J. (2002). Partitioning variation in multilevel models. *Understanding Statistics*, 1, 223-231.
- Griffiths, M. (2000). Does Internet and computer “addiction” exist? Some case study evidence. *Cyberpsychology & Behavior*, 3, 211-218.
- Hardy, S.A., & Raffaelli, M. (2003). Adolescent religiosity and sexuality: an investigation of reciprocal influences. *Journal of Adolescence*, 26, 731-739.
- Hox, J. J. (2002). *Multilevel analysis: techniques and applications*. Mahwah: Lawrence Erlbaum Associates.
- Larsen, K., & Merlo, J. (2005). Appropriate assessment of neighborhood effects on individual health: Integrating random and fixed effects in multilevel logistic regression. *American Journal of Epidemiology*, 161(1), 81–88.
- Livingstone, S., Haddon, L., Görzig, A., Ólafsson, K. (2011). *Risks and safety on the internet. The perspective of European children. Full findings from the EU Kids Online survey of 9-16 year olds and their parents*. LSE, London: EU Kids Online.
- Macek, P. (2003). *Adolescence: psychologické a sociální charakteristiky dospívajících*. [Adolescence: psychological and social characteristics of adolescents]. Praha: Portál.
- Mesch, G.S. (2009). Social bonds and Internet pornographic exposure among adolescents. *Journal of Adolescence*, 32, 601-618.
- Mitchell, K.J., Finkelhor, D., & Wolak, J. (2003). The exposure of youth to unwanted sexual materials on the internet: a national survey of risk, impact and prevention. *Youth and Society*, 34, 330-358.
- Peter, J., & Valkenburg, P. (2006). Adolescent's exposure to sexually explicit online materials and recreational attitudes towards sex. *Journal of Communication*, 56, 639-660.
- Peter, J., & Valkenburg, P. (2007). Adolescent's exposure to sexualized media environment and their notion of women as sex objects. *Sex Roles*, 56, 381–395.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R., & du Toit, M. (2004). *HLM 6: hierarchical linear and nonlinear modeling*. Lincolnwood: Scientific Software International.
- Sjöberg, O. (2004). The role of family policy institutions in explaining gender-role attitudes: A comparative multilevel analysis of thirteen industrialized countries. *Journal of European Social Policy*, 14, 107-123.

- Šmahel, D., Vondráčková, P., Blinka, L. & Godoy-Etcheverry, S. (2009). Comparing addictive Behavior on the Internet in the Czech Republic, Chile and Sweden. In G. Cardoso, A. Cheong, J. Cole (Eds.), *World wide internet: Changing societies, economies and cultures* (pp. 544-582). Macao : University of Macau.
- Stephenson, M. T., Hoyle, R. H., Palmgreen, P., & Slater, M. D. (2003). Brief measures of sensation seeking for screening and large-scale surveys. *Drug and alcohol dependence*, 72, 279-286.
- Subrahmanyam, K., & Šmahel, D. (2011). *Digital Youth: The Role of Media in Development*. New York : Springer.
- Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: A national survey. *CyberPsychology & Behavior*, 8, 473-486.
- Young, K. (1998). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology & Behavior*, 1(3), 237-244.
- Wolak, J., Mitchell, K., & Finkelhor, D. (2006). Online victimization of youth: Five years later. *National Center for Missing & Exploited Children Bulletin 07-06-025* (Online). Retrieved December 14, 2011, from <http://www.unh.edu/ccrc/pdf/CV138.pdf>
- Wolak, J., Mitchell, K., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth internet users. *Pediatrics*, 119, 247-257.
- Internet World Stats (2011). Retrieved 30 January 2012, from <http://www.internetworldstats.com/stats4.htm>

Study VI

Ševčíková, A., Kvapilík, T., Simon, L., & Daneback, K. (under review). Bothering exposure to online sexual content among adolescents. *Youth & Society*.

Abstract

Adolescents today spend a significant amount of time online and may become exposed to bothersome sexual content. The aim of this qualitative study was to examine negative sexual experiences on the Internet through online interviews with 15 participants (aged 15-17 years). We inquired about the context in which the adolescents encountered these materials and the reasons for their negative reactions. Results showed that bothering sexual content was encountered during online exploration, information seeking, while viewing other sexual material, or while chatting with new acquaintances. The adolescents felt bothered when the sexual content portrayed sex of an extreme nature, seemed inappropriate for their age, felt threatening to their home life, or norms for establishing romantic relationships were broken. The implications of the study are discussed.

Keywords

Online sexual materials; internet; adolescence; exposure; development

Introduction

Adolescents today spend a great deal of their time online, with access to the Internet through a number of technological devices, such as their mobile phone or home computer. As computing technology becomes cheaper and more widespread, perhaps shrinking the digital divide (Brown, Champbell, & Ling, 2011), the Internet may be serving as a more prominent source of information, entertainment, and socialization for young people.

The online world may be enticing to young people for a number of reasons. Accessing a website is easy, affordable, and oftentimes anonymous. These factors can appeal to a user who wants to learn information quickly, ask an embarrassing question, or perhaps share a common interest with new friends. However, access, affordability, and anonymity, popularly known as the triple-A-engine (Cooper, 1998; Cooper & Griffin-Shelley, 2002), may not be the only factors which explain why young people go online in particular. Adolescents may also log in to seek certain types of content.

Research has shown that the Internet is used for sexual purposes. Most research has focused on how adults engage in online sexual activities, especially men who have sex with men (Döring, 2009), but young people also use the Internet to explore and engage with sexual material (Livingstone, Haddon, Görzig, & Ólafsson, 2011). As teenagers become sexually active and increasingly interested in sex as they get older (Furman & Wehner, 1997; Savin-Williams & Diamond, 2004), they may become drawn to the online world in order to interact more with their peers and establish romantic relationships. The Internet can thus offer teenagers a potentially unlimited number of ways to establish and maintain intimate contacts. In fact, literature now shows that adolescents not only use the Internet for keeping in contact with offline peer groups (Gross, 2004) or for maintaining offline romantic relationships (Subrahmanyam & Šmahel, 2011), but also for establishing new romantic or sexual contacts

(Smahel & Subrahmanyam, 2007; Subrahmanyam, Smahel, & Greenfield, 2006). Teenagers also access a wide range of materials online to seek answers to questions regarding their sexuality and health (Daneback & Löfberg, 2011; Graya, Klein, Noyce, Sesselberg, & Cantrill, 2005; Suzuki & Calzo, 2004). Relationship establishment, relationship maintenance, and information seeking used to be activities young people did offline; they are now partly conducted online, likely in new ways due to the anonymity and privacy one can find uniquely on the Internet (Daneback & Ross, 2011). In this way, the Internet may serve as a common platform for many adolescents to learn more about relationships and sex or engage with sexual content.

These online sexual activities can be positive; the majority of young people who access sexual content are not discomforted by the experiences (Mitchell, Finkelhor, & Wolak, 2003). However, some young people can also have negative experiences with sexual materials. For example, an *EU Kids Online* survey conducted in 25 countries found that a significant proportion of individuals have been bothered by sexual subject matter on the Internet. Thirty-two percent of those surveyed (aged 9 to 16) had seen bothering sexual materials and 25% of participants had received bothering sexual messages (Livingstone et al., 2011). Thus, not all young people's experiences online are positive in nature, and it may be valuable to learn more about how adolescents encounter and describe such experiences.

Generally little is already known about how young people experience bothering sexual content online. Studies have shown that adolescents can experience a wide range of negative emotions in such a situation, including embarrassment, distress, and anger (Mitchell, Finkelhor, & Wolak, 2003; Wolak, Mitchell, & Finkelhor, 2006). Some adolescent Internet-users even wished that they had never seen the bothering material (Staksrud & Livingstone, 2009). Furthermore, young people may experience significant variation in the duration of

their negative reactions, with some individuals immediately forgetting the unpleasant content while others felt distressed for a couple of days (Livingstone et al., 2011). While these studies point to some of the emotions the young people may feel, or how long they can feel the effects, this is by no means a complete picture of how young people encounter disturbing sexual material.

Previous studies on adolescent exposure to online sexual content indicate that developmental readiness might play a role how young people experience intimate material. For example, the *EU Kids Online* survey documented that younger adolescents are more likely than older adolescents to be bothered by both sexual material and messages (Livingstone et al., 2011). This difference may be due to young people's psychosocial development; while using the Internet, adolescents may encounter things for which they are too young and not mentally prepared for. As Wolak, Mitchell, and Finkelhor (2007) argue, insufficient developmental readiness may elicit negative reactions when exposure to online sexual materials has been sought due to adolescent curiosity. The user may be curious but lack the cognitive capacity to properly comprehend the unfamiliar materials they have seen and the uncomfortable feelings that can follow such unexpected or unwanted exposure (Finkelhor, Mitchell, & Wolak, 2000).

In this type of situation, when adolescents are inadvertently exposed to sexual content online that they have never seen or read before, they may lack the intrapsychic or cultural scripts necessary to fit their experiences into context. Gagnon & Simon (1973) argue that a sexual script can provide a person with an understanding of acceptable behavior in a certain situation. In other words, scripts are metaphorical how-to manuals, cultural norms of acceptable or 'normal' behaviour, shaped by what we learn and experience, both individually and culturally. Such scripts may help a young person fit a first date into context and provide

them a set of behaviours that would seem socially acceptable in that experience. However, if an adolescent had never learnt about a certain type of violent pornography, for instance, they may lack the sexual script to socially contextualize such content and know how to behave. They may end up feeling unprepared, scared, or disturbed.

We also considered how Livingstone's (2007) concept of bedroom culture might help theorize these experiences. Livingstone argues that increasing dangers in the contemporary adolescents' world have influenced them to spend less of their leisure time out in the public streets. Instead, young people have now grown up in the perceived safety of their bedrooms, which can grant them a unique virtual access to the outside world through media and technology. In this way, the Internet can foster a special feeling of privacy and security in one's bedroom, allowing young people to feel comfortable exploring the online world without harm from any physical threat outdoors or in the 'real world.' However, this sense of security in one's bedroom may account for a young person feeling especially frightened or disturbed when that veil of safety is broken. Encountering violent sexual content or harassing sexual communication could feel like a very serious intrusion of personal space; the relationship they have had with their computer or Internet device has been violated in some way and their conceptualization of the Internet may change. Thus, we aimed to explore these themes in our interviews with participants and consider the psychological and sociological factors which may affect young people in our analysis of their experiences encountering unwanted material online.

In summary, the above-mentioned studies discuss possible reasons why exposure to sexual content online may result in negative experiences in adolescence. Negative reactions may be due to adolescents' unpreparedness or insufficient developmental readiness for certain sexual content. However, with little research documenting these experiences in-depth we

wished to investigate their experiences further. By adopting a qualitative methodology and developmental approach, this study aimed to explore what type of online context the bothering content was encountered, what material specifically bothered them, how online sexual content is encountered by adolescents, and how this material may clash with their developmental needs and/or sexual scripts, resulting in negative reactions. We hoped to gain insight into the negative experiences young people can have online, thus providing more information that could be useful for parents, educators, or other adolescents in order to minimize such unwanted experiences in the future.

Method

Context and Participants

This study was conducted within ethical guidelines of the Masaryk University. Data were collected from March 2011 to May 2011. Two recruitment methodologies were used. One aimed to recruit participants through three popular websites while the second focused on recruiting students in school. Recruitment was based on the following qualification: participants had to have experienced a negative or unpleasant exposure to sexually explicit content on the Internet or via a mobile phone during adolescence.

Online participants were recruited on three Czech websites largely used by young people: (1) www.xchat.cz, (2) www.lide.cz, and (3) www.libimseti.cz, all of which allow young people to chat, date online, and meet new people. Potential participants who were at age 11 – 18 and active users of the above-mentioned websites were sent a private message, inviting them to participate in the study. Overall, 18950 users were received the message

where they were given basic information about what the study would entail, its requirements, and the researchers' contact information.

In-person recruitment also occurred at a school in Brno, Czech Republic. Upon approval from the school director, a written letter of invitation was distributed to students in their secondary levels.

Using these two methods, 15 participants aged 15-18 (mean age 16,3 years) who provided informed consent were recruited; two through the school and the remainder online. The participants included 14 girls and one boy, creating an uneven gender distribution which was unintentional. Each participant provided their informed consent. As previously stated, each participant had experienced negative exposure to sexually explicit content. The age at which the participants had first experienced this exposure ranged from 11 to 17 years old. The sample was also diverse in regards to where exposure to negatively-experienced sexual content occurred; with some experiencing content on their computer ($n = 7$), on their mobile phone ($n = 2$), or both ($n = 6$). While the male adolescent reported only one incident associated with an unpleasant experience, the others cited exposure to sexually explicit materials ranging from once a month to daily.

Design Procedures and Instrumentation

Once they accepted the study's invitation, participants were asked to take part in an online interview via instant messenger (ICQ). Conducting the interview online allowed participants to feel relative anonymity while disclosing sensitive information. Interviews lasted approximately two hours, excluding breaks. This extended length allowed the researcher and participants to take their time typing, which can be more time-consuming than simply talking in a traditional interview. Participants were also instructed that they could

interrupt the interview at any time, allowing them to go to the bathroom or complete a short errand. At the beginning of each interview, participants were also informed that they could end the interview at any time and that any information they provided would only be used for research purposes.

Each interview consisted of questions about the types of exposure (e.g., picture, video, ad banner) the participant had faced, its content, and where and how often each person had come across it. Participants were asked about the feelings evoked by the exposure and how long these had lasted. Throughout the interview, the researcher asked questions concerning the reasons any negative or unpleasant feelings occurred. Participants were asked whether the exposure or feelings may have occurred when the adolescents were alone or while browsing and interacting with others. At the end of the interview, participants were given the chance to add anything which may not have been previously covered.

Data Analysis

Analysis was conducted using the Grounded Theory Method (Strauss & Corbin, 1999). Each interview was analysed before the next was conducted, resulting in greater specification and modification of the questions asked. The software ATLAS.ti 6.0 was used in the first stage of data analysis. During open coding, participants' answers were analysed line-by-line resulting in the reduction of the text into codes. For example, the following sentence, *"For instance, I looked for some expression, and it was unpleasant, instead of some pictures some disgusting videos popped up,"* was collapsed into codes such as: unwanted exposure to pictures/videos and inappropriate context.

Analysis focused on coding participants' responses in order to synthesise the data and find patterns in their responses (Charmaz, 2008). To do so, the most significant or repeated

codes were chosen and then condensed into categories. For example, the category “*breaking norms/rules*” included explicit requests for sexual behaviour forbidden by law, requests for paid sex, a lack of respect for the rules of a given online environment, and online contact or friendship immediately reduced to sex online. These categories were finally put into the context of pre-existing literature to allow for analysis.

Results

A) Context

Adolescents encountered bothering sexual content in multiple contexts. Participants encountered sexual content through links to web cameras, posts in chat rooms, and through adolescents’ profiles on social networking sites (such as www.lide.cz and www.libimseti.cz). Some sexual content was also experienced via instant messenger, e-mail, or mobile phones (sms or mms). Three participants said that phone calls followed online sexual messages.

Once, he called me around 3 a.m., he said nothing, only panted into the phone.

He asked me where I live, of course I did not tell him about it. (Nina, female, 15 years)

Adolescents were asked where they were when they found bothering sexual subject matter. Analysis revealed a common thread: incidents often originated from Internet use at home when the participant was alone. In two cases, participants encountered unwanted sexual content in a public space, like the occupied school computer room.

Interviewer: Does it happen to you at home or somewhere else, for instance on somebody else's computer?

Participant (Jana, female, 18 years): I only use my computer at home, sometimes my friend's one or at school, but this happens only at home

Two paths lead participants to experience bothering sexual content. (1) Some participants described browsing the internet and exploring content before encountering material of a sexual nature. Exposure would occur while seeking information that also had a double meaning, or was colloquially associated with, or slang for, human genitalia. Participants were bothered when they were browsing and such material unexpectedly appeared. (2) Adolescents also encountered bothering sexual content through online interactions while establishing contacts with unknown people on the internet.

While both browsing the Internet and online interactions had led to visual sexual material, the former seemed to expose the participant to a greater range of content, such as videos picturing naked females, male bodies, couples having sex, or sexual toys. Online interactions tended to expose the participant to pictures or web camera links that mostly portrayed male genitalia (sometimes in the context of masturbation). The adolescent girls in our sample found the latter to be a relatively common experience.

I was sent a link through a chat. It dealt with pictures with male genitalia and a request for paid sexual intercourse (Gabriela, female, 16 years)

It may be worth noting that participants in this study were predominantly sent sexual material as opposed to being solicited to send their own pictures. Only two females in our sample were asked to send images of themselves in a sexual manner.

B) What bothered them

Reasons for finding the sexual content bothering can be divided into three categories: (1) disturbing content, (2) issues not in line with adolescent psychosexual development, and (3) threatening content.

1) Content: it is too much

Some adolescents found the content itself upsetting as it portrayed something that the participants considered unacceptable or disgusting. As the examples below demonstrate, some adolescents were not disturbed when they saw sexual content deemed commonplace on the Internet, but material of an extreme nature felt disturbing.

Of course I have seen something similar, but it was not with two guys. Two girls, one cup was the biggest extreme, but I have seen only pictures and they made me feel unwell, so I lacked the courage to see the video (Ivan, male, 16 years)

I don't know. When it deals with a normal sexual act or nudity, this may be normal even though I am surprised. But when it is violence in sex or something hard like hard sex, this is really very bothersome (Jana, female, 18 years)

2) Not in line with adolescent psychosexual development

No respect for the adolescent's age

Some participants encountered material that they did not feel was appropriate for their age.

Interviewer: They send you a link and a window pops up with what a web camera takes?

Participant (Adéla, female, 15 years): Yes, but they sent it to me from chat rooms for younger than 15 years...

I: So you did not like what you saw on the screen?

P: Exactly, I am not interested in anything sexual x)

The participant found it upsetting that she had encountered a link and subsequent video in an online environment she felt was associated with people too young to view sexual material. She was instructed to click on a link posted in a chat room for those 15 years old and younger; it was not expected that the person she was chatting with had very different interests or perhaps was above 15 years old. Thus, seeing a web camera showing the male author's genitalia was unexpected. The participant felt bothered by the content and by the deception, through which she was forced to see something she felt inappropriate. In fact, as stated, she had not been interested in anything sexual online. An additional example follows:

It was ok when they wrote that I was pretty, but when somebody wrote how he wanted to fuck me, that was no longer pleasant ...they should leave me alone when I am only 13. (Dáša, female, 16 years)

This participant became irritated when she received suggestions to have intercourse, despite the fact that her age was displayed on her profile and she was legally underage at the time. She was surprised that it was possible to receive such messages when it should be widely known that in the Czech Republic sexual intercourse is illegal when one is under the age of 15.

The lack of respect shown for the adolescents' age (and thereby, appropriate level of sexual interest) was a common reason for the participants' negative reactions. The deception that could lead young people to this type of sexual content caused some participants to consider the internet to be an uncontrollable environment, one which could put them in uncomfortable situations.

Yes, I felt like I was betrayed! I was not bothered with body parts, I would be bothered if my sister sat next to me and saw something which she is not allowed to see (Cindy, female, 18 years)

If one could become exposed to unwanted sexual content inexplicably, then the user may not be able to protect even more innocent bystanders, such as a younger sister.

Breaking the norms for establishing romantic relationships

For some participants, exposure to sexual stimuli occurred while establishing new online contacts. Specifically, there were two scenarios in which adolescents were confronted with sexual content while chatting. In the first situation (1), the adolescents received direct messages and pictures of sexually suggestive content, mostly male genitalia. These sexually

explicit messages were produced without any effort to establish intimate contact. This made some of the participants feel degraded.

The most disturbing was that I felt like a “light skirt that guys want only to sleep with ...I found it very weird, how guys are rowdy, I felt offended. It made me feel bad (Kristýna, female 15 years)

Furthermore, the participants’ negative feelings were exacerbated by age differences between them and their online pursuers when this age gap became apparent.

It happened to me more than 10 times and plus such awful 50 year old guys:-)
(Františka, female, 17 years)

The second scenario (2), in which our participants encountered sexual situations while chatting, differed from the first in that it usually started with a pleasant online interaction. After giving some basic contact information out, including the exchange of phone numbers, the first sexual messages appeared.

From ICQ, first he wrote how he liked me, I felt bored so exchanged 2-3 messages. He asked me for my ICQ number and I wrote it there. It was ok, a normal guy. And in the evening I received the first text message from an anonymous number, he told me he had found it on my profile. Then he asked me if I wanted to come and visit him, and this was the start.... (Ema, female, 17 years)

Yes, I talked to some nice guy online, later we exchanged text messages and he immediately sent me some erotic mms, with his genitalia, shock (Cindy, female, 18 years)

This second example represents a deceptive strategy that included establishing a relatively trusting relationship with the participant. This relationship was later co-opted for sexual purposes. The participants felt deceived when the nonsexual conversation became sexual. They tended to find this act more offensive as the frequency of sexual messages intensified, especially when the message content started including threats.

3) Threats

Threats from perpetrators were considered very disturbing by the adolescent participants, especially when the participants had been forced, through intimidation, to send naked pictures of themselves or to meet online strangers face to face.

The worst is when they start to threaten me that they know where I live, they know my family...sometimes they threaten me cause they want my pictures or want me to do something for them... (Gabriela, female, 16 years)

These types of threats can feel especially frightening if the adolescent does not feel comfortable sharing their online activities with their parents. They may feel threatened and alone without someone to talk to. In fact, the adolescents in our sample revealed that they were often hesitant to communicate their online activities with their parents. The participants

were scared of having their access to the Internet blocked or of having increased parental monitoring of their usage of the Internet or mobile phone. Parental assistance may have helped alleviate the feelings of deception or fear, although we do not have any direct evidence for this from our particular sample.

C) The extent of negative feelings

Although the duration and intensity of the participants' negative feelings varied across the sample, it appeared that the strongest feelings of disturbance were elicited when online strangers attempted to infiltrate the participants' everyday lives.

On the internet everybody can write to you...but on a mobile it is like they intrude into my privacy, it is bothering (Dáša, female, 16 years)

Communication via cell phone was considered to be more personal than Internet use on a computer. Participants felt that the perpetrator could get closer to them, interrupting their daily life to the point that one could not easily avoid it.

After a couple of days I was totally ruined, I worried whether he would suddenly appear in the street and do something to me (Nina, female, 15 years)

Unpleasant or unsettling feelings sometimes grew into a deeper fear that the perpetrator could physically disturb the participant in her offline life.

Discussion

This qualitative study provided some reasons why negative feelings result from exposure to sexual contents online or via mobile phone. These incidents occurred within the context of exploration, information seeking, or making new acquaintances. The adolescents felt bothered when the sexual content portrayed sex of an extreme nature, did not feel age-appropriate (e.g., appeared in an environment supposed to be reserved for young adolescents), was beyond their psychosexual development, or broke the accepted norms for establishing intimate or romantic relationships. Adolescents considered the most bothering incidents to be threats from perpetrators whom attempted to infiltrate the adolescents' offline lives in some manner.

In interpreting our results, we found that participants' experiences often fit into the context of bedroom culture (Livingstone, 2007). They more often encountered the described bothering sexual content at home rather than in public. In the privacy of their own home, the participants may have felt particularly safe and protected from harm, and thus may have felt particularly violated when they encountered something new or unexpected. If the Internet is associated with the home, it may become associated with feelings of relaxation, security, and safety. It may not be associated in their minds with unpredictability and the potential harm that could come from certain online experiences, like giving out contact information with strangers. Text messages or phone calls from online harassers were considered especially bothering. If viewed within a bedroom culture context, these messages or calls can be considered extended invasions of privacy, not just disturbing on the computer screen, but brought even further into the supposedly safe home through further means.

We also found evidence of young people bothered by material online that did not fit their individual or cultural scripts of sexual behaviour. Gagnon & Simon's (1979) concept of the sexual script helped to explain why some participants might be okay with viewing some

sexual material but not others. Some content was considered ‘normal’ or acceptable behaviour, while other materials were surprising, violent, and/or bothersome. If a young person has encountered some sexual acts before, through conversations with friends, parents, through their sex education, or through previous online experiences, they may be less likely to find the act unusual. The young person may normalize this behaviour based on their previous conversations and experiences, so that they now feel more comfortable when they encounter this content. In contrast, completely novel content, or material that has been condemned by others, would garner a more negative reaction. Possessing no script or a script which identifies the material as bothering might lead a young person to condemning it.

This insight we gained into participants’ unwanted experiences could be used to potentially better prepare adolescents in the future for their time spent online. For instance, it may be near-impossible to shelter young people from all material that is developmentally inappropriate. Although parental filters can help keep certain content off-limits, today young people explore vastly and from a number of devices, making it unlikely that they will never encounter unwanted sexual content. Thus, in order to help aid young people as they use the Internet and encounter sexual material, it may be valuable to provide adolescents with increased communication about the potential risks they take online. Although the majority of young people surveyed still do not experience bothering feelings online (Livingstone et al., 2011; Mitchell, Finkelhor, & Wolak, 2003), it may be valuable to increase educational conversations about the Internet and its potential effects. These conversations could help establish new sexual scripts and better equip young people with the cognitive tools needed to handle encountering new sexual content online. We recommend that parents in particular attempt to have these conversations with adolescents. For instance, the young people in our study might have felt less bothered had they felt comfortable and encouraged by adults to

share with them their experiences online. In order to facilitate such conversations, it may be useful for parents to learn more about what their children may encounter on the Internet and how unwanted sexual content can be experienced; that way, they can try to prepare adolescents before such unwanted experiences might occur. We hope our study provides more information to adults and adolescents alike that might aid in such conversations.

In addition to increasing conversations between parents and young people, adolescents might also benefit from more educational web content that can provide information about the presentation of sexual content online. Young people may feel more comfortable asking and reading questions and answers about online sexual content if it is presented anonymously where they already spend their time, such as online teen forums and social networking websites.

Lastly, it is the authors' opinion that adolescent school-based sex education should be strengthened to include more information about the characteristics of computer-mediated communication, especially in regards to sexuality, sexually-related online risks, their potential impact, and steps to aid in coping. Increased discussion and knowledge could reduce adolescents' feelings of vulnerability online and increase their feelings of empowerment, as the adolescents would have information they could utilize if and when they encountered an unwanted sexual stimulus. With more communication skills built around this topic, they might even confide these incidents more to their peers and trusted adults.

This study's findings should be considered with some limitations in mind. First, the study was conducted with participants in the Czech Republic and cultural differences may have played a role. Secondly, the sample was skewed based on sex; there were significantly more female participants interviewed than male participants even though adolescents were recruited from websites where there exist a similar proportion of male and female users. Both

girls and boys have reported to be bothered by online sexual content (Livingstone et al., 2011). This study's findings may thus be affected by our particular sample, as perceptions of unwanted sexual content may differ between genders in some, as yet undetermined, ways. Our study was also limited through our methodology; specifically, as the interviews were conducted online, the participants' ages and sexes could not be validated through independent means. However, this study focused on a sensitive topic and some adolescents might have found it difficult to share their experiences in person or if they had to disclose their identity. This study focused on the experience of adolescents who encountered bothering sexual content online. However, future studies could add further information exploring intercultural differences and examining how various coping strategies may help young people.

References

- Brown, K., Champbell, S. W., & Ling, R. (2011). Mobile phones bridging the gap for teens in the U.S.? *Future Internet* 3, 144-158. doi:10.3390/fi3020144
- Charmaz, K. (2008). Grounded theory. In J. Smith (Ed.), *Qualitative psychology: A Practical Guide to Methods* (2nd Edition) (pp. 81-110). London: Sage Publications.
- Cooper, A. (1998). Sexuality and the Internet: Surfing its way into the new Millennium. *CyberPsychology & Behavior*, 1(2), 187-194. doi:10.1089/cpb.1998.1.187.
- Cooper, A., & Griffin-Shelley, E. (2002). The Internet: The next sexual revolution. In A. Cooper(Ed.), *Sex and the Internet: A guidebook for clinicians* (pp. 1-15). New York, NY: Routledge.
- Daneback, K., & Löfberg, C. (2011). Youth, sexuality and the internet: Young people's use of the internet to learn about sexuality. In E. Dunkels, G-M. Frånberg, & C. Hällgren

- (Eds) *Youth culture and net culture: Online social practices*, (pp. 190-206). Hershey, PA: IGI Global.
- Daneback, K., & Ross, M.W. (2011). The complexity of internet sexuality. *Advances in Psychosomatic Medicine*, 31, 121-134.
- Döring, N. M. (2009). The Internet's impact on sexuality: A critical review of 15 years of research. *Computers in Human Behavior* 25, 1089-1101.
doi:10.1016/j.chb.2009.04.003
- Finkelhor, D., Mitchell, K. J., & Wolak, J. (2000). *Online victimization: A report on the nation's youth* (Online). Alexandria, VA: National Center for Missing & Exploited Children.
- Furman, W., & Wehner, E.A. (1997). Adolescent romantic relationships: A developmental perspective. *New Directions for Child Development*, 78, 21-36. doi: 10.1002/cd.23219977804
- Gagnon, J. H., & Simon, W. (1973). *Sexual conduct: The social sources of sexuality*. Chicago: Aldine.
- Graya, N.J., Klein, J.D., Noyce, P.R., Sesselberg, T.S., & Cantrill, J.A. (2005). Health information-seeking behaviour in adolescence: The place of the internet. *Social Science & Medicine*, 60, 1467–1478. doi:10.1016/j.socscimed.2004.08.010
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology*, 25(6), 633-649.
doi:10.1016/j.appdev.2004.09.005
- Livingstone, S. (2007) From family television to bedroom culture: Young people's media at home. In: Devereux, Eoin, (Ed.) *Media studies: key issues and debates* (pp. 302-321). London, UK.: SAGE Publications.

- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children. Full findings*. LSE, London: EU Kids Online.
- 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 & Society*, 34(3), 330-358. doi: 10.1177/0044118X02250123
- Savin-Williams, R., & Diamond, L. (2004). Sex. In R. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 189–232). New York: John Wiley & Sons.
- Smahel, D., & Subrahmanyam, K. (2007). „Any girls want to chat press 911: partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology & Behavior*, 10, 346-353. doi:10.1089/cpb.2006.9945.
- Staksrud, E., & Livingstone, S. (2009). Children and online risk: Powerless victims or resourceful participants? *Information, communication and society*, 12(3), 364-387. doi: 10.1080/13691180802635455
- Strauss, A., & Corbin, J. (1999). *Základy kvalitativního výzkumu: postupy a techniky zakotvené teorie* [Basics of Qualitative Research]. Boskovice: Albert.
- Subrahmanyam, K. & Šmahel, D. (2011). *Digital youth: The role of media in development*. Springer: New York.
- Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Connecting developmental constructions to the Internet: Identity presentation and exploration in online teen chat rooms. *Developmental Psychology*, 42, 395-406. doi: 10.1037/0012-1649.42.3.395
- Suzuki, L.K., & Calzo, J.P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Applied Developmental Psychology* 25, 685-698. doi:10.1016/j.appdev.2004.09.002

- Wolak, J., Mitchell, K., and Finkelhor, D. (2006). Online victimization of youth: Five years later. *National Center for Missing & Exploited Children Bulletin 07-06-025* (Online). Retrieved from: <http://www.unh.edu/ccrc/pdf/CV138.pdf>.
- Wolak, J., Mitchell, K.J., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth internet users. *Pediatrics*, 119, 247-257. doi: 10.1542/peds.2006-1891