

The Internet, Sex, and Youths: Implications for Sexual Development

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This article summarizes the research to date on youths' online sexual activities pertaining to socialization, education, and entertainment. It presents how these activities relate to the overall sexuality and mental health of adolescents and young adults, while situating the findings within a perspective of psychosocial and sexual development. It also provides information relevant to the prevention and treatment of problematic online sexual behavior in youths.

INTRODUCTION

As youths (aged 12–24) have become the largest population using the Internet for communication purposes (Pew Internet Project, 2001), their online sexual activities have emerged as an area of enquiry. Social scientists have started to gather evidence on young adults' use of the Internet for sexual education and entertainment (Goodson, McCormick, & Evans, 2000; Weiser, 2000; Boies, 2002). This article summarizes what we now know about youths' online sexual activities and how they relate to their overall sexuality and their mental health, while situating the findings within a developmental perspective. It also provides suggestions for prevention and treatment of problematic online sexual behavior in youths.

WHAT ARE ONLINE SEXUAL ACTIVITIES (OSA)?

Online sexual activities (OSA) refer to Internet use (including text, audio, graphic files) for any activity that involves sexuality for the purposes

of recreation, entertainment, exploration, support, education, commerce, and/or seeking out sexual or romantic partners (Cooper & Griffin-Shelley, 2002). These distinctions were not clearly made in the first landmark study of OSA pertaining to entertainment-related online sexual behavior in adults (Cooper, Scherer, Boies, & Gordon, 1999). More recent studies have differentiated, in samples of university students, OSA relating to establishing and maintaining relationships, obtaining information related to sexuality, and sexual arousal and entertainment (Goodson et al., 2000; Boies, 2002).

WHY SHOULD WE PAY ATTENTION TO YOUTHS' OSA?

North American youths are continuously exposed to sexuality in the media in one form or another as they are developing their own sexual beliefs and patterns of behavior, and as parents and schools remain reluctant to discuss sexual topics (Brown, 2002). Brown argued that most of the mass media rarely depict the three C's of responsible sexual behavior: Commitment, Contraceptives, and consideration of Consequences. When asked where they have learned the most about sex, older adolescents (16–17 years old) put friends first, then parents, and then the media (Yankelovich Partners, 1993). The relatively few correlational and still fewer experimental studies of the relationship between exposure to sexual media content and effects suggest that the media do have an impact in at least three ways: by keeping sexual behavior on public and personal agendas, by reinforcing a relatively consistent set of sexual and relationship norms, and by rarely including sexually responsible models (Brown, 2000).

Youths (aged 12–24) are the largest population using the Internet for communication purposes (Pew Internet Project, 2001). The same source reported that despite youths' common usage of the Internet to send or receive email (99%) and send instant messages (89%) most of them do not believe that the Internet is a good medium to start or maintain deep relationships (Postmes, Spears, & Wolbert, 2000). In their review of how the Internet is used to promote sexual health, Keller, Labelle, Karimi, and Gupta (2002) noted that 46 percent of 12–17 year olds have gone online in the past month, spending an average of 303 minutes per month online (CyberAtlas, 2000). Many teens use mass media, including the Net, for sexual information. Although teens say they would prefer to get sexual education from their parents, more than half of adolescents report learning about sexual issues from TV, movies, and magazines (Kaiser Family Foundation, 1998). According to one American national survey of young people (10–17 years old) who regularly used the Internet, one out of four said he or she had encountered unwanted pornography in the past year, and one out of five had been exposed to unwanted sexual solicitations or approaches (Finkelhor, Mitchell, & Wolak, 2000). Similarly, 87% of sampled Canadian university

students reported having received unsolicited sexual material while online (Boies, 2002).

While the accuracy of information found on the Internet is subject to the legitimacy of its host site, many people are likely to turn to the Internet for sex education. Barak and Fisher (2002) noted that the Internet's core characteristics are particularly suited to the delivery of sexual health education interventions. They proposed that age-appropriate and nontraumatic exposure to sexuality such as chat room conversations about sex and intimate relationships can promote the development of positive attitudes toward sexuality in children and teenagers. Examples of educational activities include online sexual advice columns, web sites that disseminate sexual information, moderated chat rooms and the online delivery of professional mental health services (Cooper, Boies, Maheu, & Greenfield, 2000). The Internet is also used to address many societal sexual issues and to create communities for disenfranchised minorities such as sexual minorities and persons with disability (Cooper, Putnam, Planchon, & Boies, 1999). The Internet remains a largely untapped venue to educate young men and women. The sexual revolution brought by the Internet is offering young people new opportunities to engage in exploratory activities, such as seeking romantic and sexual partners and accessing sexually explicit material for entertainment and masturbation (Boies, 2002). Social scientists and mental health professionals need to understand the online experience of youths to better support them in their relational and sexual development.

ONLINE SEXUAL ACTIVITIES IN YOUTHS

Formal investigations of OSA in youths have been conducted with samples of university students. Goodson et al. (2000) expanded the study of OSA beyond those related to entertainment. They developed a descriptive instrument designed to assess students' perceptions and behavior when searching the Internet for purposes related to relationships and sexual entertainment or education. Goodson et al. found that the respondents' attitude toward sex information seeking and sexual entertainment varied based on the frequency of their Internet usage for those purposes. Weiser (2000) collected data from a 21-item Internet Attitude Survey administered to introductory psychology students for credit ($N = 506$) and from an online version submitted to numerous popular search engines ($N = 684$). He concluded that some OSA (online chats, meeting and interacting with new people, looking for romantic and sexual relationships) reflected affiliative needs. While many young people have described social benefits of their OSA, including experiencing connection with others and establishing some form of intimacy, Weiser noted the risk of decreased social integration.

A survey of 760 Canadian students (Boies, 2002) reported online sexual activities pertaining to dating, education and entertainment, and respondents'

reactions to online sexual entertainment material. Forty percent of the sample had spent an average of 20 minutes a week connecting with new people. Moreover, 6.5% of respondents in relationships used the Internet as their primary mode of communication (i.e., rather than the telephone or in-person contact). Twenty-one percent of the sample's respondents had obtained their first sexual education material from the Internet. The average age at which they first used the Internet for sexual education was 18.5 years compared to 17.7 years for sexual entertainment and 15.5 years for general purposes. A number of variables related to meeting people on the Internet were correlated. Going online for the purpose of seeking new people was positively correlated to the use of online dating services and sex-oriented chat rooms as well as seeking sex educational information. Seeking online educational material was positively associated with frequency of online masturbation that in turn was strongly related to online viewing of sexually explicit material (SEM) and moderately to offline viewing of SEM. Boies (2000) questioned if these associations could be partly related to how young people define and understand what is deemed to be sexually-related educational material even though it was clearly defined in the study as searching the Internet for information or advice on sexual topics, problems or practices (e.g., pregnancy, diseases, sexual positions, erection difficulty).

The representation of university-age online sexual entertainment seekers was almost identical in a Canadian sample (42%) (Boies, 2002) and an American sample (43.5%) (Goodson, 2000). It was significantly higher however than that of middle-aged adult samples estimated between 15 and 31% (Cooper, Scherer, et al., 1999; Greenfield, 1999; Leone & Beilsmith, 1999; Egan, 2000). Boies' findings provided additional information on entertainment and gratification-seeking behaviors. Six percent of his sample had viewed sexually explicit material (SEM) and masturbated online daily, which suggests a link between seeking SEM and seeking orgasm or gratification. However, the context in which masturbation took place remains to be investigated since the survey was not designed to identify specific online venues utilized (e.g., viewing of still pictures, live two-way audio-visual exchanges via camera, steamy chat room conversation). Forty-four percent of students who used the Internet for sexual entertainment started doing so at age 16 or younger, of which 7.5% did so before the age of 14. About 8% of total respondents admitted engaging in sexual chatting.

SITUATING OSA IN THE OVERALL CONTEXT OF YOUTHS' SEXUAL ACTIVITIES

The few research projects that have examined online and offline sexual behaviour in a same sample focused on the sexual transmission of infections in networks of adults who meet online (Klausner, Wolf, Fischer-Ponce, Zolt,

& Katz, 2000; McFarlane, Bull, & Rietmeijer, 2000). One study provided evidence of an association between sexual activities in both contexts. Ross, Tikkanen and Manson (2000) found that 15.8% of mainly white heterosexual male adult clients of a STI testing clinic had sought sex partners on the Internet and that of those, more than 65% had had sex with partners they met online. The connection between online and offline sexual behavior has also been examined in the context of sexual compulsivity. Clinical observations of concurrent sexual acting out online and offline in sexually compulsive clients were indirectly supported. Only 1% of Internet sexually compulsives limited their behavior to the Internet (Cooper, Delmonico, & Burg, 2000).

Recent survey research (Boies, 2002) provided needed data toward identifying relationships between youths' online and offline sexual activities. The sampled members of the first generation to grow up with the Internet commonly used the medium on a regular basis to meet new people and to date. This was particularly true for men, which is consistent with a previous finding in an older sample (Brym & Lenton, 2001). Going online for the purpose of seeking new people was positively correlated to the use of online dating services and sex-oriented chat rooms as well as seeking sex educational information. Seeking online educational material was positively associated with frequency of online masturbation that in turn was strongly related to online viewing of sexually explicit material (SEM) and moderately to offline viewing of SEM. The results of a factor analysis performed on both online and offline sexual activities distinguished four purposes: seeking romantic and sexual partners online, entertainment, gratification, and sexual exploration offline. In the latter factor, sexual exploration/curiosity was linked to an increase in the number of offline sex partners and a decrease in the frequency of Internet use for sex education.

Internet use for educational purposes was found to be a relatively new yet common practice. Female and male youths began searching the Net for educational material at a comparable average age (18.5 years old) and half of them did so more than a few times a year. By then, the vast majority of respondents had already obtained information from sources other than the Internet.

Despite the ease of access that the Internet provides to sexually explicit material (SEM), more respondents had it offline than online in the last 12 months. However, an analysis of the frequency of SEM viewing in the subsample ($n = 336$) of those who had engaged in one form of online sex entertainment or another, showed that 40% of them viewed SEM online and offline at a frequency of once a month or less and 12% of them at least once a week. These frequent viewers were more highly represented in online seekers than in offline seekers of SEM. Thus, frequency of the behaviour is likely an important variable to measure in the interaction of online and offline sexual behavior. While the Internet increases the ease of access and frequency

of viewing SEM, individuals who frequently seek x-rated material are likely to do so both online and offline. Offline sexual activities distinguished themselves in two ways. More than two out of three surveyed young adults had offline sex partners but only one out of ten had online sex partners. Forty-three percent of the sample had gone to an offline public venue offering erotic entertainment at least once in the last year.

Gender Differences in Online Sexual Activities (OSA)

Some evidence suggests gender differences in some young adults' OSA. Weiser's (2000) previously described study found that compared to female students, male students were more highly represented in non-directed activities ("just looking") and playing games. Female students reported more often than males using the Internet for email. In the online self-selected sample, women were more likely to report going online to meet new people. Weiser concluded that women seem to use the Internet more for social support. This argument may be premature and failing to take into account the types and purposes of contacts. Boies (2002) found that slightly more young men than young women sought new online contacts.

The data pertaining to online sexual education activities do not lead to firm conclusions. In Boies' sample (2002), the male-female ratio of respondents who had used the Internet for sexual education in the last 12 months was equal at the frequency of once or twice a year. Men were more likely to have used the Internet for this purpose in the last 12 months and to do so at higher ratio (2:1) than women. However, more women than men reported having used the Internet for sex education when participants were asked to consider their entire usage history. Women were more likely than men (2:1) to have already consulted offline educational resources before they ever went online for sex education. Men's search for online educational material at an earlier age (average of one year) parallels their early involvement in sex entertainment.

Gender differences were notable in OSA relating to sexual entertainment. Boies (2002) found that more young men than women engaged in viewing and forwarding SEM. The male-female ratio for viewing x-rated material and for forwarding it were respectively 3:1 and 2:1. Men went online for sexual entertainment at a significantly earlier age (17) than women (18.5). Men also made up 75% of the respondents who sought x-rated material online before age 14. Consistently, we know that most online sexually explicit material is designed and developed for men. Research is needed to explore the relationship between these trends and the nature, characteristics, and quantity of the educational and entertainment material available online, as well as physiological development and socialization. These gender differences may be linked to how men and women define what constitutes educational material. As such, these differences should be fully considered when

exploring the interactive learning potential of the Internet and its use for sex education. McKay (personal communication, September 2002) noted that researchers and educators traditionally distinguish educational from entertainment sexually related material. He offered that the Internet might present a unique opportunity to build on people's attraction to erotica to educate them. Age-appropriate "sexy" educational material online could satisfy what seems to be, especially for men, a pervasive curiosity about sexual images and practices.

Gender differences previously found in chat room usage disappeared in this younger sample in which women were more highly represented. As previously observed (Cooper, Scherer et al., 1999; Weiser, 2000) more men than women engaged in viewing and forwarding SEM and in online masturbation. However, the current data indicates that young educated women view SEM in a higher proportion (male-female ratio: 3:1) than women in other samples (Cooper, Scherer et al., 1999). Similarly men and women participated in forwarding online SEM at a ratio of 2 to 1. While the absence of gender differences in the use of sex chat rooms and in the number of online sex partners suggests that women are just as sexually active as men in sexual activities that have more of an interactive component supporting sexual fantasy. This could be explained in part by a sense of greater control and safety in regard to the development of the relationship. The percentage of online entertainment seekers is likely to increase in the next generation of Internet users, and likely at an earlier age, as the medium becomes more easily accessible. Additional studies are needed to better understand the online sexual behavior of women and to test the consistency of the findings in rural and metropolitan samples where the perception of freedom to explore sexual matters may vary.

REACTIONS TO ONLINE SEXUALLY EXPLICIT MATERIAL (SEM)

Cooper and his colleagues (1999b) measured online involvement in sexually explicit material (SEM) at behavioral, cognitive, emotional, and physiological levels. Using a factor analysis, they differentiate four types of involvement: (1) action (downloading, chatting, etc), (2) reflection (cognitive preoccupation), (3) excitement (sensation without arousal), and (4) physiological arousal. In the same sample, additional findings highlighted the complexity of users' emotional states associated with their online activities. Most respondents (87%) claimed never feeling shame or guilt about their online behaviour. However, a similar percentage (70%) said keeping the amount of time spent online secret from others. Goodson (2000) examined a range of emotions elicited by viewing sexually explicit materials online in a university sample. Results revealed that sexual arousal was the fourth most frequently reported emotion, preceded by feeling entertained, disgusted, and having a

general feeling of excitement and anticipation. Goodson also found that for non-negative emotions, the strongest predictors emerging from a regression model were expectations and expectancies (or attitudes). No predictors were identified for negative emotions. These studies suggest that people's ability to assess their emotional reaction to sexual material is likely subject to complex interactions between various unidentified factors.

Goodson et al. (2000) found a positive correlation between student attitudes regarding their online sexual activities and the frequency of use. This suggests that people assess material more positively as they become familiar with it. Previous research has indicated that repeated exposure to an image of a sexual behavior increases one's positive evaluation of that behavior over time in people who do not already feel very negatively about it in the first place (Byrne & Osland, 2000).

Students' perception of the risks and benefits of using online sexual education and entertainment material highlighted interesting trends. Boies (2002) found that respondents indicated benefiting from the educational material found online. Most (89%) felt they had learned from it and half said that it helped them enjoy sex more (52%) or improve their in-person sexual relationships (51%). A similar proportion (50%) reported that, compared to their pre-internet information-seeking days, they felt more comfortable discussing sex in their in-person friendships and more satisfied with their sexual relationship with their spouse/partner (44%). When it came to online SEM, most respondents said they were curious about it but they did not consider it to fulfill their fantasies or to improve their sexual relationships. While more than half (57%) of respondents indicated being very or somewhat disturbed by the SEM, many appear to see it as arousing and as satisfying their curiosity. Males agreed significantly more often than women with all statements except those indicative of online SEM being boring or disturbing. Respondents who found the Internet sexually explicit material boring also found it disturbing. These two reactions were negatively correlated with all the others reactions. The highest positive correlations were between learning new techniques and improving sexual relationships offline, fulfilling sexual fantasies, and experiencing sexual arousal. Fulfillment of sexual fantasies was correlated to being aroused and helping satisfying sexual needs.

The link between reaction to SEM and sexual behavior was further investigated. Boies (2002) found that viewers of online SEM who masturbated online assessed the material more favorably than those who did not masturbate. Masturbators were less likely to find the material they encountered to be boring and to satisfy their curiosity. They were more likely to report finding the material arousing and to serve as a means to fulfill their sexual fantasies and satisfy their sexual needs. Men who masturbated online seemed to be most entertained by their activities. They less often reported being bored or disturbed by the material. Masturbation appears linked to people's perception of the benefits or impact of their online sexual entertainment habits.

Physiological and psychological responses to masturbation and personality factors probably influence how people interpret their experience. It is unclear if these results relate to cognitive distortions and mood-altering reinforcement found in sexually compulsive individuals (Cooper, Putnam, Planchon, et al., 1999).

INTERNET RELATED PROBLEMS

The concept of Internet Addiction has been used to measure problematic Internet use, yet the theoretical problems about the concept have been largely ignored. Shaffer, Hall, and Vander Bilt (2000) noted that the breadth and variety of information and activities available through the medium means that an addiction to it is unlikely to be a single phenomenon. They argued that Young's (1996) adaptation of the criteria for pathological gambling was premature. Similarly, the attribution of causality between Internet usage and decline in social involvement and psychological functioning (Kraut et al., 1998) did not take into account that the excessive use could be related to the expression of co-morbid disorders. Griffiths (2000) studied five cases of excessive computer usage using the recognized criteria for addiction (salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse). He found that the excessive use in the majority of cases was purely symptomatic and was highlighting how the subjects used the Internet to counteract other deficiencies. In studying university student's Internet usage, such deficiencies might relate to situational and developmental factors such as social skills and separation from the family of origin.

A study of Internet-use patterns among 531 college students (Scherer, 1997) found that of the 73% of students who accessed the Internet at least once a week, 13% reported that their use was excessive and significantly interfered with personal functioning. They were deemed dependent because of their reporting of three or more symptoms of dependency. "Internet dependent" students reported all symptoms significantly more often than did other students. The ten symptoms used measured aspects of dependency (e.g., time, impact on responsibilities, attempts to control the behavior, tolerance, and withdrawal). Armstrong, Phillips, and Saling (2000) noted that if Internet addiction exists, it appears to be more similar to impulse control compulsive, and obsessive disorders as it lacks chemically-based dependence. They proposed that the addictive element of Internet use rests on the search for stimulation through interactive services or as an escape from real life. Armstrong and his colleagues developed a 20-item Internet Related Problem Scale (IRPS) assessing eight factors (tolerance, escape from problems, reduced activities, loss of control, negative effects, withdrawal, cravings, and introversion) that correlated positively with the MMPI-2 Addiction Potential Scale (Hathaway & McKinley, 1989) thereby reintroducing the idea of dependency.

In the area of online sexual activities, there is some evidence suggesting that measuring problematic behavior can be done through both dependency and compulsivity. Scherer (1997) found that 15.4% of 531 of her college student respondents sought sexual material online. She reported that significantly more dependent students (41.7%) engaged in the activity compared to non-dependent students (11.6%). A large scale online study of adults who had gone online for sexual pursuits (Cooper, Scherer, et al., 1999), found that excessive usage, as measured by time spent in an activity, was positively correlated with the level of stress experienced and compulsivity, as measured by sexual sensation seeking. There is no information about the relationship between excessive Internet use and educational activities pertaining to sexuality. Boies (2002) concluded that, the broader concept of dependency, when deemed to include obsessive cognitions and compulsive behaviors, appears most appropriate for investigating simultaneously educational- and entertainment-related online sexual activities.

INTERNET USE AND PSYCHOLOGICAL WELL-BEING

Studies of problematic Internet use in college students have helped us understand the relationship between Internet use and mental health. Griffith (2000) observed excessive Internet use as being mostly symptomatic and used to counteract other deficiencies, which is most relevant in university students facing situational and developmental factors. Morahan-Martin and Schumacher (2000) looked at the incidence of pathological Internet use and its correlates. Pathological use was determined by responses to three questions that assessed evidence that Internet use was causing academic, work, or interpersonal problems, distress, tolerance symptoms, and mood altering use of the Internet. Sixty-five percent of their sample reported limited (1–3) symptoms and 8.1% reported problematic Internet use (4 or 5 symptoms). Pathological users scored significantly higher on the UCLA Loneliness Scale, and were socially disinhibited online. Igarashi (2002) assessed the effect of social skills on loneliness in 211 Japanese college students (Study 1) and 164 participants recruited through the Internet (Study 2) while taking into account the participants' social networks both face-to-face and on the Internet. The effect of social skills on loneliness was mediated by the face-to-face social network variables. Computer-mediated communication (CMC) variables were affected by social skills, but had only weak effects on loneliness. Social skills directly affected loneliness. The lack of nonverbal cues in CMC was proposed as a possible explanation for the weak effects of social network variables of CMC on loneliness.

There is also evidence that Internet use can be beneficial for some young adults. Shaw and Gant (2002) studied positive effect of Internet

usage on depression, loneliness, self-esteem and social support. Forty college students engaged in 5 chat sessions with an anonymous partner (male-female or female-female dyads). At 3 different intervals they were administered scales measuring depression, loneliness, self-esteem, and social support. Changes in scores over time showed that loneliness and depression decreased significantly with Internet use, while perceived social support and self-esteem increased significantly.

ONLINE SEXUAL ACTIVITIES AND PSYCHOSOCIAL AND SEXUAL DEVELOPMENT

What constitutes adaptive or maladaptive behavior is best defined when considering the developmental, relational, and social contexts in which the behaviors occur. Such is also likely the case when studying OSA. Yet most research has focused on the problematic aspects of OSA leaving it unclear how they relate to psychosocial and sexual development.

Cooper, Scherer, and their colleagues (1999) identified a correlation between time spent online in sexual pursuits, emotional distress, and the presence or development of problems. Davis (2001) argued against time online as a single indicator of problems and proposed instead a schema in which he defined Internet sexual behavior as adaptive as long as it takes place for an “expressed purpose” and “in a reasonable amount of time without cognitive or behavioral discomfort”—and as long as individuals maintain their ability to separate Internet from real life communication and use the medium as a tool rather than as a source of identity. These views offer a context for the study of OSA, and their potential influence on psychosocial functioning in young adults.

Boies (2002) found that university students had attempted to make contact with new people online and engaged in sexual exploration both online and offline. Online exploration was almost entirely restricted to solitary activities while offline exploration reflected a desire to satisfy curiosity with a partner. Similarly, a recent survey of adult Swedish Internet users (Cooper, Månsson, Daneback, Tikkanen, & Ross, 2003) found that while *accessing erotica* and *seeking partners* were two main reasons for involvement in online sexual activities, younger people (18–24) in that sample used the Internet to explore and obtain sexual gratification but not necessarily to seek partners. This suggests a difference in purpose between sexual exploration and sexual gratification. Erikson’s (1980) developmental schema reminds us that adolescence and young adulthood represent developmental periods in which the foundation for future relational intimacy is laid and in which individuals engage in the pursuit of affiliations. It follows that many adolescents and young adults attempt to fulfill affiliative needs through their online pursuits.

Weiser (2000), using a university student sample, concluded that some Internet sexual activities—online chats, meeting and interacting with new people, looking for romantic and sexual relationships—reflect affiliative needs. While many young people have described social benefits of their online sexual activities, including experiencing connection with others and establishing some form of intimacy, Weiser noted the risk of decreased social integration. This is consistent with the observations of many clinicians that social isolation is a common negative consequence of excessive online sexual behavior (Young, 1996; Putnam, 2000). Carnes (2001) described the replacement of real-life relationships with virtual relationships as a form of relational regression.

The potential negative consequences of exposure to sexually explicit material have been a subject of investigation in the field of human sexuality. In a recent review of the literature, Byrne and Osland (2000) pointed out that while research findings have been inconsistent, studies have led to a consensus that erotica can have a shaping effect on behavior. Some researchers have cautioned that long-term exposure to sexually explicit material may decrease attraction to one's primary partner or increase the desire for emotionally uncommitted sexual involvement. From a developmental perspective, then, it must be considered that overuse of online sexual activities may have a detrimental effect on the age-appropriate pursuit of affiliations in young people. However, motivations for sexual expression vary widely and may reflect the pure pursuit of sexual information or sexual gratification, an attempt to meet one's affiliative needs, an attempt to gain or bolster a sense of identity, or a defense against social anxiety or social isolation.

Boies, Cooper, and Osborne (2004) found that Internet-related problems (as measured by an 11-item Likert scale assessing seven factors: tolerance, escape from problems, reduced activities, loss of control, negative effects, and withdrawal and cravings; standardized alpha 0.87) were associated with university students' online sexual activities related to seeking relationships, sexual information, and sexual entertainment. Activities facilitating interpersonal contact were most strongly correlated to Internet-related problems suggesting that Internet use is related to a need for affiliation in some individuals. However, seeking sexual information and masturbating online were the two activities most strongly associated with dissatisfaction with people's offline lives (i.e., low environmental mastery and social support from friends and family) and the perception of deriving social support from contacts with online friends.

Based on these correlations, Boies and his colleagues (2004) proposed that young adults appeared to use the Internet to meet some of their needs for affiliation or to compensate for unsatisfactory offline lives in part by seeking information and gratification from the Internet. The researchers expected specific types of OSA to serve distinct purposes and as such to relate differently to people's functioning. They compared four groups of users, distinguishable by

their participation in sexual information and entertainment-seeking activities, on Internet-related problems and the indicators of psychosocial functioning. Patterns emerged based on type of involvement with OSA and participation in offline life. Young adults who did not use the Internet for either sexual information or entertainment were more satisfied and connected with their offline life than any other groups. Those using the Internet for both types of activities were most involved with the medium. They appeared to use it to meet their social support and sexual needs at the detriment of their offline life. They also reported the highest increased sense of connection to their family attributable to their overall Internet use suggesting that they are frequent users of the medium for multiple purposes. Young adults who only sought sexual information online had strong offline affiliations and used the medium as a tool to increase their knowledge of sexuality. Those seeking only sexual entertainment engaged in online sexual exploration without showing signs of being dissatisfied with their offline life. Seeking either information or entertainment does not appear to be negatively associated with lower psychosocial functioning. This is likely due, as Davis (2001) suggested, to these people's ability to engage in OSA for an expressed purpose and to use the Internet as a tool rather than a source of identity.

The above findings suggest that young adults using the Internet to meet needs relating to social support, environmental mastery and sense of connection to family, and to increase their knowledge of sexual matters and explore their sexuality, are less connected to their offline life. This disconnection looks as if it increases with the level of Internet involvement, especially as it relates to sexuality. Together, disconnection from offline life and high involvement in OSA represent an increased risk of over-reliance on the Internet. Consistently, students who had online friends and felt supported by them were more likely to be involved in both online sexual information and entertainment activities. Similarly, students who did not engage in OSA felt less social support from online friends and attributed little increase in their sense of connection to family as a result of their overall Internet communications. These patterns of involvement reflect that some young adults see the Internet as an alternative venue for social and sexual development. Their Internet use may reflect an attempt to meet affiliative needs, of which sexuality is a component. However, they are not likely to be satisfactorily met, as online friends were not endorsed as a significant source of social support compared to offline friends and family.

The above findings are consistent with Weiser's (2000) conclusion that despite the social benefits that young people attribute to their online sexual activities, including experiencing connection with others and establishing some form of intimacy, there is a risk of decreased social integration with use of the Internet for socio-affective regulation. Consistent with previous findings (Cooper, Scherer, et al., 1999), it may be that involvement in online sexual activities (and possibly time alone), regardless of purpose, is the

greatest risk factor. However, young adults who use the Internet to a degree detrimental to their participation in their offline community life appear to be most at risk of developing relational and sexual problems. This is consistent with Carnes' (2001) suggestion that high usage of the Internet for the gratification of social and sexual needs and for socio-affective regulation increases one's sense of alienation from self and others, potentially leading to relationship regression. This is particularly serious for young adults as it can significantly delay or distort the developmental stage that they are navigating that has to do with issues related to identity, affiliation, and intimacy (Erikson, 1980).

It remains unclear whether individuals develop problematic sexual behavior as a result of their online activities or if pre-existing psychopathology is triggered by Internet sexual experience (Davis, 2001). The young people in the reviewed studies were facing important developmental tasks characteristic of their cohort. Personal characteristics related to the ability to deal with change and to adapt to a new environment surely played a role in interpreting respondents' success at mastering social space and tasks. In that sense, their level of relational development and their life circumstances may play a role in their involvement in online sexual activities. While the results of these studies do not explain if online sexual activities predict low capacity for intimacy or vice versa, together those factors co-exist with lower psychosocial functioning. Clearly the direction of this relationship and factors that might contribute to causality are very important issues and should be explored in future research.

In their review of the effects of Internet sexuality on children and adolescents, Longo, Brown, and Orcutt (2002) stressed that it is difficult to assess what is healthy or not when it comes to adolescent sexuality. They noted that the little empirical data that supports our view of adolescent sexuality is often biased by researchers' focus on unhealthy behavior and mental health professionals' view of their own sexual experience. Longo and his colleagues state that an important indicator of sexual health for teenagers is the degree to which the sexual behavior is in the service of developmentally appropriate sexual needs as opposed to primarily nonsexual needs. This is the case when, for example, teenagers engage in sexual activities as a means to tolerate negative feelings, feel a sense of emptiness, or develop a sense of pseudointimacy.

Adolescent males may view pornographic material as a visual aid to masturbation. However, as they date and become attached to primary partners, this type of activity usually decreases. This is because the form of attachment changes and becomes more of a mature love rather than one based on lust. However, what is unknown is if the quantity and content of exposure will predict future compulsive sexual behavior. Clinicians report anecdotally that a high percentage of their patients who are experiencing sexual compulsion have also viewed pornography at an early age. The pornography is reported

to be of an explicit nature and viewed at an age when the individual was unable to fully understand what they were viewing. Due to the surreptitious nature that much of early viewing may have, being able to discuss the content or their feelings about it would not likely be possible.

It has been postulated that viewing violence on television may be associated with violent behavior. For this reason, violence in pornography raises similar concerns. Particular genres of pornography focus on violence and/or humiliation. It is unknown whether this type of sexual activity will be replicated by the viewer. There has been concern that the power of these images have the potential to intrude upon the individual's natural sexual development (Benekik & Brown, 1999; Malamuth et al., 2000). We do not know if this activity will become the primary focus of sexual activity or if teens will follow the same patterns of dating as teens not engaged in this activity.

EVIDENCE OF ONLINE SEXUAL COMPULSIVITY IN YOUTH

Adolescence is a time of risk and change. Some adolescents are at more risk than others for engaging in high-risk or compulsive sexual behaviour. This is thought to be due to biological and psychological factors (Ponton, 2004). Both males and females who reach puberty earlier as well as those from abusive families (Ponton, 2001) are said to fall into this category. Compulsive behavior in adolescents may take many forms. The area most researched is substance abuse. Prevention and treatment programs have been developed over the years to address this ever increasing problem. High risk sexual behavior has been associated with substance-use (Tapert et al., 2001) which in turn is associated with anxiety (NIAAA, 2004). It was recently reported that 20% of those with GAD also had substance-use problems (NIAAA, 2004). The combination of anxiety and substance-abuse problems makes a fertile ground for sexual compulsivity.

There is little information available, beyond clinical observation, on the sexually compulsive behavior of adolescents and young adults. Recently, Boies (2002) found that 3.5% of his college sample viewed sexually explicit material online and masturbated to it at least once a day, which suggests potential compulsivity in this subgroup. Evidence of adult problematic sexual behavior on the Internet has been documented. Cooper, Scherer, Boies, and Gordon (1999) surveyed more than, 9,000 MSNBC website users who had gone online at least once for sexual pursuits and found that the vast majority of respondents spent a small amount of time involved in mostly recreational sexual activity without severe negative consequences on their lives. However, they also identified that 17% of their sample showed signs of sexual compulsivity, of which 8% were deemed sexually compulsive. Subsequent analyses of their data indicated that 13% of respondents showed signs of moderate to

severe problems of compulsivity and distress (Cooper, Delmonico, & Burg, 2000). This is consistent with the incidence of sexual compulsivity estimated by the National Council of Sexual Addiction and Compulsivity to be between 6% and 8% (Amparano, 1998).

TREATMENT

In the absence of validated studies with youth, mental health professionals can refer to and adopt with caution, indicators of problematic internet behavior identified for adults (Cooper, Boies, et al., 1999). Cooper (1998) argued that the Internet places people at risk of developing sexually compulsive behavior because of the anonymity, accessibility, and affordability it offers. A few authors (Kim, 2000; Takkanen & Ross, 2000) have argued that the acceptability of the use of the medium as a normative way to meet and date may also increase the risks. Similarly, the desire to try new experiences for the self (Takkanen & Ross, 2000) can be inviting yet increase the alienation and isolation that can impact sexual development. As previously noted, youths see the Internet as a place to explore yet not necessarily to build relationships.

When dealing with youths, it is crucial to consider the impact of the behavior on social functioning, namely the capacity for intimacy and sense of connection to others, the level of environmental mastery and perceived social support, as well as the development of social skills. One should be careful not to normalize too quickly the behavior as simply sexual exploration without fully understanding how it fits in a youth's life. Common problematic online sexual behaviors are related to consistent use of pornography, compulsive masturbation, and cybersex (actual orgasm seeking behavior). The level of involvement in online sexual activities can be assessed by determining a user's action, reflection, excitement, and arousal (Cooper, Scherer, Boies, & Gordon, 1999). When a problematic behavior is clearly identified, the interventions should aim at re-engaging a youth's sexual development by disconnecting online behavior from sexual energies and redirect them toward more appropriate object choice.

Schwartz's (1994) view that an intimacy disorder—deficits in the ability to form close interpersonal bonds—underlies sexually compulsive behavior and provides a useful conceptual framework when dealing with youths who are in the mist of resolving the conflict between intimacy and isolation (Erikson, 1980). In some way, compulsivity destroys intimacy. To experience intimacy, one must be relatively free of belief systems that distort perceptions of reality as well as the defensive maneuvers that keep others at a "safe" distance. In this sense, therapy relies upon exploration of the cognitive distortions and faulty beliefs systems that interfere with one's capacity for intimacy. An intimate adult relationship demands two reasonably integrated individuals

who feel safety, connection, trust, esteem, and affection in one another's presence. For the sexually compulsive, sex may *be felt* (feel) as the only source of connection with others. The true compulsives' entire lifestyle is built upon their out of control behavior. A continual excitement is maintained from living on the edge, illicitness, and the possibility of being caught and punished. Thus, energy, is used to cover up the shame. Sexually compulsive individuals do not feel deserving of peace, intimacy, and purposeful life. For a detailed cybersex treatment plan of adults, consult the work of Delmonico, Griffin, and Carnes (2002).

When trauma is part of a compulsive's history, there is an unmetabolized rage. We know that in sexual abuse, victims' sexuality awakens early, without direction, and often intensely drives them to repetition. The child is left in an ambivalent state fluctuating between the fear of closeness and injury accompanied by sexual urge. The compulsive behavior is meant to numb out when beginning to think and feel. Thus excitement takes place only when numb. In this context, we can hypothesize that numbing serves as a container for excitement. Compulsive behavior appears as a solution: a means of feeling something in the dissociative fog. The resulting experience is that of perceived control when feeling powerless and an illusionary sense of safety, connection, and temporary escape from the aloneness. Psychotherapy offers a replacement for the compulsive highs by the excitement of genuine intimacy. The goal is to help clients recognize the emptiness of the illusion of compulsive connections. In heterosexuals, gender distortions that limit the individual must be challenged. In gay men, it is critical to neutralize homophobia.

Carnes (2001) has written extensively on shame and its association with sexual addiction. Shame can produce anxiety or depression. Therefore anxiety associated with egodystonic homosexual orientation or anxiety due to shame and internal or external homophobia may contribute to compulsive sexual behavior. Research has shown that homosexual males begin sexual activity with other males earlier than heterosexual males begin heterosexual activity with females. They also begin earlier than homosexual females do with other females or males (Weinberg et al., 1994). Willing partners who do not require intimate relationships may contribute to a pattern of short-term or anonymous sexual contact, making it easy to continue a compulsive sexual pattern.

Bancroft and Janssen (2000) have proposed a theory of male sexual function that situates compulsive behavior as a possible symptom of a mood disorder. Some males become hyposexual when suffering from a mood disorder and some become hypersexual. Adolescents have been treated with a combination of psychotherapy and medication in the recent past. The use of SSRI's has recently been questioned because of an apparent increased risk of suicide associated with the irritability produced by the medication.

Although this has been found not to be the case, prescribers will remain cautious (Wong et al., 2004).

RECOMMENDATIONS

The occurrence of sexual activities on the Internet offers an opportunity to study the educational needs and preferences of young adults to design effective resources. Sex educators and therapists who intervene with adolescents and young adults should consider how Internet usage shapes understanding of sexuality, sexual identity, and the ability to develop and maintain intimate relationships. To that effect educators, therapists, and researchers working in the field of human sexuality are encouraged to:

- 1) Update offline and online sex education programs to reflect the latest data on Internet sexuality.
- 2) Consider the role of cybersex in the development of healthy and compulsive sexual behavior.
- 3) Formally investigate how reducing the traditional gap between sexually-related material that is educational and entertaining may serve to develop programs that support the development of healthy sexuality.
- 4) Increase the knowledge that physicians, therapists, social workers, and community program directors have of internet sexuality and its implications for youths

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