

Internet Gambling Amongst Adolescents: A Growing Concern

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Abstract Gambling researchers have often reported that research in the field of gambling remains in its infancy compared with other addictive behaviors. Twelve years ago Dr. Mark Griffiths' seminal research on understanding adolescent gambling and problem gambling behaviors was published. Today, adolescent gambling research is no longer in its infancy. Research in the field has made great strides and has evolved as a result of Dr. Griffiths' work. His qualitative investigations and insight into understanding the situational, environmental and social contexts associated with adolescent problem gambling has inspired continued efforts to better understand this phenomenon. Dr. Griffiths' insights and predictions of the impact of technological advances associated with changing structural characteristics in electronic gaming machines and the widespread impact of Internet and mobile gaming has spurred new research. For most adolescents gambling remains a form of entertainment without serious negative consequences. Yet, adolescent pathological gamblers, like their adult counterpart and independent of the negative consequences resulting from their excessive gambling, continue to engage in a wide variety of gambling activities. Internet gambling amongst adolescents clearly represents new challenges and problems. Some recent research concerning the risks associated with adolescent Internet gambling is provided.

Keywords Adolescent problem gambling · Internet gambling · Mobile gaming

It has long been acknowledged that adolescents engage in multiple forms of risky behaviors including smoking, substance use (drugs and alcohol), dietary fads, unsafe sexual practices, and dangerous driving (Jessor 1998; Romer 2003). Yet it was not until a number of researchers began examining prevalence rates of gambling behavior among adolescents in the late 1980s that problem gambling in this age group came to the forefront. At that time,

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Mark Griffiths and Sue Fisher in the United Kingdom and Durand Jacobs and Rachel Volberg in the United States began publishing their research highlighting the need to be concerned about adolescent gambling behaviors.

In 1995, Dr. Griffiths produced the seminal work summarizing the current state of knowledge of youth gambling behavior at that time (Griffiths 1995). This work, while focusing on adolescent fruit machine playing, highlighted the need to more fully understand youth gambling behaviors, the influences of environmental and social contexts upon adolescent gambling, and the potential impact of the technological advances being incorporated within electronic gambling machines. Dr. Griffiths' work raised many important questions as to the risk and protective factors associated with adolescent gambling behavior, situational concerns, why some individuals appear to be more vulnerable than others, and the importance in understanding the structural characteristics of electronic gambling machines to help explain their appeal. Dr. Griffiths, in the first book devoted exclusively to adolescent gambling, raised serious questions as to the potential long-term negative impact of adolescent gambling and possible treatment approaches.

For the past two decades, Dr. Griffiths' scholarly contributions toward advancing the field of adolescent gambling have been numerous. As a result of his work attention to adolescent gambling behaviors grew in North America. Early adolescent gambling studies were being conducted by Henry Lesieur, Durand Jacobs, Rachel Volberg, Howard Shaffer, and Robert Ladouceur, with much of our own work beginning at this time. This work was further advanced by the 1995 North American Think Tank, convened at Harvard Medical School, which sought to address the social, economic and health problems associated with adolescent gambling problems. Experts in education, finance, government, the gambling industry, health care, and the judiciary came together to address the growing issues associated with adolescent problem gambling (see Shaffer et al. 2003).

Trends between 1984 and 1999 indicated a significant increase in the proportion of youth who reported gambling within the past year and who acknowledged serious negative gambling-related problems (Jacobs 2000). There was growing body of evidence suggesting that underage youth were actively participating in a wide variety of both regulated and non-regulated forms of gambling. Simultaneously, during this period, the landscape of gambling was dramatically changing, with greater numbers of jurisdictions introducing regulated forms of gambling; sometimes with age restrictions and other times with "recommended age restrictions" (this was particularly common among Lottery Corporations in Canada).

A recent summary and investigation of long-term trends and future prospects of youth gambling in North America suggests that within the past year two thirds of legally underage youth have gambled for money (Jacobs 2004). In the U.S. and Canada, findings suggest that approximately 15.3 million 12–17 year olds have been gambling, while 2.2 million are reported to be experiencing serious gambling related problems. Increased levels of gambling among adolescents have been reported in North America, Europe, Asia, Australia, New Zealand and Iceland (Abbott and Volberg 2000; Azmier 2000; Fisher 1993; Griffiths 1995; Gupta and Derevensky 1998 National Research Council 1999; Olason et al. 2006) with between 4–8% of youth experiencing pathological patterns of gambling and 10–15% at risk for the development of gambling problems (Shaffer and Hall 1996). With increases in the availability, accessibility and participation in gambling activities, the problems that youth gamblers are facing are likely to increase.

Gambling has not been immune to technological advances. In fact, as early as 1996, Mark Griffiths suggested that with these advances and reduction in the cost of personal computers, high speed connections and online service providers, Internet gambling is likely

to expand rapidly (Griffiths 1996). Evolving technologies continue to provide new gambling opportunities in the form of Internet, online gambling, and more sophisticated slot machines, electronic gambling machines, VLTs, interactive lottery games, interactive television games, and telephone wagering (Griffiths and Wood 2000, 2004). Having carried out research in the area of technological addictions, Dr. Griffiths predicted that the Internet would be a prime venue in which to gamble (Griffiths 1996, 1998) suggesting that it provides a “natural fit” for compulsive gamblers. Coupled with the structural characteristics often found in electronic gambling machines which induces and/or maintains individuals to keep playing, the Internet could likely become an attractive environment for adolescents wanting to gamble.

Dr. Griffiths (1996, 1998, 1999, 2001, 2003, 2006) speculated that the accessibility, affordability, anonymity, convenience, and a social nature as well as the structural characteristics of the software itself could easily promote online gambling. It is predicted that participation in Internet gambling will continue to increase in the next few years as (a) it is easily accessible, (b) individuals can participate from home using a personal computer 24 h per day, 7 days per week, 365 days per year, (c) Internet gambling has the potential to offer visually exciting effects similar to video games, slot machines and VLTs, (d) event frequency is very rapid, and (e) governments throughout the world are either currently offering such sites or at the very least planning to enter this lucrative market (Griffiths and Wood 2000). Given the increasing popularity, accessibility and familiarity of the Internet in general, this represents another venue for potential problems for youth as greater accessibility has been reported to be related to increased gambling, increased money spent on gambling, and increased rates of problem gambling (Jacobs 2004).

Recent research, while extremely limited, has indicated that male college students may be considered at high risk for Internet problems because of its easy accessibility, technological sophistication, and their flexible time schedules (Morahan-Martin 1998). It has also been suggested that young regular Internet users are more likely to gamble on the Internet because of their general familiarity with the Internet (Morahan-Martin and Schumacher 1997). From a psychological perspective, Griffiths (1995, 1998) has argued that the Internet provides an alternate reality and allows feelings of immersion and anonymity, which to many adolescents is psychologically rewarding. The Internet in general, and Internet gambling in particular, permits individuals to go into a dissociative state; a prime motivation for adolescents with gambling problems (Gupta and Derevensky 1998, 2004).

Griffiths and Wood (2000) have highlighted several major concerns which need to be addressed with respect to Internet gambling, these being (a) underage gambling, (b) gambling while intoxicated, (c) available gambling hours (the Internet never closes, so it is possible to gamble all day, every day), and (d) electronic cash (the psychological value of electronic cash is less than actual money, frequently leading to a lapse in judgment). To date, few empirical large scale studies have investigated Internet gambling. Industry profiles depict online gamblers to be in the lowest SES group using the Internet (Kelley et al. 2001). There is a further suggestion that “online [Internet] gambling has the potential to increase the social cost of gambling and increase the prevalence rates of problem gambling as it combines the “double threat” of high speed and convenient access with a technology that appeals to youth” (Kelley et al. 2001). Because of the potential for abuse, a number of important social policy recommendations for governmental agencies have been articulated, including the need for more research (Kelley et al. 2001).

A number of recent studies examining online gambling behaviors of adults have suggested the growing popularity of this medium for gambling and its potential impact

upon problem gambling (Griffiths and Barnes 2007; Ialomiteanu and Adlaf 2001; Ladd and Petry 2002; Wiebe et al. 2003). However, it should be noted that there is currently no research that clearly demonstrates a cause and effect such that Internet gambling results in more problem gamblers. It may well be that individuals with gambling problems are drawn to gambling on the Internet because of a wide variety of features and their structural characteristics. Nevertheless, the popularity of online gambling appears to be fueled by both sports wagering and the widespread international appeal of Texas Hold'em poker.

Few studies have examined Internet gambling among adolescents. Griffiths (2001) noted that in a very small study of 15–19 year-olds in the U.K. that 4% of youth indicated that Internet gambling was highly appealing. Recent findings from Chevalier et al. (2003) in Quebec revealed that 3.7% of high school students reported having gambled on the Internet in the past year and Hardoon et al. (2002) revealed that at least 25% of youth with serious gambling problems and 20% of those at-risk for a gambling problem (endorsing several items on the DSM-IV-MR-J but not reaching criterion) reported playing online using practice/trial sites (Internet gambling sites offering simulated gambling often with possibilities of winning prizes). Given the payout rates appear to be significantly different on these sites compared to actual gambling payout rates (Sévigny et al. 2005) this is of particular concern.

There are multiple potential lures for youth to gamble via the Internet. Given they enjoy gambling, the colorful, fast-paced video-game like qualities, their knowledge and sophistication in the use of the Internet and ease of accessibility provide an ideal venue for youth to help relieve boredom and provide an exhilarating form of entertainment. Many of these sites also provide bonus money for playing on their site, entice males with sexually provocative pictures, and offer the opportunity to win trips (e.g., Tahiti) and products (e.g., clothes, motorcycles, cars). Other messages include clever advertising phrases such as "soon everyone would be a winner, you could be next." Still further, there appears to be strong evidence that many of these gambling sites fail to provide age restrictions (Smeaton and Griffiths 2004) and those that suggest or mandate age restrictions provide no checks on the reported age of its players.

In an effort to better understand Internet wagering by adolescents and young adults a study by one of our graduate students, Andrea Byrne, at the International Centre for Youth Gambling Problems and High-Risk Behaviors was conducted. The study sought to add to our current knowledge of adolescent and young adult online gambling, to identify the most salient characteristics for its popularity, to determine the correlates associated with its use to determine whether or not youth with gambling problems are more likely to use this venue, and to identify high-risk groups for excessive gambling problems.

In Byrne's (2004) study using 2,087 adolescents and young adults (42.8% males; 57.2% females) ages 12–24, 71% of youth reported having gambled in the past year (79% of males; 65% of females). Similar to other prevalence studies of adolescents and young adults a number of popular activities and venues were identified; these being lottery scratch cards, sports wagering and card playing. As individuals got older, they were more likely to engage in casino type activities including slot machine playing, casino table games and wagering in the stock market (for a detailed breakdown see Byrne 2004). As expected, males tended to gamble on every activity more often with the exception of Bingo. If one examined gambling behaviors on a weekly basis gender differences became more pronounced.

Using the DSM-IV-MR-J or DSM-IV criteria for problem gambling (depending upon the age of the individual), 5.8% of males were identified as probable pathological gamblers, with another 9.2% at-risk for problem gambling and 57.4% being considered social gamblers (no significant gambling-related problems). For females, 0.8% were probable pathological gamblers, 3.0% were at-risk gamblers, and 59.1% were social gamblers.

In order to assess Internet gambling activities, we wanted to understand the frequency of which individuals 'gambled' on both the practice/trial sites and real gambling sites. These practice sites, identical to those for wagering for actual money, are designed to provide players with entertaining, simulated gambling experiences while wagering for tokens, points, or chips. Significantly more individuals under the age of 18 than 18–24 (43 versus 33% for males; 42 versus 29% for females) reported participating on these practice/trial gambling sites. The most popular form of activity was card playing (poker and blackjack), with some individuals who gamble less frequently (less than once per month) reporting playing slot machines or other forms of electronic gambling machines. This same pattern of playing without money was reported for those under and over 18 years of age.

For Internet wagering with actual money during the past year, 4.6% of participants (7.8% of males; 2.3% of females) acknowledged participating in this form of gambling. Of importance was the finding that of the males, 8.6% were under the age of 18 while 6.8% were older than age 18. A similar finding was found for females with younger females more likely than older females gambling on the Internet (3.2 and 1.3%, respectively). The two most popular forms of gambling on the Internet for those under age 18 were card playing (poker) and sports betting, with a similar finding for individuals 18–24. It is also important to note that approximately 10% of participants who had gambled on the Internet with or without money (practice/trial sites) did so before they were 10 years of age. For those individuals gambling for money, many reported doing so with a family member (i.e., parent or older sibling).

The overall prevalence rates for probable pathological gambling amongst those gamblers on the Internet was 18.8%, with an additional 22.5% being identified as at-risk for a gambling problem. These prevalence rates are exceptionally high. However, as previously noted, the causal relationship between problem and pathological gambling and Internet wagering has yet to be determined. While no significant gender differences were noted, the younger the individual gambling on the Internet the more likely they exhibited significant gambling problems.

The widespread use of personal computers and low cost/high speed access to the Internet in general has made this a highly attractive venue for youth. Individuals without such personal access or fearful of getting caught using personal computers for wagering have little difficulty using their school computers, those in libraries or 24 h Internet cafes. In the current study, the overwhelming number of youth (80.4%) reported their Internet wagering was done within their own home. Multiple means for payment include the use of personal credit cards, a family credit card (with and without parental consent), debit cards, personal cheques and wire/bank transfers. Like their adult counterparts, underage youth have managed to use the same methods of payment for their Internet wagering as their older siblings and relatives.

Gambling amongst adolescents and young adults remains extremely popular. When asking youth why they gamble on the Internet the most popular reasons were for the competition (60%) (especially true for card playing), convenience (40%), 24-h accessibility (33%), privacy (33%), high speed of play (33%), good odds (33%), fair/reliable payouts (33%), bonus money (27%), graphics (20%), sex appeal (20%), and anonymity (20%). In general, similar findings were found independent of gambling severity. It is interesting to note that amongst individuals identified as probable pathological gamblers, 60% reported that the thrill and rush associated with Internet gambling centered upon the competitive nature of the games.

While the vast majority of individuals engage in recreational gambling without ever experiencing any gambling-related difficulties, a small percentage of individuals experience

serious gambling and gambling-related problems. Adolescents and young adults appear to be among the groups having the highest prevalence rates of gambling problems (Derevensky and Gupta 2006; Derevensky et al. 2003; National Research Council 1999). The findings that adolescents and young adults are engaging in Internet wagering should not come as a surprise. However, what is particularly disconcerting is that few if any safeguards exist for protecting underage youth from accessing these sites. The findings by Byrne (2004) suggesting that almost a third of youth may be playing on the practice/trial gambling sites are of concern. Although on these sites no actual money is being wagered, the gambling site and the types of games are almost indistinguishable from Internet gambling sites where money is wagered. Not only do these sites have differential payout rates (giving the individual a heightened sense of control and skill), but they are particularly attractive and seductive for adolescents without any safeguards or warning signs built into their advertisements.

The lure and enticement of these games, accompanied by colorful graphics and enticing photos make them particularly attractive to young males. Popular Hollywood celebrities including Pamela Anderson, Nikki Cox, and James Woods actively promote Internet gambling sites. Advertising slogans indicating that the individual can be the next big winner are widespread and souvenirs for gambling on their site (e.g., caps, mugs, key chains, t-shirts, etc.) are common.

There remains little doubt that more and more youth are accessing the Internet. In Canada, for example, data collected from 5,682 youth age 9 to 17, revealed that 99% reported having used the Internet to some extent, with 79% reporting Internet access at home (Media Awareness Network 2001). Five years later, while there is no readily available comparable data, surely the numbers have increased as the costs of personal computers and Internet providers have decreased.

Adolescents are particularly vulnerable to the appeal of Internet gambling (Dickson et al. in press; Griffiths 1996, 2002, 2003, 2006; Griffiths and Parke 2002; Messerlian et al. 2004). Ease of accessibility, reinforcing structural characteristics and the excitement and physiological arousal associated with gambling make this a highly valued activity. Coupled with the fact that the games are often colorful, fast-paced, and that most adolescents perceive themselves to be more intelligent than their peers and invulnerable to the addictive qualities, this is a potential recipe for disaster. Currently, the only impediment for some adolescents is their inability to transfer payments. While many teens do not yet possess a credit card, alternative methods including PayPal and NETeller payment systems (66.7% accepted PayPal and 32.7% accepted NETeller; Parke and Griffiths 2004), wire transfers, telephone calling cards amongst others are currently being used as a form of transfer of payments.

Mental health professionals and parents are only beginning to recognize the magnitude and impact of problem gambling among adolescents (Messerlian and Derevensky 2005). Awareness of the risks and potential harm associated with gambling problems in general, and Internet gambling in particular, are only beginning to surface. From a public health perspective this is becoming an important issue (Korn and Shaffer 1999; Messerlian and Derevensky 2005).

The laws related to Internet gambling vary between countries, with even greater difficulty in the application of any statutes. While some Internet gambling providers are beginning to put in place software designed to identify problem gamblers and some countries (e.g., Sweden) are trying to ensure that underage individuals do not use these sites, greater regulation and monitoring is essential. The preliminary results reported here (Byrne 2004) suggest some particularly problematic behaviors amongst adolescents. While

the vast majority of adolescents are still not gambling on Internet sites, the fact that a large percentage are engaging in very similar behaviors on practice and trial sites is problematic. Could these sites be a new breeding ground for youth and underage problem gambling? The findings that a large percentage of underage youth with identified gambling problems are already gambling on these sites are troublesome.

As Henry Lesieur noted at the Harvard Think Tank, teen gambling exists not only within the individual, peer group, family, school and community, but also within the larger global, international context (Lesieur 2003). There is little doubt that availability, accessibility, and structural features of specific forms of gambling combine with an individual's psychosocial characteristics in various ways to create rather complex patterns of risk (Abbott et al. 2004). Nevertheless, the large scale expansion of gambling on a worldwide basis will likely result in more and more youth engaging in this behavior at an earlier age. With easier accessibility, an earlier age of onset, and greater social acceptance, more youth will likely experience problems.

Our current understanding of adolescent gambling and problem gambling has been greatly influenced and inspired by the work of Dr. Mark Griffiths and his team at the Gambling Research Centre at Nottingham Trent University. His large body of research and writings in the field has significantly impacted both the scientific and clinical community. While our knowledge has increased, the ever changing landscape of gambling and the associated social and technological changes will keep clinicians and researchers busy for some time.

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