

Youth gambling prevention initiatives: A decade of research

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In this chapter we will attempt to illustrate the importance of using a conceptual model as the foundation for prevention efforts and will argue that research, development of prevention programs, and their acceptability into school-based curriculum and community programs is important. There is a growing empirical base indicating that well-designed, appropriately implemented school-based prevention can positively impact multiple social, health, and academic outcomes. Despite our limited knowledge of the role of protective factors in gambling problems, there is ample research to suggest that direct and moderator effects of protective factors can be used to guide the development of future prevention and intervention efforts to help minimize risk behaviors. There is a strong belief that competence and health-promotion programs are best initiated before youth are pressured to experiment with risky behaviors. Early intervention prevention programs which follow adolescents through high school will likely result in fewer youth with gambling problems. Socio-cultural factors also remain crucial in developing effective programs. Prevention programming will need to account for the changing forms and opportunities for gambling. Ultimately, school-based initiatives may have to examine the commonalities amongst multiple risky behaviors before educators become inundated with the implementation of prevention programs for risky behaviors and have little time for the educational curriculum. Greater parental, teacher and school administrators awareness of youth gambling problems will similarly be fundamental before real changes are realized.

INTRODUCTION

There is little doubt that today's youth live in an environment where gambling has become normalized and is a socially acceptable form of entertainment. Most jurisdictions around the world have some form of gambling; be it a lottery, electronic gambling machines, sports wagering, horse tracks, keno, land-based casinos or Internet gambling. Such regulated forms of gambling are accompanied by unregulated interpersonal wagering amongst youth themselves. Prevalence studies conducted in the United States, Canada, Europe, Asia, and Australasia point to the popularity of wagering for money by both children and adolescents as well as adults. Early reviews of the scientific literature (1-2) noted a trend toward the increasing proliferation of gambling venues, increased expenditures, and the seriousness of the adverse consequences for those individuals with a gambling problem. While the prevalence rates of youth gambling, both adolescents and young adults, vary between jurisdictions, there is ample evidence that they are gambling at high rates and some are experiencing

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multiple gambling-related problems. In fact, most prevalence studies suggest that adolescent problem gambling rates are approximately 2-4 times that of adults (1,3). Still further, when examining the adult prevalence rates of problem gambling, the research suggest that individuals between 18-25 have the highest adult problem gambling rates (3-4). While the prevalence rates of problem gambling have not dramatically risen in spite of greater availability, accessibility and increased venues, concerns still exist. It is also noteworthy that the overall US population in the past decade rose 9.7%. As a result, while the prevalence rates of problem gambling may not have risen, the overall number of individuals suffering from problem gambling has increased. Of significant concern is the changing landscape of gambling, with an increased use of technologically-based venues being particularly attractive to youth (5-6). These new forms of gambling, Internet and mobile gambling, capitalize upon youth's perceived skill and knowledge.

In spite of our increased knowledge about the risk and protective factors, correlates associated with youth gambling, and the deleterious impact of problem gambling for adolescents, there have been few systematic attempts at educating youth about the risks and warning signs associated with excessive gambling. The normalization of gambling has presented gambling as a benign form of entertainment. While most individuals actually gamble in a responsible manner, setting and generally maintaining both time and money limits, a number of youth go on to have quite severe gambling-related problems. Yet, current attempts at primary prevention of gambling problems have been limited at best. The need to reduce the prevalence and risks associated with gambling problems remains an important goal from a public health framework.

While primary prevention programs can be conceptualized for individuals of any age, the vast majority of primary prevention programs intended to prevent gambling problems have focused upon youth, with others starting to target particularly high-risk and vulnerable groups (e.g., elderly/seniors, minorities, individuals with low income, and those experiencing other impulse and additive disorders) (the Massachusetts Council on Compulsive Gambling has an excellent resource of prevention programs). This chapter summarizes the current literature on the prevention of gambling problems and harm minimization, highlights our current knowledge gaps, identifies issues of concern, presents a viable model for the development and evaluation of prevention programs, and provides recommendations for future directions. While our conceptual knowledge and understanding concerning adolescent gambling behavior in general, and problematic gambling in specific, has grown considerably in the past two decades, its social impact continues to lag far behind. This lack of scientific knowledge is compounded by a lack of youth and parental awareness about the risks and hazards associated with gambling. A number of studies have reported that youth do not think that their gambling behavior is of significant concern (7-8). These reports of youth have recently been confirmed by parents. In a national Canadian study, when asked to identify potential problematic adolescent behaviors, more than fifty percent of parents identified multiple potentially risky behaviors as a concern (drug use [87%], alcohol use [82%], drinking and driving [81%], unsafe sexual activity [81%], violence in schools and bullying [75%], smoking [73%], obesity and eating disorders [66%], excessive online Internet use [66%], negative body image [64%], excessive video game playing [64%], depression [60%], with the exception of gambling [40%]) (9).

PREVENTION PROGRAMS

Most existing primary prevention programs are universal; focusing upon the entire population versus high-risk groups. These programs are designed to minimize and/or prevent multiple mental health disorders, antisocial, and risk-taking behaviors. Recent analyses have suggested that today's youth are at high risk for engaging in a multitude of risky behaviors including substance use, tobacco use, teen pregnancy, unprotected sex, eating disorders, violence, school dropout, as well as conduct and antisocial disorders (10-12). More recently, a number of clinical researchers have begun to develop and examine the impact of gambling prevention programs (13-19).

Understanding the severity of the consequences associated with youth problem gambling can be difficult in light of the generally accepted perception that youth have little readily available access to money, that accessibility to gambling venues is limited, and the widespread belief that few adolescents have significant gambling or gambling-related problems. Volberg and her colleagues (3), in an excellent review of adolescent gambling prevalence studies, suggest that youth often begin gambling at an early age. Data from the Australian Productivity Commission (2) has suggested that adult pathological gamblers report beginning during their childhood, often as young as 9 years of age. Independent of sanctions and legal prohibitions and restrictions youth appear to have managed to gamble on most forms of legalized and state sanctioned gambling activities (1,7,20-24).

Adolescent prevalence rates of problem gambling have been consistently reported to be between 3-8% (two to four times that of adults) (1,3,25-28), with another 10-15% of youth being at-risk for the development of a serious gambling problem (1,3,21,25,27,29). The relatively rapid movement from social gambler to problem gambler (7) and the induction of gambling as the new rite of initiation into adulthood (30) attest to adolescents desire to participate in a wide diversity of gambling activities and their vulnerability. Given this behavior can easily go undetected for long periods of time it has often been referred to as a "hidden addiction." Similar to adults, our current understanding of youth problem gambling includes a profile that reflects its serious nature (31) Increased efforts to understand the economic, social, familial and psychological costs of gambling, and the recognition of the adolescent population as being particularly at risk for developing problem behaviors (11,32-33) and gambling-related problems (25,34,) amplifies the necessity for effective prevention initiatives (1,17).

Within the past two decades there has been increased interest in the prevention of high-risk behaviors (35). This research, converging with the examination of aetiologies and remedies for psychological disorders, prevention science, has formed the basis of many school-based prevention efforts (36-37). While our current knowledge of the efficacy of prevention of youth gambling problems is limited, and a clear need for more intensive and extensive efforts has been acknowledged (16), few empirical studies have been undertaken to assess the usefulness of such programs nor do most of the programs have any theoretical underpinnings.

There is a growing body and substantial literature on prevention of adolescent alcohol and substance abuse. Substance abuse prevention has a rich history of research, program development/implementation, and

evaluation which can help to shape future directions for the prevention of gambling problems (18). As both a mental and a public health issue, the conceptualization of problem gambling, as another form of risk-taking behavior, and its adverse consequences substantiates the need for effective prevention initiatives (38).

In spite of the importance in developing such programs, most existing programs have not been shown to be successful in altering behaviors because of their short duration, lack of intensity, atheoretical nature, and ineffective administration. Still further, there has been a general lack of follow-up due to insufficient funding to provide long-term behavioural evaluations. In general, efforts to address adolescent risky behaviors have typically been streamed into prevention programs aimed towards non-users (primary prevention), screening for potential problems (secondary prevention), and treatment (tertiary prevention) for those who have developed problems (e.g., alcohol use and abuse, substance abuse, smoking). In terms of primary prevention, the bulk of resources have been allocated toward initiatives with the goal of preventing or postponing the initial use of substances or activities including gambling. This is also predicated upon the research suggesting that pathological gambling adolescents and adults both begin initiating at an early age (2,25,34). While the authors in principle would advocate for youth abstinence, the reality remains that an abstinence approach would likely not be successful. The traditional approach of promoting non-use/experimentation as a means of preventing problems has been challenged (18,39-44), especially in the field of alcohol consumption and gambling (45).

While relatively few reduction prevention initiatives currently exist specifically targeting problem gambling, the increasing widespread use of the harm-reduction approach in the field of alcohol and substance abuse necessitates an examination of the validity of a harm-reduction approach for gambling. It has recently been advocated that initiatives move toward designing prevention strategies that target multiple risk behaviors based on theoretical and empirical evidence of common risk and protective factors across adolescent risky behaviors (11,46-50) including problem gambling (17,26,45,51). There remains ample research pointing to the serious consequences of problem gambling. Such negative consequences have short-term and far-reaching negative consequences. In light of the proliferation and expansion of gambling venues, the normalization of gambling, and the relative ease of accessibility by underage minors (52), the importance of primary prevention takes center stage in addressing this issue. While prevention efforts are critical in protecting vulnerable populations, no current Best Practices or standards have yet been empirically established.

ABSTINENCE VERSUS HARM REDUCTION APPROACH

There are two global paradigms under which specific prevention approaches can be classified, either abstinence or harm-reduction (the terms harm-reduction and harm minimization have often been used interchangeably). While these two approaches are not completely mutually exclusive, they are predicated upon different short-term goals and processes. While abolitionists and gambling critics would argue for an abstinence approach, others have suggested that the normalization of gambling within society would preclude such an approach.

Harm-reduction strategies (policy, programs, intervention) primarily seek to help individuals without demanding abstinence (53-54). Included in

such an approach would be secondary prevention strategies, based upon the assumption that individuals cannot be prevented from engaging in particular risky behaviors (32,55); tertiary prevention strategies (56); and a 'health movement' perspective (38,57-59).

While the negative consequences resulting from excessive gambling are evident (e.g., financial difficulties, depression, suicide ideation and attempts, health problems, academic problems, criminal and antisocial behavior, familial disruptions, peer difficulties, interpersonal problems, etc.) (48,60), it still remains unclear as to whether the social costs associated with legalized gambling outweigh their benefits. Social cost/benefit studies are limited in number and their methodological approaches have been criticized. As gambling expansion increases, governments seem to have adopted by default, a harm-minimization approach, whereby policy efforts (where applicable) are aimed at reducing or minimizing the negative impact of gambling while not limiting access for the general public. Such policies may not indeed be explicit but rather implicit. The change in governmental and industry advocates in the past twenty years has been remarkable. Both groups now readily acknowledge some of the potential harms associated with excessive gambling and some have taken proactive measures in trying to minimize these harms. Corporate Social Responsibility (CSR) is now becoming firmly accepted in the gaming/gambling industry.

Almost universally, underage youth are, in general, prohibited access to government regulated forms of gambling and venues (it should be noted that different jurisdictions have different regulations as to the age permitted to gamble and/or gamble on certain types of activities). While these laws are necessary, research also indicates that early gambling experiences mostly occur with non-regulated forms of gambling (e.g., playing cards for money amongst peers, placing informal bets on sports events, wagering on games of skill, or parents gambling for/and with their children (3,9,22,25). The fact that parents are indeed aware of their children's gambling both within and outside their home and fail to address this issue represents tacit approval (9). This highlights both the paradox and the confusion as to which primary prevention approach to promote; abstinence or harm-reduction. If one were to advocate an abstinence approach, is it realistic to expect youth to stop gambling when between 70-80% of children and adolescents report having gambled during the past 12 months? Similar to their adult counterparts, one could argue that it would be unrealistic to expect youth to stop gambling completely, especially since it is exceedingly difficult to regulate access to gambling activities organized amongst themselves (e.g., card betting, sports betting, wagering on personal games of skill, etc.) as well as their reports that they often receive lottery scratch tickets as gifts (61). Other proponents of a harm minimization approach would argue that in spite of legal restrictions most youth gamble without developing any significant negative consequences.

There is ample research that highlights that age of onset of gambling behavior represents a significant risk factor associated with problem gambling, with the younger the age of initiation being correlated with the development of gambling-related problems (1-3,22,25,34,45).

Thus, delaying the age of onset of gambling experiences would be one strategy in a successful prevention paradigm. While this argument would support an abstinence approach, other mitigating factors would suggest its limitations.

We have long argued that a harm-reduction approach makes intuitive sense on other levels. As gambling has been historically part of our culture (62-63), it has become strongly endorsed by government, and most adults remain unaware of the potential negative consequences for underage youth. As such, a harm-minimization approach seems a reasonable alternative. This is not to suggest that we are advocating for underage minors to gamble. Rather, we are suggesting that the pressures and accessibility to do so negates a total abstinence approach. Included under the principles of harm-minimization is the promotion of responsible behavior; teaching and informing youth about the facts and risks associated with gambling, changing erroneous cognitions, misperceptions, and beliefs, along with enhancing skills needed to maintain control when gambling. If these skills are encouraged and reinforced for youth through their formative years, it is plausible that they may be less vulnerable to the risks of a gambling problem once gaining legal access to gambling forums (48). The authors recognize that the harm minimization approach is not without criticism. However, given that there are a number of socially and widely acceptable risk behaviors (e.g., alcohol consumption and gambling) where involvement in such activities can be viewed as lying on a continuum ranging from no problems to significant psychological, social, physical, and financial harm to one's self and others, the utility of the harm-reduction approach as a means to prevent problem behavior remains promising.

GAMBLING AS A SOCIALLY ACCEPTABLE ACTIVITY

There is ample reason to believe that individual involvement in potentially risky behaviors may be approached in a responsible manner. For example, the majority of youth who drink alcohol or gamble do not do so excessively nor do they develop significant problems. Rather, their behaviors are done in a moderate manner, setting and adhering to acceptable limits although these limits may be intermittently disrespected. Research on the patterns of use and personal and social control mechanisms of various substance use point to the possibility of achieving controlled involvement in risky behaviors, free from problematic involvement (64-65). There is also evidence from studies using adults that substance users do in fact make rational choices, weighing the perceived positive gains versus risks of drug or alcohol use, and utilize informal control mechanisms of social networks (66-68). Interestingly, adolescent problem gamblers were able to discern both the benefits and risks associated with problem gambling. However, it appears that problem gamblers either do not recognize themselves as problem gamblers and/or that they see the risks coming much later (assuming they will "stop" their gambling when the consequences become problematic) (69).

Research on risk and protective factors offers an important reminder that the cause of such variance results from the interaction of present risk and protective factors operating within complex person-environment-situation interactions. Thus, it can be argued that the continuum of harm is associated with a number of different risk profiles and that harm-reduction is a useful means to prevent normal adolescent gambling behavior from becoming increasingly problematic (69).

HARM-REDUCTION PREVENTION PROGRAMS

The strategies of harm-reduction prevention have the potential for reducing the prevalence of problem gambling and are consistent with a public health

framework (38). As an example, school-based drug education programs and media campaigns are common strategies used regardless of prevention orientation (e.g., abstinence, harm-reduction). To date, universal harm-reduction programs have generally been primarily integrated in the form of school-based drug, alcohol and smoking awareness, education and prevention programs. A greater variety of strategies are employed when considering selective prevention, given the variety of at-risk populations that selective programs may target (e.g., street youth at high-risk for drug and alcohol abuse, individuals with antisocial, conduct, delinquent and/or behavioural disorders or entire schools at high-risk for a multiplicity of problems due to socio-cultural factors).

Such universal harm-reduction prevention programs are intended to modify inappropriate attitudes towards risky behaviors, enhance positive decision-making, educate youth about both short-term and long-term risks associated with excessive use and facilitate their understanding of tolerance. A basic premise underlying such an approach is that once the individual's awareness and knowledge increases about potentially risky activities and they have developed proficient decision-making skills, they can then make appropriate decisions about whether they need to avoid substances (e.g., alcohol, tobacco, and illegal drugs), and/or monitor their use carefully (39).

RESILIENCE

A long history of research suggest that resilient youth typically have adequate or competent problem solving skills (the ability to think abstractly, and to generate and implement solutions to cognitive and social problems), social competence (encompassing the qualities of flexibility, communication skills, concern for others, and pro-social behaviors), autonomy (self-efficacy and self control), and a sense of purpose and future (exhibited in success orientation, motivation, and optimism) (70). The field of prevention, in particular work by SAMSHA, has moved our understanding from a risk-prevention framework to one that includes both risk-prevention and the promotion of protective factors. Masten, Best and Garmezy (71) have suggested that protective factors can serve to mediate or buffer the effects of individual vulnerabilities or environmental adversity so that the adaptational trajectory is more positive than if the protective factors are not at work. Protective factors, in and of themselves, do not necessarily promote resiliency. If the strength or number of risk factors outweigh the impact of protective factors, the chances that poor outcomes will ensue increases.

Multiple studies have examined the impact of a large number of risk and protective factors associated with excessive alcohol and substance abuse (72-73). Such risk and protective factors can be grouped into a number of domains. In their conceptual model, Bournstein, Zweig and Gardner (74) suggest an interactive effect between each of these domains and the individual, who processes, interprets, and responds to various factors, based upon unique characteristics brought to the situation. The Centre for Substance Abuse Prevention model, modified by Dickson et al. (73), provides as a conceptual framework for targeting high-risk groups and their potential outcomes. This model remains widely used in the development of prevention programs.

Protective and risk factors have been shown to interact such that protective factors reduce the strength of the relation of the stressor and their outcomes. There are numerous examples as to how protective factors influence positive outcomes. For example, the effects of positive school experiences have been shown to moderate the effects of family conflict, which in turn decreases the association between family conflict and several adolescent problem behaviors (e.g., pathological gambling, alcohol and substance abuse, suicide, and delinquency) (75).

In an attempt to conceptualize our current state of knowledge concerning the risk factors associated with problem gambling, a similar paradigm was developed based upon the existing knowledge of youth with severe gambling problems (17). Within the individual domain, poor impulse control, high sensation-seeking, unconventionality, poor psychological functioning, low self-esteem, early and persistent problem behaviors and early initiation are commonly found. Common risk factors in the family domain were found to include familial history of substance abuse, parental attitudes, and modeling of deviant behavior. Within the peer domain, social expectancies and reinforcement by peer groups are common risk factors across addictions. Although some research has been undertaken to identify risk factors of problem adolescent gambling (7,29,73,76-78), there are few studies which have examined protective mechanisms, or more generally, resiliency for youth with respect to problem gambling. Dickson et al., after examining a wide number of variables, found family cohesion and school connectedness served as protective factors for preventing gambling problems (73). Protective factors that have been examined across other youth risky behaviors and addictions generally fall into the three categories; care and support, dispositional attributes such as positive and high expectations, and opportunities for participation (79).

In a number of recent studies Lussier and her colleagues (77-78) attempted to examine the role of resiliency and youth gambling behaviors. The construct of resiliency has changed over time to not only include social competence despite adversity, but rather to examine specific types of resiliency; educational resilience, emotional resilience, and behavioral resilience (33).. Utilizing Jessor's (11) adolescent risk behavioral model, Lussier and her colleagues, sought to explore the concept of resilience and its relationship to adolescent gambling problems (78). Of those identified as high risk in their sample, only 20% were deemed to be resilient. While not finding overwhelming support for resilience as a predictor of gambling problems, both risk and protective factors did provide a unique contribution to the prediction model of gambling problems. In a follow-up study, Lussier reported that for adolescents from low-income immigrant homes, social bonding was associated with a decrease in severity for drug abuse, alcohol abuse and gambling problems. Personal competence was similarly found to be associated with a decrease in substance abuse and deviant behaviors (77).

CURRENT PREVENTION PROGRAMS

The past decade has witnessed an increased number of prevention programs attempting to reduce the incidence of problem gambling. Of those that are currently being implemented (although implementation is quite sporadic), most developed for youth have little or no science-based underlying principles, have failed to account for risk and protective factors, and few have been systematically evaluated (this has been gradually changing). The majority of these programs can be best described as primary and/or

universal preventive efforts with the overall goal of reducing the incidence of problem gambling (a harm-minimization versus abstinence approach). Several programs have explicitly identified factors associated with the development of problem gambling, but these factors were not always defined as a risk or a protective factor, nor are there many programs that point to the scientific validity of such factors. A number are based upon increasing one's understanding of the mathematical laws of probability while others are focused on demystifying the myth that there is considerable skill involved in random activities (e.g., slots, roulette).

COMMONALITIES AND DIFFERENCES AMONGST PROGRAMS

Prevention programs designed to reduce the incidence of gambling problems for youth have typically aimed at raising awareness concerning issues related to problem gambling. Most of these programs conceptualize gambling as an addiction, foster a harm-reduction framework and while some may try to advocate abstinence until one has the cognitive capacity necessary to set and maintain limits, they typically emphasize responsible gambling. The distinction between responsible gambling and abstinence likely lies within the specific population targeted. Programs targeted toward populations where the prevalence of gambling and other addiction and/or mental health problems is high (e.g., First Nations), suggest prevention programs might encourage abstinence over harm minimization, taking a tertiary approach in their prevention efforts.

Since the objectives of the majority of current programs are to raise awareness, most present information relevant to gambling, problem gambling, discuss motivations to gamble, warning signs, consequences associated with excessive gambling, and how and where to get help for an individual with a gambling problem. Several curriculums go a little further than merely presenting factual information and dispelling erroneous cognitions; encouraging the development of interpersonal skills, fostering effective coping strategies, providing techniques and strategies to improve self-esteem, and ideas for resisting peer pressure. A number of current programs place greater emphasis on the mathematical/probabilistic aspects of gambling including teaching students about the odds and probabilities associated with games of chance, while others emphasize issues related to erroneous cognitions and thoughts.

GAMBLING PREVENTION PROGRAMS

As previously noted, a growing number of gambling prevention programs has been developed. Some of these would include Don't Bet on It- a South Australian program for children ages 6 to 9 years; Gambling Minimizing Health Risks in Queensland for children in levels 5 and 6; Facing the Odds in Louisiana for children in grades 5 to 8; Wanna Bet in Minnesota for children in grades 3 to 8; Gambling: A Stacked Deck in Alberta; and the Harvard/Massachusetts Council Mathematics Curriculum for High School Students. Williams and his colleagues (16) introduced a High School program, Gambling: A Stacked Deck, where they emphasized a general awareness of the nature of gambling and problem gambling, addressed erroneous cognitions, helped to foster generic decision-making and social problem solving skills, and attempted to enhance youths adaptive behaviors through a PowerPoint type workshop. As well, Williams and his colleagues introduced a module specifically focusing upon probability theory in a statistics course as a way of modifying university students' gambling

behavior. In this curriculum, they emphasized gambling-related odds, resistance to gambling fallacies, and gambling attitudes with the ultimate goal of a reduction in gambling time and money expended.

For the past twenty years, the International Centre for Youth Gambling Problems and High-Risk Behaviors at McGill University has been examining the risk and protective factors associated with youth gambling and gambling problems. This research program has led us to a better understanding of the factors necessary to include in our prevention initiatives. At the same time, we became aware of the importance of providing a variety of strategies for teachers and prevention specialists that they might adopt for classroom use. In spite of some evidence which suggests that single trial inoculations are not necessarily effective for long term gains in behavior changes, the Centre has adopted a multi-level approach, with some efforts directly student-based, others requiring minimal teacher intervention, and still others requiring greater teacher intervention. This buffet style approach is designed to appeal to teachers who are unfamiliar with the issue of teen gambling and/or gambling problems as well as those with limited time in which to administer a curriculum.

The prevention programs are also intended to address a number of different audiences; children and adolescents; teachers, parents, physicians and attorneys/judges. All programs have been evaluated for their short-term gains (insufficient funding is available for long-term follow-up) and have generally been found beneficial in improving knowledge; increasing awareness of the warning signs for problem gambling; modifying inappropriate attitudes; correcting false cognitions, understandings and erroneous beliefs (e.g., probabilities, skill vs. luck, strategies, superstitions, independence of events) with the intention of ultimately modifying and reducing gambling behavior and preventing excessive pathological gambling behavior disorders. While it is not the intent to describe the specific goals for each of these prevention initiatives (see www.youthgambling.ca/en/Prevention/outils.htm), the more general goals are to enhance problem-solving skills, increase feelings of self-confidence, improve coping skills, resist peer pressure and social temptations, and facilitate good decision making. Many of these programs are currently being used in the U.S., Canada, Europe, Australia, New Zealand, and Singapore. The following activities have been developed for use in primary and secondary schools:

The Amazing Chateau (grades 4-7) and Hooked City (grades 7-12)

These award-winning interactive educational software games are designed for youth to be played individually. A Teacher's manual accompanies these games. The games take approximately 60 minutes to complete and incorporate a problem solving approach. The programs may be temporarily suspended enabling the child to come back and continue at another time. The software allows the child to print valuable information, take a screening test for problem gambling, and enables the student to maintain records of success while reinforcing a wide variety of concepts and misconceptions related to youth gambling issues.

Youth Awareness and Prevention Workshops (Levels 1 & II)

These PowerPoint workshops have been evaluated on over 7,000 school-age children and adolescents and have been shown to be successful in achieving a variety of prevention goals. While intended to be completed in one sitting,

they can and have been done over several days. An instructor manual accompanies each of these presentations identifying the goals of each slide, background information, and questions to be raised.

Clean Break

This award-winning docudrama is approximately 25 minutes in length and was developed for High School students and delinquent youth. The production team, using MTV technology, follows a pathological gambler who attempted suicide and as a result is now a paraplegic. Interspersed throughout the DVD are scenes and examples of adolescent problem gambling behaviors based upon the Centre's clinical experiences working with youth having gambling problems. This hard-hitting docudrama is accompanied by an examiner's manual and a PowerPoint presentation for follow-up discussions.

Know Limits

Issues around gambling, drug and alcohol use, tobacco and other high-risk behaviors are presented in a team game format. Incorporating elements of charades, Taboo, and word scramble, information is disseminated in a fun and enjoyable game format for High School students.

Other prevention programs are used to target individuals who frequently come into contact with adolescents and adolescent problem gamblers. For example the Centre has developed two successful Public Service Announcements (targeting Internet wagering and poker playing) which attempt to raise awareness to parents that their children's gambling may in fact be becoming problematic. These 30 second PSAs have a clear message - "Talk with your children." Other programs designed for physicians, Youth Gambling Problems: Practical Information for Health Professionals, and those in the legal profession, Youth Gambling Problems: Practical Information for Professionals in the Criminal Justice System, provide DVDs with pertinent information on youth gambling problems and CD-ROMs with seminal papers, posters, and screening instruments, which can be downloaded and printed for the professional. While other programs, in particular self-exclusion programs and the use of smart card technology for electronic gambling machines have been implemented, these are not appropriate for adolescents given their age prohibits them from these venues.

MENTAL HEALTH

Is problem gambling unique from other forms of addiction or are there commonalities? An examination of the commonalities of risk and protective factors for problem gambling and other addictions seems to provide evidence that gambling may similarly be incorporated into more general addiction and adolescent risk behavior prevention programs. The current thinking is that gambling problems may be listed under a Behavioral Disorders in the upcoming revision of the American Psychiatric Association's Diagnostic and Statistical Manual-DSM-V. Everything being equal, we would suggest a more general mental health prevention program that addresses a diversity of adolescent risky behaviors (e.g., substance abuse, gambling, risky driving, eating disorders, truancy, and risky sexual activity). A number of science-based programs provide evidence that prevention programs for risky behaviors are indeed effective. Dickson et al.

have suggested that there is strong support pointing to the need to examine similarities and differences amongst addictive behaviors, the need to analyze multiple risk and protective factors, and the importance of understanding the coping mechanisms of individuals engaging in risky behaviors (17).

NEW DIRECTIONS

There is little doubt that while our knowledge concerning youth with gambling problems has steadily increased during the past two decades, our need to incorporate such knowledge into a risk-protection-resilience prevention model needs further elaboration. Viewing risk and protective factors in light of the domains in which they operate provides a means to specify program goals (targeting specific factors), to establish outcome evaluation criteria, and to assess effectiveness of prevention programs. While this research is still relatively new we would suggest that the scientific standards expected from this field need to be no less rigorous.

Findings from the field of adolescent alcohol and substance abuse suggest that no one universal approach to prevention appears to be uniformly successful (32). As such, a combination of strategies seems to work best toward the goal of nurturing resilience. The Center for Substance Abuse Prevention has delineated a number of strategies that can be combined in the development of school, family and community prevention programs that target each area impacting youth (80). Such strategies include information dissemination, prevention education, providing alternative activities in lieu of the particular addictive behavior, problem identification and referral, community-based processes (training community members and agencies in substance use and gambling education and prevention) and activities thought to reduce risk factors and enhance protective factors. In addition to adapting such programs for different cultural, ethnic and age groups, it is important to understand the venues in which such programs will occur. For example, if teachers remain reluctant to use one type of program then alternative approaches may be necessary. This is part of the underlying rationale for the Intentional Centre for Youth Gambling Problems and High-Risk Behavior's approach to developing alternative types of curriculum.

PREVENTION AND SOCIAL POLICY

Prevention programs in essence represent a form of social policy. This is particularly important within the context of the debate between harm-reduction versus abstinence (38). It has been argued that the strength of prevention programs that address problem gambling issues are highly dependent upon clarity in the articulation of responsible social policies and ensure that they reflect research-based findings on resilience and effective program evaluations. Given the widespread increase in number of venues and the normalization of gambling, current policies that reflect the predominant attitude that gambling has few negative consequences and are merely a form of entertainment leaves little credence to effective abstinence gambling prevention initiatives. Changing widespread attitudes about problem gambling in general, and youth gambling in particular, will be necessary before our prevention efforts will be successful in encouraging individuals to make wiser healthy decisions about gambling. To date, other potentially health-compromising behaviors, alcohol and substance use, have had significantly more visibility.

Our current social policies concerning problem gambling have generally been reactive to specific problems. For example, considerable attention has been focused on electronic gambling machines in certain jurisdictions. These machines, EGMs, Pokies, VLTs, often referred to as the crack cocaine of gambling, have resulted in a number of different policy initiatives, including limiting the number of machines per location, modifying hours of availability, or enforcement of smart card technology to help individuals preset limits and maintain those limits.

The lack of parental concern (8-9), and ineffective gambling law enforcement, in particular the selling of lottery and scratch tickets to youth (23,52), remains a concern. While there is preliminary research to suggest that perceptions of skill and luck can be modified for gambling activities (81), there is little evidence and empirical support that attitudes toward gambling can be modified and have long-lasting changes. Much needed basic and applied research funding is required to help identify common and unique risk and protective factors for gambling problems. In addition, longitudinal research to examine the natural history of pathological gambling from childhood to adolescence through later adulthood is required and will add substantially to our knowledge.

Only recently have health professionals, educators and public policy makers acknowledged the need for prevention of problem gambling in light of the vast expansion of gambling. Nevertheless, State, Provincial or Federal policies are virtually non-existent. While many existing programs are school-based targeting children and adolescents, this should not be misconstrued to suggest that only youth remain at high risk for the development of serious pathological gambling programs or that such behaviors can not occur at any age. Other programs for adults have included self-exclusion programs, gambling education programs housed within casinos themselves, brochures, self-test assessment kiosks, and smart card technology.

In this chapter we have attempted to illustrate the importance of using a conceptual model as the foundation for prevention efforts and have argued that research, development of prevention programs, and their acceptability into school-based curriculum and community programs is important. There is a growing empirical base indicating that well-designed, appropriately implemented school-based prevention can positively impact multiple social, health, and academic outcomes (37). Despite our limited knowledge of the role of protective factors in gambling problems, there is ample research to suggest that direct and moderator effects of protective factors can be used to guide the development of future prevention and intervention efforts to help minimize risk behaviors. Dickson et al.'s adaptation of the risk behavior model provides a promising framework from which to begin the much needed development of effective, science-based prevention initiatives for minimizing and ensuring a harm-reduction approach for problem gambling among youth as well as other selected groups (17).

There is a strong belief that competence and health-promotion programs are best initiated before youth are pressured to experiment with risky behaviors. Early intervention prevention programs which follow adolescents through high school will likely result in fewer youth with gambling problems. Socio-cultural factors also remain crucial in developing effective programs. Prevention programming will need to account for the changing forms and opportunities for gambling. Ultimately, school-based

initiatives may have to examine the commonalities amongst multiple risky behaviors before educators become inundated with the implementation of prevention programs for risky behaviors and have little time for the educational curriculum. Greater parental, teacher and school administrators awareness of youth gambling problems will similarly be fundamental before real changes are realized.

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