

Youth gambling problems: a public health perspective

CARMEN MESSERLIAN, JEFFREY DEREVENSKY and RINA GUPTA

International Centre for Youth Gambling Problems and High Risk Behaviors, McGill University, Montreal, Canada

SUMMARY

Problem gambling has recently emerged as a significant public health issue. While most efforts target adult pathological gamblers, there is growing concern that adolescents and young adults represent the highest risk group for gambling problems. Prevailing public health initiatives addressing youth problem gambling are only beginning to be examined. Drawing upon the Ottawa Charter for Health Promotion as a guiding framework, a prevention model and framework for action are presented

to better understand and address problem gambling from a population-based perspective. This framework applies denormalization, protection, prevention, and harm-reduction principles to youth gambling problems and describes primary, secondary and tertiary prevention objectives. A foundation for the development, implementation and evaluation of comprehensive, multi-level health promotion and prevention strategies for youth problem gambling is provided.

Key words: youth gambling; public health; prevention

INTRODUCTION

Problem gambling among youth is a growing public health concern. While gambling activities are predominantly viewed as an innocuous adult pastime, more underage youth, exposed to the widespread availability of regulated and unregulated forms of gambling, are succumbing to the temptation and pressures to engage in these activities [Jacobs, 2000; National Research Council (NRC), 1999]. Similar to adults, research reveals that problem gambling during adolescence can lead to adverse outcomes such as strained relationships, delinquency and criminal behaviour, depression and even suicide (Derevensky and Gupta, 2004). Such negative outcomes have short- and long-term implications for the individual, significant others, as well as for society at large (Derevensky *et al.*, 2003). Yet, despite these negative consequences, problem

gambling in youth has only recently emerged as a significant public health concern (Korn and Shaffer, 1999). To date, little effort has been made to respond to this important adolescent risk behaviour.

The prevailing attitudes of governments and the general population indicate that new gambling venues (e.g. casino expansion) will continue to rapidly expand. Gambling, or gaming (the widely accepted industry terminology), is no longer a vice accompanied by negative connotations and stigmatization but rather a legitimate form of entertainment. Today's lottery corporations deliberately associate the proceeds of lottery sales with funding of public education and health/social welfare initiatives. There is also literature which discusses the potential health-related benefits (Korn and Shaffer, 1999).

However, gambling continues to remain a contentious social policy issue worldwide. [See reports from the US National Gambling Study Impact Commission (National Opinion Research Center, 1999), Canada West Foundation (Azmier, 2000), the National Centre for the Study of Gambling, South Africa Report (Collins and Barr, 2001).]

Gambling has become a popular form of recreation for adolescents. While legislative statutes generally prohibit youth from participating in legalized forms of gambling, there is little doubt that they engage in both legal and illegal forms of gambling. Research in Canada, the US and internationally suggests that upwards of 80% of adolescents have engaged in some form of gambling during their lifetime (see reviews by the NRC, 1999, and meta-analysis by Shaffer and Hall, 1996).

Most alarming, however, is evidence indicating that between 4 and 8% of adolescents have a very serious gambling problem, while another 10–15% are at-risk (Derevensky and Gupta, 2000; Jacobs, 2000). While there are some methodological issues involved in the measurement of pathological gambling for youth, there are consistent reports that adolescent prevalence rates of pathological gambling (4–8%) are higher than the general adult population (1–3%) (NRC, 1999; Derevensky *et al.*, 2003).

Trends between 1984 and 1999 point to a significant increase in the proportion of youth who report gambling within the past year and those who report gambling-related problems (Jacobs, 2000). In the US and Canada, it is estimated that approximately 15.3 million 12–17 year olds have gambled, while 2.2 million are reported to be experiencing serious gambling-related problems (Jacobs, 2000). While most adolescents report having gambled for money (NRC, 1999), the lure of excitement, entertainment and financial freedom accompanying gambling is particularly attractive to youth. This, coupled with a general lack of prevention and awareness programmes, may render youth particularly vulnerable to the risks and negative consequences associated with gambling.

Gambling problems in adolescents have often gone unnoticed as they are difficult to measure and observe (Derevensky and Gupta, 1998). In contrast to alcohol, tobacco and other drug use, there are no visible signs of intoxication or consumption. Furthermore, problem gambling remains socially invisible and masked by popular

misconceptions. Moreover, advertising and the mass media have succeeded in legitimizing and destigmatizing gambling (Zangeneh *et al.*, In press).

COSTS AND CONSEQUENCES

Research has demonstrated that problem gambling among adolescents has been associated with a number of other mental health outcomes including higher rates of depressive symptomatology, increased risk of alcohol and substance abuse disorders (Hardoon *et al.*, 2002), increased risk of suicide ideation and attempt, higher anxiety (Gupta and Derevensky, 1998) and poor general health (Potenza *et al.*, 2002). Further, these adolescents, relative to their peers, are at increased risk of delinquency and crime, disrupted familial/peer relationships and poor academic performance (Wynne *et al.*, 1996). The consequences borne by youth experiencing gambling-related problems are serious, and the damage can be devastating to the adolescent, and his/her peers and family.

The degree of potential costs of problem gambling in youth can be measured along a continuum of gambling risk. Individuals who gamble infrequently, or in a low-risk manner, have few, if any, negative outcomes. At this level, Korn and Shaffer (1999) suggest that most people enjoy some degree of pleasure, enjoyment or benefit. As one moves up the continuum of gambling risk, the negative outcomes begin to outweigh any potential benefits. As a result, adolescent gamblers begin to experience a wide array of impaired personal, health and social consequences.

DETERMINANTS AND RISK FACTORS

Problem gambling is governed by a complex set of interrelating factors, causes and determinants ranging from biology and family history to social norms and existing statutes. An ecological approach to health behaviour requires one to view gambling behaviour from multiple perspectives. Proposed by McLeroy *et al.* (1988), an ecological health promotion model focuses on addressing health behaviour from both an individual and socio-environmental level; strategies are directed at shifting intrapersonal, interpersonal,

institutional, community and public policy factors. It is the interplay of these five factors that determine one's propensity to develop a gambling-related problem (Jacobs, 1986). An ecological perspective on gambling predicates moving beyond simply offering problem gamblers treatment and counselling; instead, interventions work at modifying all five levels within this multi-dimensional model (see Table 1).

Intrapersonal and interpersonal level factors have been the focus of considerable research, treatment and prevention programmes in the past. There is extensive research outlining the many intrapersonal risk factors, as well as the effects of parents, peers and family on the acquisition, development and maintenance of gambling problems (for a review of the substantial empirical research outlining risk factors and correlates see Derevensky and Gupta, 2004). However, more research is needed to better understand the role of community factors such as

civil/local organizations, social norms, socio-economic variables and the media in shaping social identity, norms, values, beliefs and behaviours regarding gambling. The aetiology of gambling behaviour and problems, although still not fully understood, includes the interaction of both biological and psycho-social factors.

Institutional structures, regulations and policies either promote or hinder health behaviour and outcomes. The gambling industry's policies/practice on the development of products and venues, their promotion and sale, and the enforcement of existing legal statutes prohibiting access to minors are important determinants of gambling participation and behaviour. Yet, retailers and venue operators lack the knowledge and motivation to properly enforce such statutes. Furthermore, some school practices may unwittingly be promoting gambling through fundraising activities including lottery/raffle draws, casino nights and permitting card playing

Table 1: Levels of influence on gambling behaviour

Levels	Factors	Youth gambling examples
Intrapersonal	Individual characteristics: knowledge, attitudes, beliefs, skills, and personality traits.	Male ^a Risk-taking propensity ^a Low self-esteem ^b Poor coping skills ^a Impulsivity, sensation seeking ^a Anxiety and/or depression ^a
Interpersonal	Social networks and support systems: family and peers that provide social identity, support, and role definition.	Family history of gambling ^c Parental or peer conflict ^d Parental or peer attitudes ^b Family connectedness ^b
Institutional	Social institutions with formal/informal rules, regulations, policies that constrain or promote behaviour.	School policy/programmes ^e Industry policies and enforcement ^f
Community	Relationships, standards and networks that exist among individuals, groups and institutions.	Social norms ^g Media ^h Community resources ⁱ Availability and accessibility factors ^j
Public policy	Local, state, federal policies and laws that regulate, support, or constrain healthy actions and practices.	Federal and Provincial Policies ^f on: age restrictions, enforcement, advertising, legislation

Adapted from McLeroy *et al.* (1988).

^aGupta and Derevensky (1998).

^bHardoon *et al.* (2002).

^cGupta and Derevensky (1997).

^dFisher (1993).

^eDerevensky *et al.* (2001).

^fDerevensky *et al.* (2004).

^gHardoon and Derevensky (2001).

^hZangeneh *et al.* (in press).

ⁱHenriksson (1999).

^jGriffiths (2002).

within schools. These institutional factors can be viewed as targets for change; they can be challenged and modified to help create healthy organizational culture and practices.

Public policy factors related to gambling intersect a number of different domains including social, educational, health, economic, legislative and judicial. The rapid expansion of the gambling industry is a global phenomenon. Governments around the world continue to control and regulate gambling in a manner that promotes and sustains economic benefits. In an effort to recoup losses, governments have sought various means to bolster the economy, reduce deficits and increase revenues (Campbell and Smith, 1998). Under economic constraint many governments have become highly dependent on gambling revenues and are reluctant to change regulations in favour of more sound public health policies. Applying political economy theories to gambling, Sauer (Sauer, 2001) maintains that gambling expansion has been driven by the need for larger governments to generate greater revenue. Legislation on advertising and promotion, laws regulating minimum age-requirements and their enforcement, provision of programmes for harm minimization, fiscal measures and regulation on the availability of products are examples of public policy initiatives that can influence the social environment and minimize unhealthy behaviour. Clearly, however, policies need to balance public health interests with the economic gains to governments and the industry.

POPULATION-BASED APPROACH

Rose (Rose, 1992) aptly noted that 'mass diseases and mass exposures require mass remedies' (p. 95). Accordingly, gambling expansion and the rising number of youth with gambling problems need to be conceptualized as a community/social issue and not merely the problem of sick individuals, reflecting a medical model. Without addressing the underlying causes and factors that result in individuals developing a gambling problem, a flow of new individuals (incidence cases) will continue. Public health and gambling professionals must refocus from the individual to society, and seek to balance high-risk strategies with those that strive to address gambling issues from a societal perspective.

Although only a small minority of youth develop gambling problems, and most adolescents

who gamble experience few negative effects, from a public health and population-based perspective, the greater the number of young 'social' gamblers that exist, the greater the potential for more youth to develop a gambling addiction. In order to significantly reduce the overall prevalence of gambling-related problems in youth, public health strategies must focus on shifting the continuum of risk downward (i.e. reducing the number of young at-risk and high-risk gamblers as well as preventing low-risk youth from becoming at-risk) by addressing the individual, environmental and socio-economic determinants of gambling.

RECOMMENDED ACTION

The Youth Gambling Risk Prevention Model, Figure 1, illustrates (a) the continuum of gambling risk, (b) the primary, secondary and tertiary prevention intervention points, (c) the related prevention objectives for each level of risk along the continuum and (d) the recommended health promotion strategies required to achieve the prevention objectives. This model emphasizes the importance of addressing youth gambling behaviour along a continuum and the need for different forms of intervention to address each level of risk.

The benefit of this model is that it is bidirectional and delineates two main trajectories: a risk continuum and a prevention pathway. The risk continuum moves from no-risk to at-risk and from at-risk to gambling problems. The prevention pathway moves in the opposite direction and aims to reverse the risk at every level along the continuum. The three prevention points impede the progression at each stage in the gambling risk continuum. Further, the model links clusters of health promotion strategies to prevention objectives outlined at all three levels of risk. The health promotion strategies should be designed, tailored and implemented to address and achieve every objective as per the needs of individual communities.

Derevensky *et al.* (Derevensky *et al.*, 2001) conducted a comprehensive review of existing gambling prevention initiatives and concluded that while empirical knowledge of the prevention of youth gambling problems and its translation into science-based initiatives is very limited, the emergent field of youth gambling can make use of the considerable literature and prevention initiatives on adolescent alcohol and substance

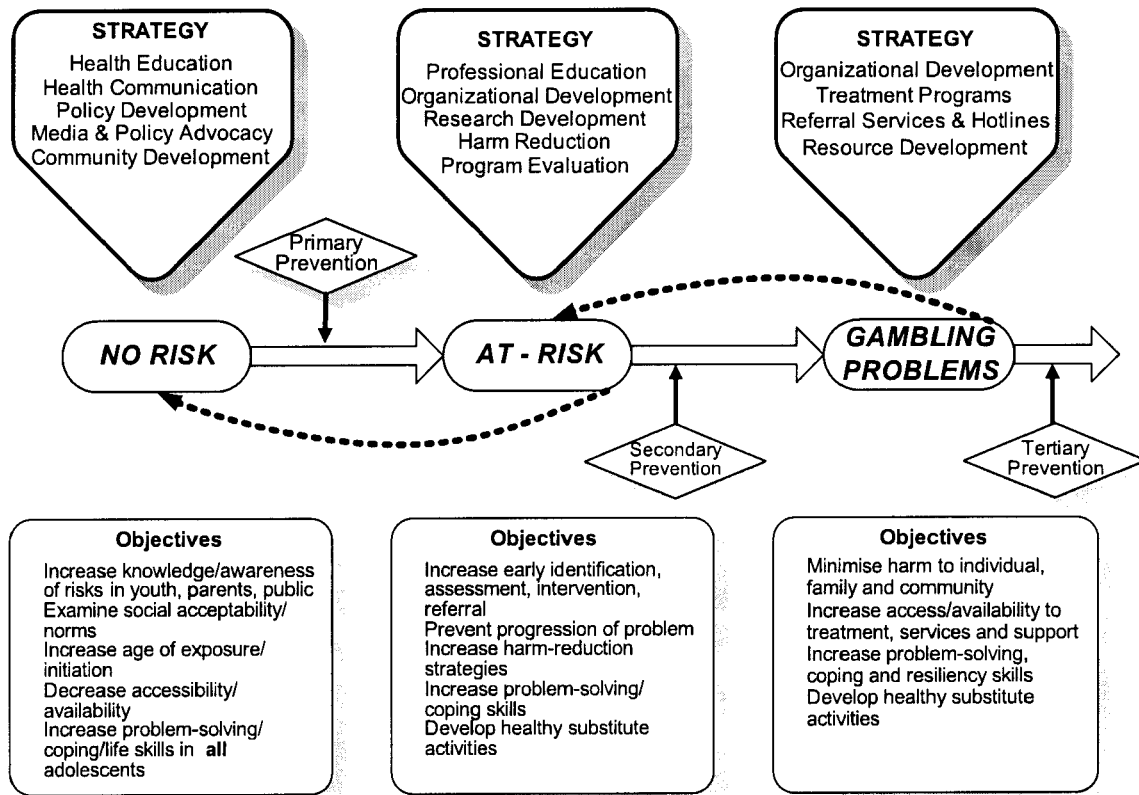


Fig. 1: Youth Gambling Risk Prevention model.

use given their many similarities. As such, the strategies and recommendation presented here are theory-based and require implementation and empirical evaluation in order to begin to develop the evidence-base necessary for best practices.

Primary prevention

Youth who do not gamble or gamble infrequently are categorized under no-risk on the continuum; the majority of young people (80%) would fall under this level of risk (Derevensky and Gupta, 1998). Their behaviour does not currently place them at risk, however, this does not suggest that there is no need for public health intervention on a population level. In fact, since a large percentage of youth gamble a potential exists for increased gambling and problems (Gupta and Derevensky, 1998).

Primary prevention strategies aim to prevent the onset of at-risk gambling behaviour and

maintain youth at the healthy end of the continuum. Primary prevention objectives include increasing knowledge and awareness of the risks and consequences of at-risk gambling for not only the adolescents themselves, through school-based programmes, but for their parents, professionals and the general public. To date, there have been few attempts at such a goal and those that have been implemented lack empirical evaluation (NRC, 1999).

Public education measures, such as social-marketing and the use of the media, are important measures given that adolescents' attitudes about gambling may be formed through marketing and promotion of gambling in the mass media (Griffiths, 2002) and modelling of parents and peers (Hardoon *et al.*, 2002). Such strategies help persuade the public to question the social acceptability of underage gambling and have the potential to influence social norms. In order to be effective, however, public education

strategies need to be part of an integrated approach, which includes implementing healthy public policy that modifies the existing environment, thereby enabling behaviour change. In addition, involving the community in the development and implementation of programmes and the policy-making process may strengthen public support, enhance community capacity and improve public knowledge and perception of the risks of youth gambling.

Advocacy for healthy public policy on regulating and limiting the expansion of gambling in communities may help foster a more supportive environment—one where gambling is curtailed and less visible to minors. Given that age of onset is a significant risk-factor (Derevensky and Gupta, 2004), increasing the age of first exposure to gambling participation by limiting the availability of gambling products and venues is a necessary goal. Information programmes for retailers on the importance of enforcing age restrictions increases the point of purchase barriers for youth trying to gamble. There also remains a need to develop standards and policies regulating the promotion and marketing of gambling products and venues, in light of research suggesting that youth are adversely affected by advertising tactics (Griffiths, 2003) (for a detailed discussion of social policy issues see Derevensky *et al.*, 2004). Without the development of policies that foster an environment supportive of behaviour change, educational programmes at the community or school level are not likely to be effective (Campbell *et al.*, 1999).

Secondary prevention

Approximately 10–15% of youth are at-risk of developing a severe gambling problem, experiencing one or more negative consequences associated with their gambling while not meeting the DSM criteria (Shaffer and Hall, 1996). Nevertheless, these youth exhibit multiple signs of problematic gambling behaviour, and without appropriate secondary prevention they remain at an increased risk for pathological gambling.

Secondary prevention attempts to avert at-risk youth from escalating towards pathological gambling and includes early identification strategies. For example, by developing and implementing effective professional education and training programmes for primary health care workers (e.g. physicians, school counsellors, social workers), adolescents can be more easily identified. With appropriate education and

training, professionals will have the knowledge and resources needed to understand the risks, recognize the signs of early gambling troubles in underage youth, and respond effectively.

Organizational development, including policy development, is yet another approach used to influence health services. This includes developing standards of care oriented towards gambling prevention. For example, outpatient facilities including clinics and community health centres can offer staff training on how to identify, assess, and provide brief intervention to youth that may be at-risk of developing a gambling problem. Staff should also have at their disposal the resources and tools needed to respond to youth gambling issues, including access to gambling screens, information pamphlets, treatment guidelines and referral contacts.

Programmes founded on a harm-reduction approach inform youth of the risks and dangers associated with gambling, and help them develop the necessary skills to remain in control, however such programmes do not advocate abstinence (Single, 2001). Relatively few gambling prevention or sensitization programmes exist and those prevention programmes that are being implemented lack empirical validity as to their effectiveness (Derevensky *et al.*, 2001). Harm-reduction strategies need to identify and target at-risk youth, including communities and/or schools known to have gambling problems. Evidence-based harm-reduction and outreach programmes need to form part of an overall gambling prevention approach. (For a complete discussion see Dickson *et al.*, 2004.)

Tertiary prevention

Adolescents engaging in excessive gambling and experiencing multiple serious gambling-related problems are considered to be problem or pathological gamblers. Symptomatic of pathological gambling is a continuous or periodic loss of control over gambling, irrational thinking, a preoccupation with gambling and with obtaining money to gamble, as well as a continuation with gambling behaviour despite adverse consequences, and an inability to stop in spite of their desire to do so [American Psychiatric Association (APA), 1994].

Tertiary prevention strategies aim to increase access and availability of treatment, services and support. Such treatment services can be developed specifically for gambling, or gambling

treatment can be incorporated into existing addiction programmes. Marketing services as free, confidential and youth-friendly may help increase the utilization of these services. It is essential that treatment programmes be tailored to the needs and developmental age of each individual (see Derevensky *et al.*, 2001). The promotion of referral services and telephone helplines is also important. Telephone helplines are confidential and easily accessible, and may be an ideal vehicle for youth to ask questions, obtain information and acquire referrals to services.

FRAMEWORK FOR ACTION

The Framework for Action (Figure 2) depicts an overall structure to guide public health action in the area of youth gambling. The Ottawa Charter for Health Promotion [World Health Organisation (WHO), 1986] forms the basis for action within this framework. Drawing upon the Charter’s five action areas—development of personal skills, strengthening community action, creating supportive environments, reorienting

health services and building healthy public policy—this model can help direct and shape public health action for the prevention of youth gambling. The five pillars of health promotion represent the foundation upon which public health goals are achieved. The framework emanates from the bottom with the five health promotion action areas, and flows upward to the four gambling-related goals. Within each stage, the framework guides and directs action towards achieving the principal public health goals, attainable through a multi-level approach.

The four public health goals—denormalization, prevention, protection and harm-reduction—although independently relevant and important are reciprocally related, and together address the spectrum of issues underlying gambling problems. Denormalization, within the context of youth problem gambling, assumes social de-normalization, where society begins to question and assess underage gambling. Similar to the strategies incorporated in tobacco prevention, denormalization includes drawing attention to the marketing strategies employed by the gambling industry, influencing social norms and attitudes on

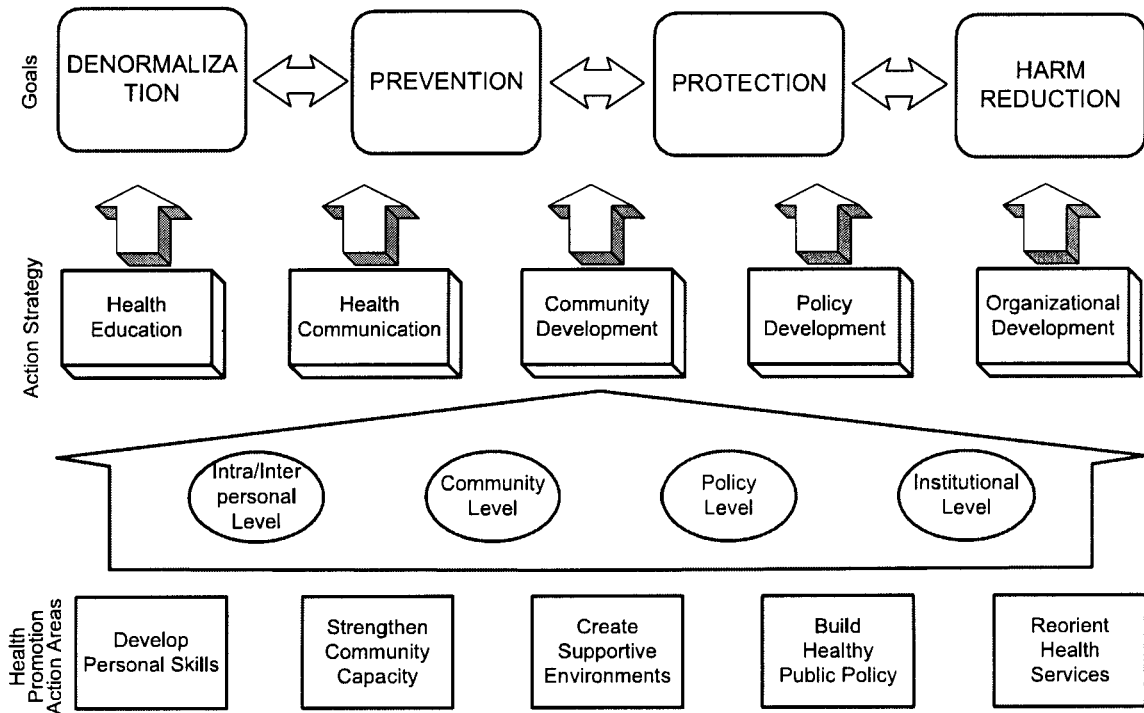


Fig. 2: A public health policy Framework for Action.

youth gambling, challenging current myths and misconceptions among youth and the general public, and promoting realistic and accurate knowledge of the impact of youth gambling.

Prevention in the area of youth problem gambling should incorporate the following aims: increasing knowledge and awareness of the risks of excessive gambling among youth, professionals and the general public; promoting informed decision-making among individuals; the early identification and treatment of youth experiencing gambling problems or at-risk of developing one; helping youth develop problem-solving, coping and social skills required for healthy development; and minimizing harm of gambling problems in youth, their families and communities.

Governments, the industry and the public have a responsibility to protect children and adolescents from potentially harmful products. This goal aims to protect youth from exposure to gambling products and promotion through effective institutional policy and government legislation thereby reducing the accessibility and availability of all state regulated gambling to underage youth. Further, efforts to protect youth from the direct and indirect marketing of gambling products and venues is required.

Harm-reduction focuses on preventing the specific problem behaviour from developing. As an overall goal, harm-reduction should be targeted to all youth, especially those at-risk, thereby decreasing the potential negative consequences of excessive gambling.

Health promotion strategies that develop personal skills aim to help youth, parents, and professionals acquire accurate knowledge and skills required to make sound decisions concerning gambling behaviour. Professionals and parents, if alert, can identify, protect or support youth who may be experiencing a gambling problem or at-risk for developing a problem.

Strengthening community capacity is an important prerequisite for action in addressing youth gambling problems. Effective public health action must be formulated with an appreciation of the history of each community and appropriate within the local context. Approaches that seek to educate and empower communities will ultimately bring gambling issues to the policy agenda. Raising the visibility and awareness of the burden of gambling within communities can help catalyse action toward policy and community development. Furthermore, the importance of increasing the visibility of youth problem

gambling to those in a position that affect policy changes should not be overlooked. Political commitment may be acquired by emphasizing our social responsibility to protect youth. Facilitating communication and dissemination of information on the social consequences of problem gambling and the preventability can garner political support for public health action.

Creating supportive environments includes fostering a physical, socio-economic, political and cultural environment that promotes the health and well-being of individuals and of society. Policy development necessitates promoting barriers in order to restrict access to gambling venues. Environments where children and youth live and play should be supportive and conducive to their developmental needs and to their life skills and decision-making ability.

Building healthy public policy consists of implementing strategies that promote healthier choices through government legislation, regulation and fiscal measures while advocating for the development of responsible social policy. All governmental sectors have a responsibility to develop policies and regulations, provide a duty of care that limit/monitor the expansion of gambling in communities, fund research examining the social and health impact of gambling, enforce existing regulations and statutes, as well as regulate advertising and marketing of gambling to youth.

Reorienting health services in primary care settings and social services care facilities would ensure that professionals working with youth are sensitive to their unique needs, able to identify potential gambling problems, and intervene when necessary. Professional training can help ensure that early identification and support for gambling problems is provided. Health centres and organizations need to provide appropriate gambling prevention and treatment programmes. Science-based treatment programmes should be readily available and easily accessible in communities.

Assuming that despite the possible barriers to adopting a public health approach (see Korn *et al.*, 2003) policy makers, professionals and other proponents embrace it, this theoretical framework helps direct health promotion action on multiple levels, and suggests a range of strategies needed to achieve and attain public health goals. However, given that the framework is theory-based, further evaluation of its applicability and of any confounding issues is needed.

Public health recommendations incorporating the various elements of the Framework for

Table 2: Recommendations for action

Recommendation	Strategy	Health promotion action area
Develop, implement, and evaluate interactive school-based prevention programmes with a peer-led component, and booster sessions Develop parent education programmes	Health education organizational development Health education community development	Develop personal skills
Develop alternatives programmes for at-risk youth	Health education community development Health communication	
Develop educational resources and materials for schools Provide industry education and training for retailers Plan and implement education and training for teachers, health care professionals, and social service providers	Health education institutional development Health education organizational development	
Implement social-marketing/public awareness campaigns Organize public education forums and conferences on the risks, costs and consequences of youth gambling Design point of purchase awareness materials (e.g. signs on lottery booths, statements on play slips or tickets) Implement awareness programmes for retailers and venue operators Develop community guidebooks on gambling: current research, community strategies and ideas Develop and distribute educational materials such as harm-reduction wallet cards for each type of game Incorporate youth gambling harm-reduction programmes in existing youth services Promote existing telephone hotlines	Health communication Community development Health communication Health communication community development Community development Health communication Community development organizational development Community development	Strengthen community capacity
Advocate for youth-service groups to include gambling prevention Develop school policies	Community development Community development	Create supportive environments
Recommendation	Organizational development policy development Strategy	Health promotion action area Create supportive environments
Advocate for development of industry policy on enforcement and on penalties for non-compliance Advocate for government gambling regulatory agencies to ban aggressive advertising strategies Advocacy and development of policy on regulating expansion of gambling in communities Limit the location and density of VLT outlets and ticket vendors Develop and enforce regulations and statutes on underage gambling Legislate policy on increasing the legal age for all gambling to 21 Develop government regulations and standards on marketing and advertising of gambling products and venues Secure with levels/sectors of government (industry, education, health, environment) commitment and resources for gambling prevention	Organizational development policy development Policy development Policy development community development Policy development Policy development Policy development Community development	Build healthy public policy
Develop standards of care for gambling prevention Implement professional training on early identification and brief intervention Produce and distribute desk reference screening tools for physicians and other health professionals	Organizational development Organizational development Health communication	Reorient health services

Table 2: continued

Recommendation	Strategy	Health promotion action area
Develop manuals for community workers, health professionals, social service providers on assessment, brief intervention, referral and treatment	Organizational development	
Develop empirically validated youth treatment programmes	Organizational development	
Institute policy in hospitals, clinics, and treatment facilities on the provision of gambling prevention and treatment	Policy development	
Advocate for incorporation of gambling prevention in the curriculum of health professional institutions (e.g. nursing, medicine, social work, law)	Policy development	

Action are summarized in Table 2. As well, suggestions for future directions are provided.

CONCLUSIONS

The burden of problem gambling among children and youth remains under-recognized. Our current knowledge and understanding of the magnitude of the problem and its considerable impact upon the health and well-being of youth compels us to respond in a timely, effective and pragmatic manner. Examining youth problem gambling along a continuum of possible and real risk necessitates setting prevention objectives in order to prevent the onset, reduce the risk, and minimize the negative consequences of gambling problems among youth.

A public health approach incorporates a multi-dimensional perspective, recognizes the individual and social determinants, draws upon health promotion principles, and applies population-based theory. As such, a public health framework remains a pro-active approach to addressing youth gambling. Governments should not minimize this issue. This is an important social and public health policy concern which will continue to grow. Our youth remain particularly vulnerable to the lure of gambling and require our immediate attention.

Address for correspondence:

International Centre for Youth Gambling Problems and High Risk Behaviors
 McGill University
 3724 McTavish Street
 Montreal, Quebec
 Canada H3A 1Y2
 E-mail: carmen.messerlian@mcgill.ca

REFERENCES

- American Psychiatric Association (APA) (1994) *Publication Manual of the American Psychological Association*, 4th edition. American Psychological Association, Washington, DC.
- Azmier, J. (2000) *Gambling in Canada: Triumph, Tragedy, or Tradeoff. Canadian Gambling Behavior and Attitudes*. Canada West Foundation, Calgary AB.
- Campbell, C. S. and Smith, G. J. (1998) Canadian gambling: trends and public policy issues. In Frey, J. (ed.) *Gambling: Socioeconomic Impacts and Public Policy*, Sage, Thousand Oaks, CA, pp. 22–35.
- Campbell, C. S., Wood, R. and Kelly, M. (1999) *Social Capital and Health*. Health Education Authority, London, UK.
- Collins, P. and Barr, G. (2001) *Gambling and Problem Gambling in South Africa: A National Study*. National Center for the Study of Gambling, South Africa.
- Derevensky, J. and Gupta, R. (1998) Child and adolescent gambling problems: a program of research. *Canadian Journal of School Psychology*, **14**, 55–58.
- Derevensky, J. and Gupta, R. (2000) Prevalence estimates of adolescent gambling: A comparison of the SOGS-RA, DSM-IV-J, and the GA. 20 Questions. *Journal of Gambling Studies*, **16**, 227–251.
- Derevensky, J. and Gupta, R. (eds) (2004) *Gambling Problems in Youth. The Theoretical and Applied Perspectives*. Kluwer Academic Publishers, New York.
- Derevensky, J., Gupta, R., Dickson, L. and Deguire, A.-E. (2001) *Prevention efforts toward minimizing gambling problems*. Paper prepared for the National Council on Problem Gambling, Center for Mental Health Services (CMS) and the Substance Abuse and Mental Health Services Administration (SAMHSA), Washington, DC, June, 2001.
- Derevensky, J., Gupta, R., Hardoon, K., Dickson, L. and Deguire, A.-E. (2003) Youth gambling: Some social policy issues. In Reith, G. (ed) *For Fun or Profit? The Controversies of the Expansion of Gambling*. Prometheus Books, New York, pp. 239–257.
- Derevensky, J., Gupta, R. and Winters, K. (2003) Prevalence rates of youth gambling problems: are the current rates inflated? *Journal of Gambling Studies*, **19**, 405–425.
- Derevensky, J., Gupta, R., Messerlian, C. and Gillespie, M. (2004) Youth gambling problems: a need for responsible

- social policy. In Derevensky, J. and Gupta, R. (eds) *Gambling Problems in Youth: Theoretical and Applied Perspectives*. Kluwer Academic Publishers, New York.
- Dickson, L., Derevensky, J. and Gupta, R. (2004) Harm-reduction for the prevention of youth gambling problems and other high-risk behaviors. *Journal of Adolescent Research*, **19**, 88–128.
- Fisher, S. (1993) Gambling and pathological gambling in adolescents. *Journal of Gambling Studies*, **9**, 277–288.
- Griffiths, M. D. (2002) *Adolescent Gambling: Risk Factors and Implications for Prevention, Intervention, and Treatment*. Paper presented to the Conference on Reducing Adolescent Risk: Toward an Integrated Approach, Pennsylvania, June 2002.
- Griffiths, M. D. (2003) *Does Gambling Advertising Contribute to Problem Gambling?* Paper presented to the World Lottery Association Conference, London, England, September 2003.
- Gupta, R. and Derevensky, J. (1997) Familial and social influences on juvenile gambling behavior. *Journal of Gambling Studies*, **13**, 179–192.
- Gupta, R. and Derevensky, J. (1998) Adolescent gambling behavior: a prevalence study and examination of the correlates associated with excessive gambling. *Journal of Gambling Studies*, **14**, 319–345.
- Hardoon, K. and Derevensky, J. (2001) Social influences involved in children's gambling behavior. *Journal of Gambling Studies*, **17**, 191–216.
- Hardoon, K., Derevensky, J. and Gupta, R. (2002) *An Examination of the Influence of Familial, Emotional, Conduct and Cognitive Problems, and Hyperactivity Upon Youth Risk-Taking and Adolescent Gambling Problems*. Report prepared for the Ontario Problem Gambling Research Centre, Ontario, p. 113.
- Henriksson, L. E. (1999) *Government, Gambling and Healthy Populations*. Paper prepared for the Workshop on Addiction and Population Health, Edmonton, Alberta, June 1999.
- Jacobs, D. F. (1986) A general theory of addictions: a new theoretical model. *Journal of Gambling Behavior*, **2**, 15–31.
- Jacobs, D. F. (2000) Juvenile gambling in North America: an analysis of long term trends and future prospects. *Journal of Gambling Studies*, **16**, 119–152.
- Korn, D., Gibbons, R. and Azimer, J. (2003) Framing public policy towards a public health paradigm for gambling. *Journal of Gambling Studies*, **19**, 235–256.
- Korn, D. and Shaffer, H. (1999) Gambling and the health of the public: adopting a public health perspective. *Journal of Gambling Studies*, **15**, 289–365.
- McLeroy, K. R., Bibeau, D., Steckler, A. and Glanz, K. (1988) An ecological perspective on health promotion programs. *Health Education Quarterly*, **15**, 351–377.
- National Opinion Research Center (1999) *Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission*. National Opinion Research Center at the University of Chicago, Chicago, IL.
- National Research Council (NRC) (1999) *Pathological Gambling: A Critical Review*. National Academy Press, Washington, DC.
- Potenza, M. N., Fiellin, D. A., Heninger, G. R., Rounsaville, B. J. and Mazure, C. M. (2002) Gambling: an addictive behavior with health and primary care implications. *Journal of General Internal Medicine*, **17**, 721–732.
- Rose, G. (1992) *The Strategy of Preventive Medicine*. Oxford University Press, Oxford.
- Sauer, R. D. (2001) The political economy of gambling regulation. *Managerial and Decision Economics*, **22**, 5–15.
- Shaffer, H. and Hall, M. M. (1996) Estimating the prevalence of adolescent gambling disorders: a quantitative synthesis and guide toward standard gambling nomenclature. *Journal of Gambling Studies*, **12**, 193–214.
- Single, E. (2001) *Harm Minimization as it Applies to Youth Gambling*. Report prepared for the Second International Think Tank on Youth Gambling Issues, Montreal, Canada, May 2001.
- World Health Organization (WHO) (1986) Ottawa Charter for Health Promotion. *Canadian Journal of Public Health*, **77**, 425–430.
- Wynne, H., Smith, G. and Jacobs, D. (1996) *Adolescent Gambling and Problem Gambling in Alberta*. A report prepared for the Alberta Alcohol and Drug Abuse Commission. Wynne Resources Ltd, Edmonton, Alberta.
- Zangeneh, M., Suissa, A. J., Reed, S. and Haydon, E. The portrayal of gambling in advertising. *Journal of International Gambling Studies* (in press).