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Harm Reduction for the Prevention of Youth Gambling Problems: Lessons Learned From Adolescent High-Risk Behavior Prevention Programs

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Despite the growing popularity of the harm reduction approach in the field of adolescent alcohol and substance abuse, a harm reduction approach to prevention and treatment of youth problem gambling remains largely unexplored. This article poses the question of whether the harm reduction paradigm is a promising approach to the prevention of adolescent problem gambling and other risky behaviors. The authors use a universal, selective, and indicative prevention framework to present current prevention initiatives that have emerged from the harm reduction health paradigm for adolescent substance and alcohol abuse. The risk-protective factor model is used as a conceptual basis for designing youth problem gambling harm reduction prevention programs. This framework illustrates the developmental appropriateness of the harm reduction approach for youth. Implications drawn from this conceptual examination of harm reduction as a prevention approach to adolescent problem gambling provide valuable information for treatment providers as well.

Keywords: *adolescents; gambling; prevention; theory*

A recent national study outlining perceptions of gambling indicates that Canadians believe “gambling generates more harm than benefit, but feel it is an acceptable and inevitable part of our culture” (Azmer, 2000, p. 31). One of the most ominous aspects of gambling is the impact it has upon the lives of our youth. Our current empirical knowledge of youth problem gambling reflects the serious nature of gambling-related problems for youth (Derevensky & Gupta, 2000; Gupta & Derevensky, 2000; Jacobs, 2000;

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Korn & Shaffer, 1999). Thus, as both a mental and a public health issue, the rooting of problem gambling in the readily apparent risky lifestyles of many Western youth beckons the need to ensure that adolescents encounter effective prevention programs and have access to appropriate treatment services. The risky lifestyles of adolescents have been an ongoing concern for parents, educators, policy makers, and public and mental health professionals. Included in the profile of risky lifestyles are problem behaviors (e.g., illicit drug use, excessive drinking, delinquency, and problem gambling), health-related behaviors (e.g., tobacco use, failing to use a seat belt, risky driving behavior), and school behaviors (e.g., truancy, dropout) (Jessor, 1998).

Efforts to address adolescent risky lifestyles have traditionally been streamed into prevention efforts aimed toward nonusers (primary prevention), screening for potential problems (secondary prevention), and treatment (tertiary prevention) for adolescents who have developed problems such as substance abuse, cigarette smoking, or more recently, problem gambling (e.g., scratch cards, mah-jongg, bingo) (Gupta & Derevensky, 1998a). In terms of primary prevention, the bulk of resources has been allocated toward initiatives aimed at those who have not been initiated into potentially risky activities, with the goal of preventing or postponing initial use of substances or activities such as gambling. However, the question of whether the traditional approach of promoting nonuse as an adequate means of preventing problems is being increasingly raised (Beck, 1998; Brown & D'Emidio-Caston, 1995; Cohen, 1993; Erickson, 1997; D. M. Gorman, 1998; Marlatt, 1998; Poulin & Elliott, 1997; Thombs & Biddick, 2000).

The proliferation of harm reduction as an alternative approach to traditional prevention has arisen within the field of alcohol and substance abuse (For a historical overview of the development of harm reduction, see Erickson, 1999 and Marlatt, 1996). Harm reduction prevention and treatment programs have targeted a number of high-risk activities, including alcohol consumption, sexual activity, and illicit drug use (ecstasy, marijuana, cocaine, etc.). Harm reduction measures have taken various forms, such as safe injection rooms, pill-testing services, prescription heroin, and "Drink safe—don't drive" campaigns. More recently, with respect to adolescents, the pursuit of HIV prevention has resulted in harm reduction strategies such as clean needle exchanges for high-risk street youth and drug education materials distributed at raves. Harm reduction measures in the field of substance abuse prevention have led to the widespread availability of alcohol server intervention programs in major North American cities. Interestingly, the harm reduction approach has not been fully embraced as an approach to address all problem- and health-related behaviors. For example, the harm

reduction approach has been dismissed as inappropriate to preventing and treating tobacco use based on the rationale that smoking is not an activity that can be participated in safely, given the irrefutable evidence of harmful health consequences (Berridge, 1999; Single, 2000).

Although few prevention initiatives currently exist for problem gambling (see a comprehensive review by Derevensky, Gupta, Dickson, & Deguire, 2001), the increasing widespread use of the harm reduction approach in the field of alcohol and substance abuse calls for an examination of its validity specifically for adolescents. It has recently been advocated that prevention 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 (Battistich, Schaps, Watson, & Solomon, 1996; Costello, Erkanli, Federman, & Angold, 1999; Galambos & Tilton-Weaver, 1998; Jessor, 1998; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998), including problem gambling (Dickson, Derevensky, & Gupta, 2002; Gupta & Derevensky, 1998a; Jacobs, 1998). Researchers, treatment providers, and educators would benefit from a conceptual examination of the harm reduction paradigm for its application in the prevention of problem gambling and other risky behaviors.

Currently, there remains insufficient empirical knowledge about how to promote the use of harm reduction and few, if any, program evaluations delimiting what the potential positive and/or negative outcomes may be as a result of the implementation of various harm reduction *prevention* programs for the wide range of adolescent risky behaviors (Ogborne & Birchmore-Timney, 1999; Poulin & Elliott, 1997; Thombs & Briddick, 2000). However, the positive results from some harm reduction prevention initiatives targeting both legal and illegal adolescent high-risk behaviors (for examples, see Casswell & Zhang, 1997; Somers, 1996; Weiker, Edgington, & Kipke, 1999) call for further examination of the potential utility of this approach.

The validity of the harm reduction movement and its associated strategies need to be examined in light of what is currently known about normal adolescent development, adolescent risky behaviors, and science-based prevention. Considering that serious gambling problems result in far-reaching and long-lasting consequences (Jacobs, 2000), and considering that gambling, or "gaming," is largely promoted and easily accessible, the matter of primary prevention takes center stage in addressing this important issue. Although the scope of this analysis is limited to harm reduction as it pertains to prevention, it is hoped that the knowledge gained will inform the direction of treatment efforts as well.

PREVENTION APPROACHES: ABSTINENCE AND HARM REDUCTION

To set the stage for examining harm reduction in relation to adolescent problem gambling and other adolescent risky behaviors, it is important to outline what is meant by prevention in terms of specific prevention approaches and how particular approaches translate into specific strategies. Broadly speaking, the central idea of prevention is that action taken in the present can minimize or eliminate an undesirable consequence in the future (Levine & Perkins, 1997).

A review of the psychological and psychiatric literature indicates that there have been several attempts to define the construct of harm reduction (Lenton & Single, 1998; Riley et al., 1999; Single, 2000). As an overarching framework, harm reduction (also referred to as harm minimization) includes any strategy (policy or program) that seeks to help individuals without requiring abstinence from an activity that may be currently causing harm (Mangham, 2001; Riley et al., 1999). This operational framework would include secondary prevention strategies—predicated upon the assumption that individuals cannot be prevented from participating in particular risky behaviors (Baer, MacLean, & Marlatt, 1998; Cohen, 1993)—tertiary prevention strategies (DiClemente, 1999), and a “health movement” strategy (Denning & Little, 2001; Heather, Wodak, Nadelmann, & O’Hare, 1993).

Despite various definitional issues involving harm reduction, there is sufficient consensus of the principles to outline a coherent paradigm (Erickson, 1999; Erickson, Riley, Cheung, & O’Hare, 1997; Heather et al., 1993; Marlatt, 1998) (for a more detailed summary of the definitional issues of harm reduction, see the review by Single, 2000). If one is to accept harm reduction as a health paradigm in lieu of, or as an interim step toward, an abstinence model, harm reduction can best be conceptualized as a public and mental health approach that remains value neutral with respect to particular activities (e.g., drug use, alcohol consumption, gambling) and supports strategies that aim to reduce harmful negative consequences incurred through involvement in risky behaviors.

With respect to gambling, governments throughout the world have chosen to legalize gambling venues, including casinos, lotteries, bingo halls, race-tracks, gaming machines, and so forth. Although negative consequences are evident (bankruptcy, depression, suicide, health problems, work productivity, crime, delinquency, etc.) (Derevensky & Gupta, 1997), it still remains unclear whether the costs of legalized gambling outweigh any benefits. As such, although no policies have been formalized, federal and most state and provincial governments seem to have adopted a harm reduction approach by

default, such that policy efforts have been aimed at reducing or minimizing the negative impacts of gambling while not limiting access to different products and venues.

Gambling, however, is a legal activity only for adults in a majority of jurisdictions. Consistent with the abstinence approach, underage youth are more often than not prohibited by law from accessing legalized gambling venues (including the purchase of lottery products). Although these laws are necessary, research clearly indicates that early gambling experiences among children and adolescents occur with both nonlegalized forms of gambling, such as playing cards at home for money and placing informal bets on sports events, as well as all forms of legalized gambling (Gupta & Derevensky, 1998a; Jacobs, 2000). 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, would it be realistic to expect youth to stop gambling when it has been found that between 70% and 80% are gambling at the elementary and high school levels (Gupta & Derevensky, 1998a; Jacobs, 2000; National Research Council, 1999; Shaffer & Hall, 2001)? Similar to adults, one could argue that it would be unrealistic to expect youth to stop gambling completely, especially because it is exceedingly difficult to regulate access to gambling activities organized among themselves (e.g., card betting, sports betting, wagering on personal games of skill, etc.). And while we remain concerned about the occurrence of serious gambling problems among youth, it is also recognized that most youth are able to gamble without developing any significant gambling-related problems. Nevertheless, the harm reduction approach also remains questionable because it assumes, as a basic tenet, that youth will gamble in spite of legal restrictions and prohibitions.

The application and style of prevention approaches have shifted back and forth over the past decades, from abstinence to informed use. Beck (1998) describes the cycle of the “just say no” approach to the “just say know” approach that has taken place over the past years in drug education and prevention movements. Beck explains that the “just say no” climate resulted from inaccurate information being conveyed to students in an attempt to develop the strongest tactics in persuading youth to abstain from drugs, “ultimately fostering widespread distrust and discounting of all messages—no matter how credible” (Beck, 1998, p. 33). The “just say know” movements paralleled the harm reduction model. For example, this prevention/education strategy focused on providing cognitive drug education and fostering decision-making skills, with the goal of minimizing the negative consequences associated with drug use. These early programs often resulted in significant gains in knowledge but were found to be ineffective in reducing the

use of illicit drugs and in fostering healthier attitudes toward their use (Schaps, DiBartolo, Moskowitz, Palley, & Churgin, 1981).

More recent research has revealed some interesting findings. Cheung (2000) has provided support for the harm reduction approach for drug prevention, positing that the ability to maintain controlled use is present among many drug users, even those individuals dependent on the more addictive drugs (e.g., crack cocaine). Research on drug use has revealed that there is an inverse relationship between perceived risk and level of use (Cheung, Erickson, & Landau, 1991; Resnicow, Smith, Harrison, & Drucker, 1999), such that those who are the heaviest users are more likely to be unaware of the actual risks involved. As such, a harm reduction approach can address such specific knowledge gaps and subsequently may impact the degree of drug or alcohol use or severity of gambling problem.

The Principles of the Harm Reduction Approach Applied to Adolescent Risky Behaviors

If gambling prevention programs are going to be rooted in the harm reduction paradigm, it is important to delineate the principles of harm reduction within the context of adolescent risky behaviors. An extension of the key principles of harm reduction for adolescents supports a model that includes

- an underlying philosophy maintaining a value-neutral stance, accepting the adolescent's decision to engage in gambling (as well as illicit substance use, excessive drinking, and other risky behaviors) as an inevitable consequence of typical adolescent experimentation;
- a humanistic perspective whereby the adolescent is treated with dignity, respect, and as an individual with value. There is an expectation that the adolescent will behave as an adult with rights and obligations under the law (Single, 2000);
- a view of adolescents as having an active role in prevention programs (e.g., youth have the ability and are permitted to make their own choice concerning participating in risky activities); and
- a broad framework within which other approaches are integrated. The framework is characterized by neutrality regarding the long-term goals of intervention and therefore neither insists nor objects to abstinence in prevention and treatment.

The primary goal is to reduce the immediate harmful consequences of involvement in gambling activities and other risky behaviors. The goal of harm reduction prevention is to minimize misuse or excessive involvement in high-

risk activities. From a treatment perspective, it promotes low-threshold access to services in which realistically achievable goals take priority for those adolescents who cannot be expected to cease a particular risky behavior. Although some recognize abstinence as the ideal final outcome (e.g., Marlatt, 1996; Marlatt, Blume, & Parks, 2001), others suggest that the individual ultimately defines his or her own "ideal end-state" (Erickson, 1993; Strang, 1993).

PREVENTION STRATEGIES

Understanding prevention strategies in terms of a common framework facilitates an examination of the validity of the harm reduction paradigm and the effectiveness of its associated strategies, and can help prevention experts coordinate effective prevention efforts. Traditionally, prevention initiatives have been categorized into the three levels: primary, secondary, and tertiary prevention (Caplan, 1964), each of which is based on specific health goals. However, goal-based categorization is plagued with confusion over particular prevention constructs, largely due to a lack of common terminology across health paradigms. The literature within the public health, sociological, and psychological disciplines reflects a particularly high degree of confusion over the construct of "primary prevention," which has been defined as ranging from those strategies that aim to influence everyone to abstain from any form of substance use (Norman, 1997) (or risky behavior) to any measure that aims to prevent the onset of a targeted condition (U.S. Preventive Services Task Force, 1996). More narrow definitions are susceptible to failing to account for the heterogeneity of those receiving the program (e.g., the possibility of differential responses to prevention programs depending on whether an adolescent is a non-, moderate- or problem user of substances), whereas broad definitions offer little assistance in clarifying vague constructs of prevention. For example, is prevention targeted at *any* use of drugs, alcohol, gambling, or risky activity, or at substance and alcohol abuse and problem gambling?

A more efficient framework from which to analyze the harm reduction paradigm classifies prevention strategies in terms of universal, indicative, and selective prevention, based on the risk characteristics of each target group (Gordon, 1983; Institute of Medicine, 1994). This framework arose from new developments and initiatives in the mental health field leading to an emphasis on a continuum of risk characterized by multiple factors for any given disorder (Levine & Perkins, 1997).

Indicated (once known as secondary) preventive intervention encompasses efforts aimed at adolescents who possess noticeable signs (psychological or behavioral markers) of a problem behavior or disorder even when they are not yet diagnosable. Screening is the primary strategy of indicated prevention efforts. *Selective prevention* efforts target those adolescents who are at above-average risk but show no indications of their participation in risky behaviors becoming a problem. Selective strategies try to decrease risk factors or promote protective factors. For example, a male adolescent who exhibited early initiation into gambling activities and struggles with depression displays several risk factors for problem gambling and would therefore be a candidate for selective prevention programming (Dickson et al., 2002). *Markers* and *risk factors* must be kept conceptually distinct due to the differing role each plays in selective and indicative prevention respectively, although this is often a difficult task (Mrazek & Haggerty, 1994). Examples of selective strategies include harm reduction drug education programs targeted to entire schools or communities where the risk of problem behavior may be particularly elevated due to high crime rates, low socioeconomic status, and/or single-parent households.

In contrast, *universal prevention* encompasses efforts that are provided to all adolescents, regardless of their relative risk. Harm reduction media campaigns and drug education programs that encourage youth to use a decision-making process in the face of an opportunity to use cannabis are examples of such universal prevention initiatives. These universal prevention efforts need to be distinguished from mental health promotion efforts, which aim to help adolescents more effectively cope with the stresses of daily life and do not focus on gambling prevention per se.

Advantages to Using a Target Group Classification

There are several distinct advantages of using a target group classification for prevention. This framework provides a common prevention vocabulary across health paradigms and clarifies the confusion stemming from the vague concept of harm reduction. Furthermore, target group classification better reflects the population intended to receive a particular intervention. For example, universal prevention programs are designed for individuals who occasionally use substances or who gamble socially, those who exhibit signs of developing a problem, and those with a clinically diagnosable disorder.

Most important, this framework allows for an examination of the effectiveness of various strategies that are representative of distinct health movements. The following analysis will explore several questions. Is universal, selective, and indicative harm reduction prevention an effective means to

address adolescent problem gambling and other risky behaviors? Is the harm reduction approach more effective for one type of intervention (e.g., selective) but ineffective or limited for another? Can universal, selective, and indicative harm reduction prevention programs be designed to target adolescent risky behaviors in general, or does the harm reduction approach necessitate that risky behaviors be targeted separately (e.g., alcohol prevention programs, substance abuse prevention programs, and youth problem gambling prevention programs)?

Classification by Target Group

Classifying prevention initiatives by target group involves working from a risk factor model. According to this model, adolescents may have increased risk for substance abuse depending on whether or not they possess a particular risk factor (Coie et al., 1993; Hawkins, Catalano, & Miller, 1992; Rossi, 1994). For example, if an adolescent has a particular risk factor such as low parental bonding, the probability that he or she will develop a problem with a risky behavior such as gambling or substance use is more likely than that for other adolescents who do not have this risk characteristic (Hawkins et al., 1992). Furthermore, the cumulative nature of risk factors (Coie et al., 1993; Newcomb & Bentler, 1988) suggests that adolescents with multiple risk factors are even more likely to acquire a gambling problem or substance abuse problem (Gupta & Derevensky, 1998b).

Designing, implementing, and evaluating interventions for adolescents based on a continuum of risk necessitates that risk factors be measured, a task that is inherently difficult. Not only is it laborious to describe the duration, intensity, frequency, or combination of risk factors required to predict particular risky behaviors (Brown & Horowitz, 1993), prevention research has focused largely on identifying risk factors linked with any substance use rather than levels of substance use (Hawkins et al., 1992), although certain risk factors have been found to be more closely related to differing levels of reported adolescent substance use (Shedler & Block, 1990). A final concern is that the risk factor model can be misused as a diagnostic tool to target groups for prevention initiatives (Brown & D'Emidio-Caston, 1995).

HARM REDUCTION PREVENTION PROGRAMS

Given harm reduction's historical conceptual difficulty, the characteristics of harm reduction prevention programs (HRPP) need to be delineated while recognizing that the strategies of harm reduction prevention are similar

to those associated with other approaches. For example, school-based drug education programs and media campaigns are common strategies employed independent of prevention orientation (e.g., abstinence, harm reduction). To date, universal harm reduction programs have been primarily integrated in the form of school-based drug and alcohol education and prevention programs. There are a greater variety of strategies employed in terms of 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 or entire schools at high risk for a multiplicity of problems due to socioeconomic status). Selective prevention strategies may include pill checking, safety tips for safe consumption of particular drugs, and HIV testing.

What differentiates harm reduction prevention initiatives from programs representative of other approaches is the incorporation of specific components (e.g., distribution of products and services that can reduce risks associated with particular risky activities) with specific objectives (e.g., providing free condoms and latex gloves for street youth, “drink safe” tips) to accomplish the particular goal of reducing the potential and harmful consequences of risky behaviors.

Goals of Harm Reduction Prevention

As previously indicated in the principles of the harm reduction paradigm, the goal of all harm reduction prevention efforts, whether universal, selective, or indicative, is to reduce the immediate harmful negative consequences of involvement in alcohol and substance use, gambling activities, and other risky behaviors. The corollary of this goal is that harm reduction prevention initiatives aim to prevent misuse or abuse (rather than use) of high-risk substances and problematic involvement in risky activities such as gambling. Therefore, the emphasis is on the adolescent’s becoming an informed, analytic consumer whose choice to participate in risky activities will pose potentially fewer problematic behaviors. (For example, see Shaffer, Hall, and Vander Bilt’s [1996] *Probability, Statistics, and Number Sense in Gambling and Everyday Life: A Contemporary Mathematics Curriculum* program in the field of problem gambling prevention).

Components and Objectives of Harm Reduction Prevention

Awareness and education, fostering positive peer support, and developing decision-making skills are the essential components included in several universal harm reduction prevention initiatives. Descriptions and evaluations of school-based harm reduction education programs for drugs or alcohol

(HRDE) (Beck, 1998; Cohen, 1993; Erickson, 1993; McBride, Midford, Farringdon, & Phillips, 2000) indicate that these components are implemented through a variety of activities.

Classroom dialogue has been the primary means by which these components have been implemented. Communication between students and their teacher focuses on students' questions, attitudes toward risky behaviors and risk takers, and on addressing stereotypes of those who have developed problems due to their risk taking. Personal risk-taking behaviors and intentions around risky activities are also examined. Dialogue is based on the assumption that neither condoning nor condemning involvement in such activities will contribute to an atmosphere where youth feel free to enter into such a dialogue. Discussion and activities aimed at dispelling stereotypes of drug users and abusers and information regarding how to help limit potential and real harms when peers experiment or become problem users are also a focus of discussion in HRDE programs.

Another means of implementing these components is through the distribution of materials outlining specific information (e.g., drug effects, modes of intake, context), legal information about substance use and gambling, ways of preventing or minimizing harm if experimenting with substances, the varying costs and benefits depending on how a substance is used and referral information for those who may need treatment. HRDE also incorporates decision-making skill development and teaching adolescents how to balance risks and benefits through cost-benefit analyses.

The components of universal HRPP have the specific objectives of fostering positive attitudes toward risky behaviors, making informed choices about engaging in risky behavior (e.g., by raising awareness of risk factors which may lead to excessive use) and efficient decision making (in the case of gambling, it may teach adolescents how to set financial limits). It is expected that, once students have adequate awareness about risky activities and have developed effective decision-making skills, they will be able to determine whether they need to avoid alcohol, tobacco, illegal drugs, and gambling completely; know how to be careful if electing to experiment with risky activities; and make the decision to get help for a problem (Beck, 1998). In addition to personal risk-taking behavior, the objective of accepting and altruistic attitudes toward their risky behavior is emphasized, with the long-term objective that adolescents will help peers minimize harmful consequences and make informed choices, resulting in decreased marginalization of risk-taking students.

Selective harm reduction prevention initiatives may incorporate one or more of the components outlined for universal prevention, depending on the selected high-risk population. For example, if the selected population is

youth at high risk for ecstasy misuse, initiatives will incorporate awareness and education by handing out drug-specific information and safety tips at raves and dance clubs.

Harm Reduction for Adolescent Problem Behaviors Associated With Socially Acceptable Risky Activities

A number of plausible reasons suggest that the harm reduction paradigm may be a useful approach to the prevention of adolescent problem behaviors associated with socially acceptable risky activities such as gambling.

Gambling as a Socially Acceptable Activity

The goal of harm reduction within the context of preventing problem behavior rather than prohibiting the activity per se appears particularly appropriate for those activities that are very much a social reality, whether as a common form of entertainment, a means of fund-raising, a method of stock investment, or a custom as part of a meal (i.e., alcohol). There is little debate that gambling has been historically part of our culture. However, gambling has never been as widespread and promoted as it is presently. Gambling is unique in that it can be accessed by youth easily without the need to cross social barriers (i.e., playing cards with friends for money), in contrast to alcohol and cigarette use, where youth must, in general, gain access through sales clerks or other adults. Gambling is also often promoted within the home environment, and as such is often perceived as a harmless activity (Gupta & Derevensky, 2000), whereas most youth are aware that alcohol and cigarette use involves risks and potential negative health consequences. Among the important differences is that gambling, when engaged in infrequently and responsibly, does not carry the same health risks and consequences as do cigarette, alcohol, and drug use, possibly making the promotion of abstinence less critical (Korn & Shaffer, 1999). Although benefits of drawing on the findings of existing prevention research for other risky behaviors are possible, youth gambling prevention policy must be eventually grounded in research conducted specifically on this issue.

There is ample reason to believe that involvement in risky behaviors can be approached responsibly, controlling and stopping the progression to problem behavior, given that the majority of individuals who drink or those who gamble do not develop significant problems. Findings that reveal that nearly all those alcoholics who "spontaneously recover" from alcohol problems imposed a period of self-abstinence (Sobell, Sobell, & Toneatto, 1991) sug-

gest that individuals can help define and establish their own treatment goals. Furthermore, research on their patterns of use (Gliksman & Smythe, 1982) and personal and social control mechanisms of various substance use (Boys et al., 1999; Dembo, Babst, Burgos, & Schmeidler, 1981; Kandel, 1985) also point to the possibility of achieving controlled involvement in risky behaviors, free from problematic involvement. For example, evidence driven from the adult literature indicates that substance users make rational choices, weighing the pros and cons of drug or alcohol use, and utilize informal control mechanisms of social networks (Cheung, Erickson, & Landau, 1991; Erickson, 1982; Murphy, Reinerman, & Waldorf, 1989), and that the vast majority of adults and adolescents gamble but experience few negative consequences (Azmier, 2001; Gupta & Derevensky, 2000).

A Continuum of Harm

Gambling participation, very much like drug use (Cheung, 2000), falls upon a continuum, ranging from controlled responsible use to uncontrollable gambling participation. This latter group of people are often referred to as pathological gamblers (American Psychiatric Association, 1994) and exhibit the same lack of control and decision-making capacities as those dependent on drug use. These individuals may not be viable candidates for a harm reduction approach and likely require intensive therapeutic treatment as opposed to primary prevention efforts. Those individuals toward the beginning of the continuum, however, are capable of making informed choices, weighing the personal benefits of drug use or gambling against their detrimental consequences. The harm reduction approach would be most applicable to those gamblers falling toward the front end of the spectrum, while not being particularly useful to those who have already lost an ability to control their gambling participation. So, although somewhat limited in scope, harm reduction appears to have important properties that may be very beneficial to the majority of the underage individuals.

The significant variance in the potential for harm resulting from socially acceptable risky activities differentiates gambling and alcohol consumption from activities such as tobacco, heroine, and cocaine use; unprotected sex; and risky driving, which have been shown to incur significant harm to the majority of their participants. Research on risk and protective factors (Cicchetti & Toth, 1997; Jessor, 1998) 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 (see Dickson et al., 2002). 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 adolescent gambling behavior from escalating into serious pathological gambling.

Current trends in research on adolescent problem behavior have also begun to conceptualize risky behavior on a continuum, drawing important distinctions between substance use per se and use-related problems (Baer, MacLean, & Marlatt, 1998; Dickson et al., 2002). Given that youth generally have access to such risky activities despite legal age limits, and that youth will eventually be faced with the decision of whether or not to involve themselves in risky activities upon reaching legal age, it seems plausible to teach ways of drinking and gambling responsibly, maintaining low probabilities of developing problem behaviors and associated harms. Furthermore, the majority of comprehensive evaluations and metaevaluations of current abstinence-based prevention efforts have generally revealed nonexistent or negligible effects in influencing alcohol use among youth (W. B. Gorman, 1995; Hansen, 1992), and several have claimed that such results speak strongly to the need for an alternative approach (Beck, 1998; Brown & D'Emidio-Caston, 1995).

The application of the harm reduction paradigm to a broad range of problem behaviors has not been without criticism (Des Jarlais & Friedman, 1993; Kalant, 1999; Mugford, 1993; Newcombe, 1992). 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 harm to significant psychological, social, physical, and financial harm to self and others, the utility of the harm reduction approach as a means to prevent problem behavior remains promising.

Adolescent Experimentation

The harm reduction paradigm treats adolescent involvement in risky behavior as a reality. Conceptual differentiation between normal experimentation and abuse (Jessor, 1987; Shedler & Block, 1990) as well as findings from research undertaken to examine patterns of problem behaviors over the life span suggest that most adolescent problem behaviors, including delinquency (Moffitt, 1993), alcohol problems (Zucker, Fitzgerald, & Moses, 1995), substance use (Baer, et al., 1998), and multiple problem behaviors (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998), are generally limited to the period of adolescence and do not necessarily lead to significant long-term psychosocial or physical problems (in contrast to a path of lifelong persistent problem behaviors). This has led several researchers (Baer

et al., 1998; Cohen, 1993; Erickson, 1993) to suggest that there may be a prominent role for prevention initiatives that seek to limit the harmful consequences of problem behavior until the onset and course of problem behaviors has run its term, rather than aiming to change the course *per se*. It is assumed that these differing goals entail the targeting of separate risk profiles and unique needs of adolescents within each trajectory. Moffitt (1993) describes the closure of the time-limited trajectory as a result of natural social, biological, interpersonal, and psychological changes occurring at the end of adolescence.

Although traditionally risk taking has been conceptualized as a negative activity, current developmental research is moving toward a holistic notion of risk taking, whereby healthy risk taking, such as creativity and accepting challenges and adventures, is viewed as a sign of healthy adolescent development of autonomy, relationship, and independence. Research differentiating healthy versus harmful paths of risk taking (Greene, Krcmar, Walters, Rubin, & Hale, 2000; Gullone & Moore, 2000; Parsons, Halkitis, Bimbi, & Borkowski, 2000) stresses the potential benefits for a harm reduction approach that aims to equip adolescents to express risk taking safely and in ways that promote their health.

In respect to youth problem gambling, although gambling may be for most youth a normal experimental behavior, findings that the initiation into gambling activity tends to occur much earlier than adolescence, with prevalence rates remaining relatively stable across early to late adolescence, call for more research to examine whether a cohort effect is evident for youth gambling behavior (Gupta & Derevensky, 1998a).

Youth Taking an Active Role in Prevention

The harm reduction paradigm also views adolescents as having an active role in prevention. It is important to provide adolescents with the education and skills to make healthy decisions for themselves and to encourage their peers to do likewise. Empowering students to take an active role in the prevention of problem behaviors is particularly important to efforts to prevent problem gambling, given adolescent and societal misperceptions of the risks and consequences of gambling and the difficulties of attracting youth problem gamblers into treatment (Gupta & Derevensky, 2000). The following section will illustrate the active relationship required between preventionists and youth in order to equip students with the skills, goals, and motivation to gamble responsibly.

A CONCEPTUAL FRAMEWORK FOR HARM REDUCTION PREVENTION: PREPARING YOUTH TO GAMBLE RESPONSIBLY

In light of the apparent fit of the harm reduction paradigm to problem gambling and other socially acceptable risky activities, it is crucial to ensure that the design and implementation of harm reduction prevention initiatives be consistent with our empirical knowledge of what constitutes effective science-based prevention (see Coie et al., 1993 for a review of the principles of prevention science). With the goal of preparing youth to ultimately gamble responsibly, a conceptual framework for science-based harm reduction prevention for adolescent problem gambling will be articulated. This framework may have implications for the prevention of other youth problem behaviors that are associated with socially acceptable risky behaviors. It should be noted that this model is also predicated on future efforts to identify other risk and protective factors.

Harm Reduction and the Risk-Protective Factor Model

Empirical research indicates that program effectiveness can be measured by the extent its program goals and components buffer risk factors and enhance protective factors for given problems, thereby successfully altering negative life trajectories toward the onset or maintenance of problematic risky behavior *and* enhancing resiliency (Coie et al., 1993). Risk-protective factor terminology has not been widely used in the harm reduction prevention literature. However, it can be argued that the goals and components of HRPPs can be viewed in terms of how they influence particular risk and protective factors.

Despite the complexities of using the risk-protective factor model (see Coie et al., 1993; Dickson et al., 2002), this model can be used as the theoretical basis of harm reduction because of its role in science-based prevention, its empirical validity in current trends in adolescent risk behavior theory (Jessor, 1998) and its role in empirically-supported theory of intentional behavioral change (DiClemente, 1999), which has been used to understand the initiation of health-protective behaviors (e.g., healthy eating and exercise) and health-risk behaviors such as gambling, along with the modification of problem behaviors such as excessive alcohol use and problem gambling (DiClemente, Story, & Murray, 2000).

A particular strength of the risk-protective factor model is that it allows prevention specialists to create, evaluate, and refine HRPPs based on changes in risk and protective factors shown to account for changes in targeted behav-

ior, attitudes, and so forth (Coie, 1993) rather than relying on traditional means of measuring an HRPP's effectiveness; quantitatively measuring change rates of harmful consequences of risky behaviors. Although prevention program evaluation using the risk-protective factor model is not without flaw, the conventional means of HRPP evaluation is plagued by methodological difficulties (Kalant, 1999; Mugford, 1993; Ogborne & Birchmore-Timney, 1999; Strang, 1993) and has failed to generate further knowledge of the developmental course of adolescent high-risk behavior because it does not incorporate developmental theory. However, evaluating a program's effects on targeted risk and protective factors may inform our knowledge about the development of adolescent risk behavior and to help prevention experts design more appropriate prevention and intervention (see Derevensky et al., 2001, and Dickson et al., 2002, for comprehensive reviews).

Universal HRPP Strategies and Targeting Risk Factors for Problem Gambling

Descriptions of current HRPPs in the field of substance abuse indicate that the objectives of increasing knowledge and teaching good decision-making skills are implemented to reduce a number of risk factors such as values and attitudes associated with increased risk of substance and alcohol abuse (Brunswick, McKeon, & Pandina, 1982; Colder & Chassin, 1999), low perceived life chances (Bachman, Johnston, & O'Malley, 1991), expectations of social benefit (Kline, 1996), and poor coping skills (Colder & Chassin, 1999; Sullivan & Farrell, 1999).

Similarly, HRPPs need to limit known risk factors of youth problem gambling. Research has been undertaken to identify the risk factors for adolescent problem gambling (for a summary of risk factors, see Dickson et al., 2002, and Gupta & Derevensky, 2000). The examination of the commonalities of risk factors for problem gambling and other addictions provides sufficient evidence to suggest that gambling can similarly be incorporated into more general addiction and adolescent risk behavior prevention programs. Current research efforts (Battistich et al., 1996; Costello et al., 1999; Galambos & Tilton-Weaver, 1998; Loeber et al., 1998) may suggest the utility of a general mental health prevention program that addresses a number of adolescent risky behaviors (e.g., substance abuse, gambling, risky driving, truancy, and risky sexual activity).

Although risky behaviors share many common risk factors, risky activities differ on several important dimensions, and our examination of harm reduction prevention strategies suggests that the harm reduction approach is most appropriate for targeting those risky activities that lie on a continuum of

harm (when engaged in responsibly and moderately, yield no negative consequences) and are socially acceptable. This suggests that a general mental health prevention program would be most effective if it were to incorporate elements of both abstinence and harm reduction principles. Further research is required to determine the positive and/or negative consequences of universal HRPPs that target all risky behaviors, including those that are notably more appropriately addressed with the abstinence approach (those that do not have a continuum of harm and/or are not socially acceptable) (Derevensky et al., 2001).

Delaying age of onset. Whether HRPPs are designed specifically for problem gambling or incorporated into a general mental health curriculum targeting multiple high-risk behaviors, the need for merging abstinence and harm reduction prevention approaches is exemplified by the apparent contradiction that arises when the principles of the harm reduction paradigm are applied to adolescents. Research clearly highlights that age of onset of gambling behavior represents a significant risk factor, with the younger the age of initiation being correlated with the development of gambling-related problems (Dickson et al., 2002; Gupta & Derevensky, 1998a; Jacobs, 2000; National Research Council, 1999; Wynne, Smith, & Jacobs, 1996). This finding strongly suggests that delaying age of onset of gambling experiences would be fundamental in a successful prevention paradigm, which fits better under the umbrella of abstinence and does not adhere to the principles of the harm reduction approach.

Prevention experts and treatment providers cannot advocate for a value-neutral stance (e.g., accepting the adolescent's decision to engage in gambling) toward involvement in risky activities while conveying the expectation that youth are required to behave appropriately as citizens under the law. Given that prevention programs are often implemented by classroom teachers, each bringing his/or own beliefs and values to the message conveyed, how this incongruence is addressed varies. Nonetheless, HRPPs need to communicate the message that legal age limits for gambling (as well as for alcohol) are in place for purposes of allowing time for preparing youth to approach risky activities with responsible values, attitudes, and behaviors. Legal age limits convey the risky nature of activities and limit particular contexts and forms of gambling that often involve numerous high-risk activities. For example, the casino atmosphere generally exposes youth to smoking, alcohol consumption, and the potential of propagating fantastical images of "high rollers" and instant money. Thus, differences between unstructured (e.g., betting between friends) and formal/structured (e.g., betting at the

blackjack table and slot machines) gambling need to be openly discussed with youth.

Teaching responsible gambling to youth. HRPPs target risk factors by teaching youth emotional and cognitive coping skills and by providing cognitive decision-making tools such as cost-benefit analyses. Similar to strategies described in educational school-based HRPPs (Beck, 1998; Cohen, 1993; Poulin & Elliott, 1997; Riley et al., 1999), teaching responsible gambling needs to begin around familiar substances other than gambling, and emphasizes that most of the things we consume have the potential for both harm and benefit depending on the way we use them. School-based HRPPs need to target specific information about gambling to various age groups, educating youth about the forms of gambling they will most likely be exposed to at each particular age (e.g., 9-year-olds are likely to be exposed to scratch tickets and bingo, largely within their family environments). Information on the harmful consequences that an adolescent may face (and how these differ from the consequences adults incur as a result of gambling problems), as well as strategies on how to gamble safely, need to be topics of discussion.

HRPP Universal Strategies and Enhancing Resiliency for the Prevention of Youth Problem Gambling

One of the central goals of science-based prevention is to promote resilience. Thus, we need to ensure that HRPPs include components that enhance salient protective and resource factors specific to the period of adolescent development. Despite the lack of emphasis on resilience in current HRPPs, both resource factors (those operating independent of risk status) (Hammen, 1992) and protective factors (those that interact with risk status) contribute to one's resilience and need to be considered in the design of effective youth gambling HRPPs. It is important to emphasize that the protective factors (e.g., school connectedness) targeted in HRPPs interact with the risk factors (Coie et al., 1993) of problem gambling (high perceived benefits of gambling and low risk perception) to buffer the cumulative effects of these risks, disrupt the mediational chain through which particular risk factors operate, or prevent the initial occurrence of the risk factor altogether. The importance of enhancing resilience is furthermore highlighted by the unavoidable situation that most HRPPs are universal, giving rise to the possibility that high- and low-risk youth may have differential benefits and/or harms upon receiving the program.

Although there are currently no studies on protective mechanisms, or more generally on resiliency, for youth with respect to problem gambling, similar protective factors have been found to affect a multiple number of health and developmental outcomes in the presence of various stressors (Derevensky et al., 2001; Rutter, 1987, 1990; Werner & Smith, 1982). Thus, it is likely that the common protective factors found for a number of problem behaviors will be operative in the process of resiliency to problem gambling as well.

Despite gaps in research delineating the numerous ways a protective factor affects risk factors (e.g., school connectedness may effect an adolescent's perceived benefits of gambling by decreasing peer conflict, increasing poor coping skills, and increasing achievement motivation, or it may help to prevent the development of depression), it is becoming increasingly clear that protective factors must be targeted in prevention programs, given their function of furthering healthy development. Thus, whereas increasing knowledge and enhancing decision-making skills has been a large part of existing school-based HRPPs, it is crucial for programs to be designed to go beyond targeting risk factors to engage student experiences in order to affect attitudes, perceptions, values (goals), and motivation.

Protective factors can be conceptualized as the building blocks of resilience and are "protective" because they promote general health by helping adolescents accomplish stage-related tasks while helping alter the life trajectories toward the onset or maintenance of problem gambling. HRPPs need to include strategies that can be expected to help adolescents accomplish stage-related tasks, ensuring that the harm reduction approach is developmentally appropriate for adolescents.

The central psychosocial tasks of adolescence have traditionally been described as the challenge to attain autonomy and identity (Erikson, 1982). More recently, the major social developmental tasks of adolescence have been outlined as the learning of how to relate to parents with increasing autonomy, forming peer relationships, and learning skills to cope emotionally, socially, and financially as an independent adult (Allen & Pfeiffer, 1991; Hauser & Bowlds, 1990). Thus, of central concern is the changing nature of relationships youth have with their parents, peers, school, and community. It is not surprising that the significant factors of parent-family connectedness and perceived school connectedness were found to be protective against every health-risk behavior measure except pregnancy (Reznick et al., 1997).

Connectedness (also referred to as *belonging* or *relatedness*) denotes the existence of limits (e.g., school rules, social norms, family traditions) and autonomy (independence). For example, in their study of attachment and adolescent deviance, Allen, Moore, and Kuperminc (1997) found that

youth's having parental autonomy in some areas reflecting personal style while parental authority is kept in other areas that are more central to an adolescent's adaptive functioning (e.g., academic performance) appears linked to increased resiliency among youth. Furthermore, it is reasonable to conceive that cognitive and affective experiences of authority (e.g., limits for acceptable behavior) and independence give way to an adolescent's value of responsibility. Thus, HRPPs can promote resiliency toward youth problem gambling by including strategies aimed at fostering the value of responsibility and responsible behavior (particularly in the context of high-risk behaviors).

Fostering the value of responsible gambling. Teaching youth responsible gambling behavior is essential, but if youth do not have responsible gambling as their goal and are not motivated to behave responsibly, there is an increased likelihood that gambling will develop into problem gambling for some youth. Much theoretical and empirical research on attitudes and motivation (Azjen & Fishbein, 1980; Becker, 1974; DiClementi & Prochaska, 1998) has been undertaken to understand the development of values. For example, perceived benefits of risk taking have been found to be more important than the costs that may be incurred by unsafe sex (Parsons et al., 2000), substance use, and dangerous driving (Bentlin, Slovic, & Severson, 1993; Moore & Gullone, 1996; Parsons, Siegel, & Cousins, 1997). These findings raise a critical question for prevention experts. How can youth be encouraged to value responsible gambling and, more generally, to value health?

Although teaching responsibility (e.g., by increasing decision-making skills and knowledge) to youth is essential, it bears certain constraints. For example, the emphasis on instructing youth to use cost-benefit analyses requires youth to compare harmful consequences. Yet, it has been argued that this is problematic because the definition of harm is heavily dependent on one's value systems (Kalant, 1999; Mugford, 1993; Strang, 1993). Some youth, for example, may argue that the benefits of binge drinking (e.g., relieving stress, social time) outweigh the potential harms of binge drinking (e.g., physical accidents that may happen in the midst of lowered inhibitions, for example, have unprotected sex, drinking and driving). Furthermore, health and responsible behavior have usually been presented as objectives or ideals toward which youth are encouraged to strive and are therefore extrinsic to one's self. Numerous evaluations of abstinence-based school alcohol and drug prevention programs and policies (Baum, 1996; Brown & D'Emidio-Caston, 1995; Brown, D'Emidio-Caston, & Pollard, 1997; D. M. Gorman, 1998) highlight how easily ideals can be dismissed by youth as being too far

removed from the realities of life. This has contributed to decreased credibility of program and school authorities and program success.

The inclusion of strategies aimed at fostering the value (goal) of responsibility compensates for the limits of "teaching responsible gambling" (providing information and cognitive skills), and studies of resilience offer direction for prevention experts seeking to foster the values of responsibility and health.

Health and responsible behavior as a sense of self. Connectedness is an aspect of one's identity. Just as a resilient youth's identity incorporates features of connectedness (limits and autonomy) through affective and cognitive experiences of limits and autonomy, responsibility and health need to be incorporated into the adolescent's sense of self through cognitive and affective experiences. By encouraging this process, responsibility and health become less extrinsic ideals and more intrinsic senses (motivations and goals) (Gow, 1996).

Ideals can be taught, but senses are developed through combined cognitive and affective experiences. Students need to have the opportunity to test these values in their real life experiences in order to validate them and know whether or not, or why, and to what end he or she will commit to them. When youth experience health as a sense of self, it will become one of the several criteria considered when making decisions: Is this attitude or behavior consistent with who I am?

Attempting to foster the value of responsible gambling and, more generally, health seems more like trying to develop character and promoting positive mental health, which can be a daunting goal. This is the active relationship between preventionists and youth that illustrates how youth need to be part of HRPP implementation. The active involvement of youth in this relationship is what is necessary to equip students with the skills, goals, and motivation to gamble responsibly.

The promotion of positive mental health rests on a weaker scientific foundation than do efforts to prevent specific disorders because of the difficulty in identifying and measuring outcomes of mental health promotion efforts (Levine & Perkins, 1997). Nevertheless, this is the essence of resilience. Resilience is a dynamic process with developmental antecedents and consequences that are not static, and there are multiple points of vulnerability for disorders over a lifetime. Youth whose sense of self (character) includes a sense of responsibility and health have a greater likelihood of adapting when faced with new adversities (analogous to advanced problem solving in math). Vaillant (1988) highlights the importance of this goal by noting that key features of personal character and social functioning sometimes have

more powerful predictive value for long-term adjustment than do diagnostic symptoms.

HRPPs need to incorporate means that offer youth opportunity for cognitive and affective exposure to responsible behavior and health and for testing validity. Gow (1996) argues for the important role of the teacher, liberal arts education, and relationships between youth and the community (e.g., internships, community volunteering). Research on the importance of rites of passage in adolescents (Brookins, 1996; Bushnell, 1997; Fiese, 1992; Gavazzi & Blumenkrantz, 1993; Schuck & Bucy, 1997) and mentoring (Barron-McKeagney, Woody, & D'Souza, 2001; Royse, 1998; Thompson & Kelly-Vance, 2001; Vance, Fernandez, & Biber, 1998) may inform our efforts to design strategies in HRPPs toward this goal. Finally, the task of promoting resilience by fostering particular values points to the need to explore the possibility of placing HRPPs for problem gambling into a more general mental health curriculum for students.

IMPLICATIONS FOR TREATMENT

Treatment providers need to take into account the individual characteristics and backgrounds of their clients, as well as the larger social context in which their clientele live. North American adolescents live in a society that has welcomed gambling as a means for obtaining government revenue and as an acceptable form of adult entertainment. We have pointed to the utility of the harm reduction approach for those who have not yet developed a problem with gambling. Whether the treatment goal of choice is acquired from an abstinence or harm reduction approach, clinicians must help prepare the adolescent to cope in a society that has embraced an activity that has, at one point, been the monster in their closet.

CONCLUDING REMARKS

Today's youth will be tomorrow's adults having free access to multiple forms of legalized gambling. The introduction of harm reduction prevention initiatives to help youth become less vulnerable to the risks of a gambling problem is timely. In the midst of declining assurance in our social institution and a growing sense that "experts" do not have all the answers, there is overwhelming acknowledgement of the need to work collaboratively for the health of our youth. Supported by research pointing to the critical task of targeting risk and protective factors in multiple domains (Coie et al., 1993),

mental health organizations across Canada and the United States advocate for collaborative efforts among families, schools, social services and communities (Brounstein, Zweig, & Gardner, 1999; Hanvey, 1996). The public school curriculum is moving toward student collaborative models (Villa & Thousand, 1992) that incorporate several protective factors and educational reform (e.g., Gouvernement du Québec Ministère de l'Éducation, 1997, 2000) and is shifting focus from merely academics to integrating psychosocial development and academics. In this environment of opportunity, it is likely that the design and implementation of effective HRPPs will provide youth with the knowledge, skills, sense, and commitment needed to remain in control.

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