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Should gambling be included in public health surveillance systems?

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Abstract

This paper examines the question of whether indicators of pathological or disordered gambling should be included in current public health surveillance systems. Such inclusion can be justified in terms of the emerging associations between disordered gambling and the leading indicators of the risk for premature morbidity and mortality. Additional justification can be seen in terms of the potential of Internet gambling to increase the incidence of gambling disorders, particularly among younger and older populations. The paper describes characteristics of

public health surveillance systems and recommends including gambling in such systems, on at least a provisional basis.

Introduction

A number of investigators have argued that gambling and gambling-related sequelae be viewed within a public health perspective (Grant, Williams, & Kim, 2006; Korn, 2000; Korn, Gibbons, & Azmier, 2003; Messerlian, Derevensky, & Gupta, 2005; Poulin, 2006; Shaffer & Kidman, 2004; Shaffer & Korn, 2002). An important component of public health research is the collection of data within the framework of public health surveillance. The surveillance of health-related events (becoming a disordered gambler) or conditions (being a disordered gambler) is considered the modern foundation for the use of epidemiology to inform policy makers of the need to take actions to promote public health (Berkelman, Stroup, & Buehler, 1996). Today, "surveillance is seen by many as the bedrock of public health" (McQueen, 1999, p. 1312).

Background

> Public health surveillance is the ongoing, systematic collection, analysis, interpretation, and dissemination of data about a health-related event for use in public health action to reduce morbidity and mortality and to improve health. Surveillance serves at least eight public health functions. These include supporting case detection and public health interventions, estimating the impact of a disease or injury, portraying the natural history of a health condition, determining the distribution and spread of illness, generating hypotheses and stimulating research, evaluating prevention and control measures, and facilitating planning. Another important public health function of surveillance is outbreak detection (i.e., identifying an increase in the frequency of disease above the background occurrence of the disease). (Centers for Disease Control and Prevention [CDC], 2004, p. 1)

Berkelman et al. (1996) suggest that "surveillance should begin when there exists, or is *likely to occur* [italics added] a public health problem for which [programs] for prevention and control of a health event, have been, or may need to be, initiated" (p. 735). The possible need for new or adapted programs that target gambling disorders raises two important questions.

First, is disordered gambling viewed or viewable as a current or potential public health priority? There are a number of investigators who have argued that the answer is definitely yes (Korn, 2000, Korn et al., 2003; Messerlian et al., 2005). Evidence is beginning to accumulate that disordered gambling "is associated with

significant morbidity," including "suicidality" (Grant & Potenza, 2004a, p. xiii). Nevertheless, disordered gambling does not yet draw the kind of attention from society and policy makers as that given to other social issues, such as drugs, alcohol, smoking, or HIV infection, to name a few (Evans, 2003). Gambling simply has not been viewed with the same degree of concern elicited by those behaviors currently included in ongoing public health surveillance programs, such as the Behavioral Risk Factor Survey conducted jointly by the CDC and the respective states.

Consequently, the allocation of scarce resources to address disordered gambling has, by comparison with other disorders, a relatively low to non-existent priority at both the federal (Finkelstein, 2003; Hyman, 1999) and state level (Addiction Technology Transfer Center, 2003), with Canadian provinces placing a much greater emphasis on funding research and other initiatives relative to U.S. states. One sign of this low priority is the lack of effort; Iowa has been an exception since 1997, monitoring gambling in a consistent fashion or systematically on a periodic basis, as Connecticut once attempted (Wharton Economic Forecasting Associates Group, International Communications Research Survey Research Group, Lesieur, & Thompson, 1997). A related issue is the significant failure to carefully determine the key indicators that need to be tracked by time, place, and person: "Non-random aggregations of disease [e.g., disordered gambling] are manifested along axes of measurement of time, of space, of individual personal characteristics, and of certain community characteristics" (Stallones, 1980, p. 80).

Second, are there programs currently available and/or in development, that could be implemented if needed? The answer to this second question is mixed. There is, at present, no empirically validated treatment for pathological gambling (Petry & Armentano, 1999). Strong evidence that treatment programs are beneficial is relatively scarce (Korn & Shaffer, 2004; Oakley-Browne, Adams, & Mobberley, 2000; Toneatto & Ladouceur, 2003), although a number of treatment strategies show promise (Hodgins & Petry, 2004; Hollander, Kaplan, & Pallanti, 2004; Kim, Grant, & Grosz, 2002; Pietrzak, Ladd, & Petry, 2003; Stinchfield & Winters, 2001; Tavares, Zilberman, & el-Guebaly, 2003), particularly in the area of cognitive behavioral treatment (Bujold, Arkowitz, & Menchola, 1994; Ladouceur et al., 2002; Sylvain, Ladouceur, & Boisvert, 1997). Similar arguments apply to prevention programs that, by comparison with treatment research, are a relatively recent endeavor in the field of disordered gambling (Derevensky, Gupta, & Dickson, 2004; Evans, 2003; Ferentzy, Turner, & Skinner, 2006; Ferland, Ladouceur, & Vitaro, 2002; Potenza & Griffiths, 2004). Finding answers to the two questions raised above has been hindered by the fact that the funding of basic and applied research into disordered and underage gambling is a relatively recent phenomenon.

Policy toward funding of gambling research began to change in the 1990s, when a

number of states and Canadian provinces committed funding and resources to address the problem of gambling (NASPL, 2003). The change in funding for research into gambling at the federal level in the United States (e.g., Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001, 2002, 2004) has been credited in part to the report by the National Gambling Impact Study Commission (Cunningham-Williams & Cottler, 2001). The study of gambling-related disorders remains, relative to other disorders, largely ignored by policy makers, at least in the United States, where funding initiatives remain relatively scarce.

A recent review of the literature on pathological gambling has concluded that, at present, there remains a shortage of quality research that meets the general standards of scientific rigor (National Research Council, 1999), although this is beginning to change (Grant & Potenza, 2004b; see also the longitudinal research being done at Harvard Medical School's Division on Addictions[1]). It will take time for gambling researchers to make up for this scarcity and communicate the results to policy makers. Much of the available research is of little value to policy makers (Gambino, 2005, 2006a, 2006b; Volberg, 2004), most notably because the focus of this research has not been on measures that are useful to policy makers (Gambino, 2005, 2006b; Jenkins, 2003). Policy-relevant measures include severity, disability, impairment, and need for treatment (Gambino, 2005, 2006b; Hadorn, 2000; Mechanic, 2003).

A second and related reason for the lack of relevance of current research to policy is the failure to relate case definitions, such as the use of cutoff scores, to clinical and policy-related outcomes, for example, the question “who will seek treatment?” (Gambino, 2006b). In sum, the early reliance on large-scale epidemiologic studies (due notably to funding by the respective states and provinces) has not produced the advances in knowledge that may be commensurate with the relative expense of such research. This is not to deny the value of such research (National Research Council, 1999); rather, the lack of policy-relevant measures reflects the limited usefulness of the questions asked by the funding sources, including questions about the prevalence of pathological gambling and who is at greatest risk (Welte et al., 2001, 2004).

The current argument for public health surveillance of gambling

Buehler (1998) notes two particular circumstances that are important for making a case for establishing a surveillance system to monitor indicators of [gambling] behaviors. First, if it is agreed that disordered and underage gambling represents a potential new public health problem, then “the implementation of surveillance is critical to an effective early response” (Buehler, p. 435). Second, if public health agencies agree to include gambling as a health problem, then surveillance

represents “a first step in defining new roles” (Buehler, p. 435).

One criterion for the inclusion of gambling indicators in surveillance systems would be the recognition of gambling as a public health priority. In view of the relatively recent emergence of efforts to promote a public health paradigm for the study and understanding of gambling (e.g., Korn & Shaffer, 1999), the recognition of gambling as a public health priority remains elusive. An additional criterion would be a plausible argument or rationale that the monitoring and evaluation of gambling indicators is in the public interest (Teutsch, 1994). The potential for an increase in the incidence of disordered gambling through widespread in-home gambling on the Internet (Korn, 2000) might qualify as support for the latter view, but there is little evidence at present that such a phenomenon is in play (Cunningham-Williams, Cottler, & Womack, 2004; Griffiths, 2001; Ialomiteanu & Adlaf, 2001).

A failure to detect any significant rise in gambling disorders among Internet users may be due to the scarcity of research into the relationship between any increase in gambling on the Internet, and prevalence of disordered gambling (Derevensky & Gupta, 2007; McBride & Derevensky, 2009). Alternatively, the trend line necessary to detect any significant increase may be longer than the period covered to date. For example, the National Annenberg Risk Survey of Youth has been tracking gambling, including Internet gambling, among youth only since 2002 (Romer, 2006). A third possibility may be found in recent polls which report that the number of gamblers who frequently, more than once a year, gamble on-line remains relatively low in both the United States and Great Britain (Harris Poll, 2006). Only 4% of gamblers report gambling more than once a year on on-line poker, 3% at an on-line casino, and less than 2% on sports on-line. In a recent review of the literature, it was reported that the prevalence of Internet gambling is between 0.3% and 0.4% (The WAGER, 2007).

Can a reasonable argument be made that gambling and its sequelae meet recommended criteria needed to justify creation of at least a modest surveillance program for gambling among both adults and adolescents? This is a critical question because the absence of strong evidence that gambling is a significant factor related to the public health represents both a scientific and political barrier to the acceptance of gambling as a public health issue that deserves some measure of priority. People are known to die from illicit drugs, drunk driving, and AIDS. A similar argument, with the possible exception of suicide-related deaths (Maccallum & Blaszczynski, 2003; Newman & Thompson, 2003) — and the evidence on the latter is weak — cannot yet be made in the case of disordered gambling. In general, disordered gambling is a non-fatal disorder; therefore, any evidence of its importance must come from a demonstration of the relationship between excessive gambling and measures of morbidity.

The accumulation of evidence of a strong or even a moderate relationship between

gambling and measures of morbidity is only now beginning to emerge (Gerstein et al., 1999; Grant & Potenza, 2004b; Morasco et al., 2006; Pasternak & Fleming, 1999; Proimos, Durant, Pierce, & Goodman, 1998; Shaffer & Gambino, 2004) from recent evidence obtained on adolescents and adults. Proimos et al. (1998) obtained evidence of a strong relationship between adolescent disordered gambling and those behaviors associated with the leading causes of mortality and morbidity among adolescents and adults, as monitored by current surveillance programs.

Promios et al. (1998) recommended the inclusion of gambling in surveillance systems, as well as the value of screening adolescents for gambling in the primary care setting, as an indicator of other potentially hazardous behaviors, such as drinking and driving, illicit drug use, and other risky behaviors. Shaffer and Gambino (2004) have examined this same set of behaviors and found a strong dose-response relationship with the number of gambling problems reported; that is, the greater the number of gambling problems reported, the greater the likelihood that the gambler engaged in the risky behavior. These risky behaviors included, among others, driving and drinking, the frequency and intensity of substance use (tobacco, alcohol, marijuana, cocaine), violence, suicide-related behaviors, and behavior related to AIDS (e.g., unprotected sex). A recent analysis of a large-scale (N = 43,093) population study provided additional evidence of the association between disordered gambling and medical disorders, lowered health functioning, and higher rates of medical utilization, demonstrating also that even a moderate (five times a year) frequency of gambling can be associated with adverse health consequences (Morasco et al., 2006). In the strongest analytical model used in this study, “which controlled for demographic attributes and behavioral risk factors, pathologic gamblers were significantly more likely than low risk individuals to have been diagnosed with tachycardia, angina, cirrhosis, and other liver disease” (Morasco et al., p. 3).

Pasternak and Fleming (1999) screened a large sample of adults in a primary care setting for pathological gambling and found strong relationships between pathological gambling and the use of tobacco and alcohol. In addition, pathological gamblers tended to rate their health more poorly than did those who were not pathological gamblers. Similar results were obtained in a recent national prevalence study on pathological gambling (Gerstein et al., 1999). These investigators found relationships between pathological gambling and current mental problems, receiving psychiatric treatment, family problems, depressive episodes, job loss, bankruptcy, being arrested, and being incarcerated. Each of these lines of evidence supports the need for monitoring gambling behaviors.

It might be argued that since many of the behaviors noted earlier are associated with a higher risk of mortality in those who engage in them relative to those who do

not, the relationship between disordered gambling and these behaviors implies comparable increased risk of mortality. The problem is the indirect nature of the association. These results were obtained from cross-sectional data in prevalence rather than incidence studies. Under these conditions, it cannot be shown that the gambling disorder preceded or followed the onset of the other risky behavior (e.g., illicit drug use).

A potential public health problem?

One recent phenomenon is the emergence of widespread Internet gambling (Cunningham-Williams et al., 2004). Recent surveys place Internet use at three of every four households in the United States (Pew Internet & American Life Project, 2006) and two of every three Canadians (Statistics Canada, 2006). In a recent fact sheet, the American Gaming Association cited a report by Christiansen Capital Advisors that Internet gambling revenue was estimated in American dollars at $11.9 billion in 2005. Further, of the 23 million people estimated to have gambled on the Internet in 2005, about 8 million were from the United States.

Although there is little current evidence that Internet gambling has resulted in a major increase in disordered gambling, this possibility cannot be ruled out for the future and therefore deserves further consideration and discussion (Korn, 2000). The continuing growth of Internet gambling means that millions of people are able to gamble electronically by interacting with the computer or TV in the home or at work, or through hand-held devices while traveling. This growth also implies that there is the potential for a quantum leap in the number of active cases of disordered gambling. Recent research by Petry and her colleagues (Ladd & Petry, 2002; Petry, 2006) indicates that although the numbers remain low, of the 6.9% of people who gamble on the Internet, among those who gamble frequently (2.8%), prevalence rates of pathological gambling reached two thirds.

This worst-case scenario clearly meets the criterion for surveillance that there is, or will be, a need for programs of prevention, treatment, or education. The only ambiguities are in the definitions of *likely to occur* and *need for*. The potential future of this phenomenon may be judged, in part, by two significant trends, with both suggesting a similar time frame for addressing this issue.

Internet growth among adolescents and seniors

First, the growth of Internet gambling may be judged against the backdrop of a generation of young people who have grown up completely in an atmosphere of widespread acceptance and availability of legalized gambling (Shaffer, Hall, Vander Bilt, & Vagge, 2003). This generation is merging into one that is becoming more facile, better versed, and more involved in computer technology and use of the

Internet at an early age. For example, a recent analysis reveals the sustained growth in access and use of the Internet among 3- to 18-year-olds (U.S. Department of Commerce, 2002) as ranging between 249% (ages 3 to 4) and 48% (ages 14 to 17) between 1998 and 2001. Estimates from the U.S. Census for the year 2005 indicate that by 2023, approximately 73 million young people under age 18 will have reached or passed the legal age for gambling.

Second, this same time period will mark the beginning of the passage of the now famous “baby boomer” generation into the largest senior citizen class in history (approximately 73 million as of 2005). This generation has contributed to and been observers of the widespread expansion and acceptability of legalized gambling. Many people of this generation have in fact voted on issues relating to the expansion of gambling, such as whether to introduce a casino. Many of these soon-to-be senior citizens are current users of the Internet and this number may be expected to increase. According to at least one survey (U.S. Department of Commerce, 2004), the percentage of Internet users age 50 or older has increased from 11.2% (1997) to 37.1% (2001), while the percentage among those aged 25 to 49 has increased from 27.1% to 69.9% during the same time period. These results raise the specter that, unlike seniors today, who are less likely to be involved with the Internet, this new generation of seniors may be vulnerable to the lure of Internet gambling for the many reasons currently offered to explain the susceptibility of seniors to the onset of disordered gambling (Wiebe, 2002). One recent survey that reported on Internet gambling (Ialomiteanu & Adlaf, 2001) found that the highest proportion of new Internet users were those in the 65-year-or-older category.

An increase in the incidence of gambling-related disorders among these two disparate generations might emerge if expected technological advances in such areas as computer graphics, interactive methodologies (both audio and visual), and simulation techniques (Griffiths, 2003) succeed in narrowing the gap between the popularity of computer and video gaming and the development of a similar attractiveness for Internet gambling (Griffiths, Davies, & Chappell, 2003). The use of computer and video games is a function of both age and gender (Roberts, Foehr, & Rideout, 2005). A greater percentage of younger children (aged 8 to 10) spend more time playing computer and video games than do those aged 11 to 14, who spend more time playing than do those aged 15 to 18. Males are much more likely to spend time playing these games than are females. This phenomenon mirrors the higher male-to-female ratio of those who meet the criteria for disordered gambling (Welte et al., 2002). Imagine a scenario in which a senior or young person logs on to an Internet gambling website. It is possible to envision a scene in which the individual who has logged on chooses to play a game of Texas Hold “em with four other players. The improvements in technology could permit the gambler to select four of their favorite people, for example, celebrities or historical

figures, as their opponents. These technological advances could make gambling on the Internet a much more attractive proposition than it has been to date.

To the extent that technological advances applied to Internet gambling close any remaining gap between computer gaming and Internet gambling, individuals among these populations who are susceptible to the onset of disordered gambling may find themselves vulnerable to attractive web-based environments. There is every reason to assume that technological breakthroughs will eventually produce an environment that is barely distinguishable from the real environment. The result may be a future generation of young gamblers and an older generation of gamblers (who were more recently introduced to powerful and fast personal computers for use at home and work) who log on and are put at increased risk for disordered gambling. Add in the possibility that fellow players can be simulated to represent the icons of choice, for example, celebrities, and the risk is likely to be enhanced even further.

These two examples provide but one definition of the window of opportunity for researchers to develop measures of disordered gambling that are valid, useful, and informative to policy makers and to get these measures included in the public health surveillance system. The question of which indicators are most likely to discriminate the pathological or disordered gambler from the non-disordered gambler is only now beginning to be addressed (e.g., Gambino, 2006a; Gambino & Lesieur, 2006; Smith & Wynne, 2002; Stinchfield, 2002, 2003; Stinchfield, Govoni, & Frisch, 2004).

Once developed and in place, these indicators will permit the rapid assessment of national, regional, and local (state, province) estimates and the ability to evaluate changes in these estimates on the basis of time, place, and person. National estimates should be obtained from the bottom up (i.e., pooling across states and provinces). This will permit any national estimate to more accurately reflect the distribution of the risk factors or determinants that remain to be specified in the kind of detail that is useful to policy makers (Messerlian et al., 2005; Shaffer, LaPlante, et al., 2004; Welte et al., 2002, 2004).

More important, reliance on the collection of data at the state and provincial level will be more informative, timely, and relevant to epidemiologic analysis than would the occasional national survey. The states and provinces would be better able to deal with the unique aspects of their own policy needs in terms of the strength of the gambling environment (Shaffer, LaBrie, & LaPlante, 2004) that currently exists in each state and province. The gambling environment includes, among other characteristics, the types of gambling approved, the population strata among which specific games are popular and gambling policies that exist or might be introduced. It should also be recognized, at least in the U.S. that these arguments apply to every state and province. For example, does anyone doubt the existence of

disordered gamblers in Utah and Hawaii, where gambling is illegal? Utah, for example, borders on Nevada, which is considered by many to be the gambling Mecca of the United States, and where 75% of the citizens of Utah find gambling an acceptable alternative (Davidson, 2005). Hawaii is composed of a number of populations whose cultures reflect highly positive attitudes toward gambling (Associated Press, 2006).

The structure of public health surveillance

One of the goals of surveillance systems is to create the capacity to analyze data in such a way that the results of analysis can serve to signal the need for a rapid response to an emerging public health threat (McQueen, 1999). McQueen has argued further that the importance of socio-behavioral risk factors and social determinants of those disorders that account for *most* of the estimated morbidity and mortality is the driving force behind the need for surveillance programs. The recent demonstration of the importance of mental disorders in defining the magnitude of the public health burden of disease and disability supports the need for the inclusion of mental disorders in public health surveillance (Herrman, Saxena, & Moodie, 2004; Neugebauer, 1999; Ustun, 1999; World Health Organization, 2004).

The design and implementation of a surveillance system on gambling requires consideration of several challenges and issues (McQueen, 1999). The first is the theoretical or empirical basis about which questions to ask and include. This basis will be determined, in part, by the perceived importance of the questions and the interpretation of current evidence by putative experts. This is itself a significant challenge to face (Blaszczynski, Ladouceur, & Shaffer, 2004). Shaffer, Hall, and Vander Bilt (1997) have stressed the need to strengthen the theoretical and empirical foundation for understanding and studying gambling (Grant & Potenza, 2004b; National Research Council, 1999). Researchers can make a strong contribution to the debate over which measures will most likely provide the needed information.

The second issue concerns methodology. McQueen (1999) states, “the primary methodological issue is how to build a monitoring system that collects data continuously, producing a seamless flow of data that can detect subtle and long-term changes in the variables of interest at the population level. … [there should be a] focus on the method to provide long-term trend data” (p. 1312). The third issue identified by McQueen is how to use the system. The key problems to be addressed are “timeliness” and “provision of evidence” (McQueen, p. 1312). “In this age of computer-assisted telephone interviewing, rapid polling, and high-speed technology, the slowness of results in health-related surveillance is difficult to justify” (McQueen, p. 1313).

A detailed description of the structure of surveillance systems is beyond the scope of this paper. The interested reader is referred to excellent chapters by Buehler (1998) and Thacker and Stroup (1998), as well as detailed presentations by the CDC (2001, 2004). In the final analysis, the worth of any surveillance system will be determined by its usefulness (Teutsch, 1994). The establishment of a useful surveillance system requires at a minimum attention to six elements (Thacker & Stroup, 1998). These elements are, in brief, as follows: 1) establish goals, 2) develop case definitions, 3) select appropriate personnel, 4) acquire the tools and clearances for collection, analysis, and dissemination, 5) implement the surveillance system, and 6) evaluate the results of surveillance activities (Thacker & Stroup, pp. 118-122). It is time for the research community interested in gambling to begin to focus on these issues.

Discussion

If researchers and policy makers are committed to a rational strategy for effecting beneficial change, then they need to agree that there should be a straightforward relationship between evidence obtained by scientific research and the creation and amendment of health policy (Rothman & Greenland, 1998). Similar to the way in which scientific knowledge increases in other fields, knowledge of disordered gambling is cumulative and progressive in nature as new findings are added to the substantive knowledge base (Grant & Potenza, 2004b). Health policy, including that related to gambling problems, would be expected to reflect this new knowledge, and those who advocate this strategy may expect major benefits to accrue to those who are the focus of health policy implementation (Levine & Lilienfeld, 1987).

The ultimate test of policy toward disordered gambling will be the measurable impact of an intervention on the incidence and severity of disordered gambling. Evidence obtained from surveillance programs can and should be important contributors to the decision-making process on the creation and amendment of public policy. Surveillance data are useful for the evaluation of the effectiveness of prevention and control initiatives. These data also provide a relatively rapid assessment of the impact of regulations or laws, modified or initiated to address public health concerns, and rapidly assess changes in the availability and accessibility of gambling (e.g., Poulin, 2006), such as an introduction of new gambling initiatives, or a sudden increase in Internet gambling as the result of enhancements in computer technology that make this form of gambling more attractive. The likelihood that researchers will find a strong association between any increase in Internet gambling and an increase in the incidence of disordered gambling is unclear at present; more research is clearly needed.

If it is agreed that the surveillance of gambling is a priority based on the

accumulation of evidence on the relationship between gambling and measures of morbidity and mortality, then the following proposal is recommended. Once a set of indicators has been identified for inclusion in the behavioral risk factor surveillance systems currently in place in the United States and Canada[2], half the states and provinces include these indicators in the first year of the program and the remaining states and provinces in the second year. This recommendation is based on the recognition that both the states and the provinces have a diverse set of priorities such that the inclusion of gambling questions precludes additional questions of interest given the length of these surveys. These states and provinces would then alternate between inclusion and exclusion over the agreed course of the time table. Analyses of the results would be disseminated to all the respective parties for interpretation and comment. The application of sequential rule analysis (Sonesson & Bock, 2003) might be used with an emphasis on minimizing false alarm rates (Baron, 2003) to enhance early detection of a potential outbreak and to determine whether to continue or end the surveillance program.

The use of the term *outbreak* requires comment because it is unusual to apply this label to a behavioral disorder. The CDC recently sent investigators into the state of West Virginia at the request of state authorities to investigate an “outbreak of obesity” (Kolata, 2005). This investigation represents a first for the CDC but provides a potential precedent for examining a similar possibility in the incidence of new cases of disordered gambling, perhaps as a result of future Internet gambling activity.

We need to keep in mind that both proponents and opponents of the expansion of legalized gambling are agreed on a commitment to the development of policy that will mitigate any negative impacts of socially accepted legalized gambling. How many is not as important as how, where, and with whom to intervene. Decisions of this importance require a much greater degree of confidence than can be inspired by the evidence to date.

It is of value to propose a paraphrase of the Oregon state law, which requires the lottery to maximize revenues commensurate with the public good (Lyons, 1998) as a beginning statement for policy makers to consider: Promote those policies designed to maximize the economic and social benefits of legalized gambling while minimizing any economic and social costs. This is not a simple task: Maximizing benefits is not independent of minimizing costs. What remains to be specified by researchers and other stakeholders are practical and valid definitions of benefits and costs, and how to balance these considerations (Collins & Lapsley, 2003; McGowan, 1999; Walker, 2003; Walker & Barnett, 1999). This will not be an easy task, but the benefits of success in such an endeavor will be great.

The views expressed here are for the purpose of stimulating further discussion on

the merits of introducing indicators of gambling and disordered gambling into current surveillance systems. This issue is a complex one, especially in view of the likelihood that surveillance format length would minimize the number of gambling indicators that would be included. The challenge to researchers who propose questions for inclusion is intensified by what may appear to be a clash between an emphasis on measures of disordered gambling (as presented here) and those implicit in a public health perspective. The latter paradigm includes the benefits side of the gambling equation, whereas the former stresses the costs or negative outcome side (I must give credit to the reviewer and editor for calling this important distinction to my attention). There is no easy answer to this challenge, which is why it is critical for those researchers with an interest in any advantages that may stem from including indicators of gambling in current surveillance programs to offer their views in response to the arguments presented here (Promios et al., 1998; Shaffer & Gambino, 2004).

Of particular value would be comments that address specific issues relating to the promotion of such a system. I offer a brief, but not exhaustive, list that may be of interest. This list includes which measures would be of greatest utility (e.g., Stinchfield et al., 2004); a discussion on the justification of disordered gambling as a public health priority (Korn et al., 2003; Poulin, 2006); the viability of prevention (e.g., Derevensky et al., 2004) and treatment programs (e.g., Ladouceur et al., 2002); the relationship between disordered gambling and measures of morbidity and mortality (e.g., Grant & Potenza, 2004b); and a comparison of measures of benefits versus measures of morbidity, particularly by taking into account the continuum of disordered gambling, such as including two (Gambino & Lesieur, 2006; SOGS) or three levels (McCready & Adlaf, 2006; CPGI) of severity. These and other questions need to be resolved before there is a majority acceptance among researchers with an interest in promoting the inclusion of gambling in current surveillance systems.

Finally, I would paraphrase John Dewey “that the only distinctions worth drawing are not between” (1981, pp. 268-269) pro-gambling and anti-gambling, or between benefits and costs, but between those policy recommendations that are not beneficial and those that are beneficial and result in an improvement in the public health[3].

Notes

[fn1]1 LaBrie et al., 2008; LaBrie et al., 2007; LaPlante et al., 2009; LaPlante et al., 2008a; LaPlante et al., 2008b; Shaffer et al., in press; Xuan & Shaffer, in press.

[fn2]2 It is unclear whether Canada has implemented a surveillance system similar to the Behavioral Risk Factor Surveillance System (BRFSS). CDC has offered the

technology to other countries, including Canada.

[fn3]3 The actual quote that is paraphrased is: “But if modern tendencies are justified in putting art and creation first, then the implications of this position should be avowed and carried through. It would then be seen that *science is an art*, that *art is a practice*, and that the only distinction worth drawing is not between practice and theory, but between those modes of practice that are not intelligent, not inherently and immediately enjoyable, and those which are full of enjoyed meanings” (Dewey, 1981; p. 268-69).

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