

## Prevention of problem gambling in Chinese adolescents: Relevance of problem gambling assessment and positive youth development frameworks

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**Abstract:** Although research findings show that adolescent gambling behavior is a growing problem, there are not many theory-driven prevention programs in the Chinese context. In this paper, two approaches of developing Chinese adolescent prevention program are described. In the first approach, it is argued that related programs should be developed with reference to the risk factors of problem gambling based on problem gambling assessment tools and frameworks. The modified Chinese G-MAP is used as an example to illustrate this approach. In the second approach, it is argued that programs incorporating positive youth development constructs would help adolescents develop positive qualities which would prevent them from developing problem gambling. The Project P.A.T.H.S. is given as an example. The issues related to the application of positive youth development constructs to adolescent problem gambling prevention are discussed.

**Keywords:** Gambling problems, adolescents, positive youth development, intervention programs, G-MAP

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### INTRODUCTION

A survey of the Western literature showed that adolescent gambling behavior is a growing problem. Shaffer and Hall (1) reported that 10% to 14% of the young respondents were at-risk for problem gambling. Griffiths and Wood (2) revealed that high levels of adolescent gambling were found in Europe, USA, Canada and Australia. Gupta and Derevensky (3) showed that 63% of underage adolescents in Grade 7 to Grade 12 were found gambling; out of the total population, 2.7% were found to be probable pathological

gamblers, 6.6% were gamblers at-risk, and 54% were social gamblers. Dickson, Derevensky and Gupta (4) reported that 4% to 8% of the adolescents were problem gamblers, which was as high as two to four times that of the adult population. Hardoon, Gupta and Derevensky (5) suggested that 4.9% of the respondents were pathological gamblers, whereas 8.0% of them were at-risk. In Hong Kong, very few studies have examined problem gambling in adolescents. The Chinese Young Men's Christian Association of Hong Kong (6) found that 3.5% of the young respondents were

pathological gamblers and 0.8% of them were probable pathological gamblers. Although the reported prevalence rates of problem gambling in adolescents among different countries and/or cities may not be directly comparable because of different operational definitions of problem gambling, these figures do give us some idea about the seriousness of the problems in adolescents. All governments should therefore find means to tackle the problem.

This paper attempts to examine the issue of how adolescent problem gambling programs could possibly be developed. The first approach that we can adopt is to examine the risk factors associated with adolescent problem gambling and to develop prevention programs attempting to reduce the influence of the risk factors. Within this context, prevention programs based on gambling assessment tools, such as the Maroonah Assessment Profile for Problem Gambling (G-MAP), will help to develop the related programs and to identify adolescent problem gamblers. The second approach we can consider is to make use of the positive youth development (PYD) approach to develop PYD programs by applying PYD constructs. The basic logic of this approach is that with the strengthening of adolescent development, adolescent development problems would be reduced.

#### **PREVENTION OF PROBLEM GAMBLING**

In view of the growing problem gambling in adolescents, one obvious question is how problem gambling in adolescents can be prevented (7,8). From the prevention science perspective, there are two approaches dominating the development of preventive strategies. The first approach adopts the "traditional" conception (9), which includes three levels of dealing with

the problem: 1) primary prevention (elimination of the occurrence of problems), 2) secondary prevention (early identification of high-risk groups and early intervention), and 3) tertiary prevention (prevention of further deterioration of the problem). The second approach adopts the "changing" conception (10), which includes three target groups: 1) universal prevention (targeting all adolescents regardless of their risk status), 2) selective prevention (targeting adolescents who have above-average risk of behaviors but no indication that their participation in risky behaviors is a problem), and 3) indicated prevention (targeting adolescents with noticeable signs and markers of a behavioral problem even they are not diagnosable). The focus on primary prevention and universal prevention initiatives have been commonly used to prevent adolescents' risky behaviors such as substance abuse.

It is noteworthy that prevention programs regarding problem gambling are underdeveloped. As pointed out by Dickson, Derevensky, and Gupta (4),

*"despite increased awareness of the need to begin educating young children about the potential dangers of gambling, empirical knowledge of the prevention of adolescent gambling and its translation into science-based prevention initiatives is scarce"* (p. 97), and the authors argued that *"the field of prevention of youth gambling problems can draw upon the substantial research on adolescent alcohol and substance abuse prevention which has a rich history of research, program development and implementation, and evaluation"* (p. 99).

Currently, a majority of intervention programs are developed by applying the

risk-factor concept. For example, the common strategy used in adolescents' substance abuse prevention programs is to identify the risk and protective factors in substance abusers. The purposes are to minimize the risk factors and to maximize the protective factors in young people (2,11). This strategy being used in problem gambling prevention is critical because it helps identify the risk factors involved in problem gambling and reduce them while strengthening the protective factors at the same time.

Gupta and Derevensky (12) have done an excellent job in summarizing some of the major risk factors for young people with serious gambling problems. The risk factors are listed below:

1. problem gambling is more popular among males;
2. risk-takers have greater risk for problem gambling;
3. prevalence rates of adolescents' problem gambling are 2 to 4 times those of adults;
4. problem gamblers have relatively lower self-esteem;
5. problem gamblers have higher rates of depression;
6. dissociation during gambling frequently occurs in problem gambling;
7. high risk of suicidal ideation and suicidal attempts exist in problem gamblers;
8. loss of quality friendship and relationship are common in problem gamblers; and problem gamblers have more gambling associates than do non-problem gamblers;
9. problem gamblers have increased risk for multiple addictions;
10. problem gamblers have higher excitability than the non-problem gamblers;
11. problem gamblers have poorer general coping skills; and
12. relative to non-problem gamblers, problem gamblers display increased delinquency and crime.

#### **RELEVANCE OF PROBLEM GAMBLING ASSESSMENT**

It is argued that understanding of the risk factors involved in adolescent problem gambling would help to develop adolescent problem gambling prevention programs. A survey of the literature showed that researchers have developed different assessment tools to identify risk factors in problem gambling. The G-MAP developed by Loughnan, Pierce, and Sagris-Desmond (13) is one of such examples. According to the G-MAP, the common risk factors identified in problem gambling are as follows:

- Problematic beliefs about winning (i.e., faulty cognitive problems): faulty belief in the efficacy of one's cognitive system (control factor), use of intuition and ideas about luck to achieve successful outcomes (prophecy factor), and belief that gambling is a reasonable way to make money (uninformed factor).
- Emotional and coping problems: use of gambling to lift their mood (good feelings factor), use of gambling to control stress (relaxation factor), use of gambling to alleviate boredom (boredom factor), and dissociation as well as disconnection from emotional responses when engaging in gambling (numbness).
- Problem situations: using gambling behavior as an "escape" from the perceived demands in life (oasis), and gambling as a result of the dire to be "naughty" or rebellious (mischievous factor).
- Attitudes to self (cognitive/psychological problem): belief that others see them as 'losers' and wish that gambling can help

them to be ‘winners’ (low self-image factor), gambling as a result of the desire to maintain self-image of being a ‘winner’ (winner factor), belief that gambling is a disease or affliction that can only be solved by life-long abstinence (entrenchment), and conscious use of gambling to punish or hurt oneself (harm to self factor).

- Social problem: social factors that may contribute to gambling (systems factor) and use of gambling to satisfy the desire to be around people but minimize the pressure to interact with them (shyness factor).

To help to assess and develop intervention programs in the Chinese context, Shek, Chan, and Tung (14) translated and validated the G-MAP in Hong Kong. As the G-MAP developed in the West may not be suitable for people in Asian countries due to cultural differences, Shek et al (15) developed the modified Chinese version of the G-MAP (Chinese G-MAP) for the assessment of problem gambling. The modified Chinese G-MAP has 10 domains and 23 scales resembling 8 groups of factors related to pathological gambling. Detailed information of the Chinese version G-MAP is provided in the following section.

#### **1. Beliefs about winning domain (cognitive problems)**

- Control: belief in the efficacy of one’s system in winning money.
- Prophecy: use of intuition and ideas about luck to achieve successful outcomes

#### **2. Feelings domain (emotional problems)**

- Boredom: use of gambling to alleviate boredom
- Good Feelings: use of gambling to lift one’s mood
- Numbness: dissociation and disconnection from emotional responses

when engaging in gambling

- Relaxation: use of gambling to cope with stress

#### **3. Situations domain (life situations related to pathological gambling)**

- Desperation: gambling as a result of desperation
- Rebellion: gambling as a result of the desire to be rebellious
- Oasis: use of gambling to reward oneself
- Transition: relation between gambling and transitional events in lives

#### **4. Attitudes to self domain (self-concept and psychological problem)**

- Low Self-Image: belief that one as a ‘loser’ and wish that gambling can help one to be a ‘winner’
- Winner: gambling as a result of the desire to maintain self-image of being a ‘winner’
- Low Self-Efficacy: belief that one is capable to control his/her gambling behavior

#### **5. Social Domain (Social Influences)**

- Friendship: use of gambling to increase social encounter
- Shyness: use of gambling to satisfy the desire to be around by people but minimize the pressure to interact with them

#### **6. Behavior domain (behavioral influences)**

- Habit: gambling in familiar environment or with familiar people
- Leisure: gambling as a hobby or an interest

#### **7. Spirituality domain (spiritual influences)**

- Lack of Life Goal: belief that gambling and winning money are meaningful in one’s life
- Self-Worth: gambling as a way to search for one’s value

#### **8. Family domain (family influences)**

- Reinforcements: gambling for the sake of

- one's family
- Escape: gambling as a way to escape from family problems
- 9. Attitudes to financial management domain (attitudinal influences)**
- Attitudes to Financial Management: gambling as a way to deal with one's debts
- 10. Culture domain (cultural influences)**
- Chinese Beliefs about Gambling: beliefs in the Chinese proverbs about gambling

Shek et al (15) showed that the Chinese G-MAP is valid and reliable. Obviously, the G-MAP dimensions can be used to develop adolescent prevention programs in the Chinese culture. For example, it would be helpful to train adolescents to deal with Chinese beliefs about gambling. Furthermore, the modified Chinese G-MAP can be used to identify Chinese adolescent problem gamblers who may need early intervention.

#### **ALTERNATIVE COMPLEMENTARY APPROACH: POSITIVE YOUTH**

Although the prevention science approach focusing on risk and protective factors of high-risk adolescent behaviors generated much research finding and produced many prevention programs in the past few decades, this approach has been criticized as taking a negative view about adolescent development. Based on the belief that adolescents are assets to be developed rather than problems to be solved, an alternative approach to tackle adolescent gambling problem is in order.

Some researchers (16) look upon the PYD to accomplish this goal. Damon (17) stated that the field of PYD focuses on adolescents' talents, strengths, interests, and future potentials. This focus is in sharp contrast to the prevention science approach's focus on adolescents' personal disadvantages, disabilities and behavioral

problems, such as learning disabilities and substance abuse. Many researchers and intervention program developers believe that the effort on identifying and promoting young people's talents and strengths will raise their self-esteem, self-image, and life goals. As a result, the use of PYD constructs should be used to promote development of adolescents.

There are many PYD programs in the West. Catalano, Berglund, Ryan, Lonczak, and Hawkins (18,19), based on their revision of 77 PYD programs, concluded that there are 25 successful programs involving 15 identified PYD constructs. From a prevention of problem gambling's point of view, these 15 constructs are useful in developing adolescent problem gambling prevention programs. The meaning of these PYD constructs and the rationales for including them in problem gambling prevention programs are explained below.

*1) Promotion of bonding:* Promotion of bonding means to develop strong affective relationship with and commitment to people (healthy adults and positive peers) and institutions (school, community and culture). It is believed that strong linkages with healthy adults and significant others are important to prevent problem gambling in adolescents. Researchers found that many adolescent gamblers are negatively impacted by the following situations: a) many parents and friends of adolescent gamblers are gamblers; b) perceived family support in adolescent problem gamblers is poor (5), and c) quality friendships and relationships are lost and replaced by gambling associates among problem gamblers (12). According to family theories, adolescents' developmental problems are regarded as outcomes of their problematic family processes. In a longitudinal study examining the linkage between parental behavioral and psychological control and

adolescents' adjustment, Shek (20-22) showed that parental psychological and behavioral control are related to the children's psychological well-being (such as life satisfaction, mastery, life satisfaction and hopelessness). This construct is intimately linked to adolescents' gambling behavior.

2) *Promotion of social competence:* Social competence refers to interpersonal skills (such as communication, assertiveness, conflict resolution, and interpersonal negotiation), the ability to build up positive human relationships, and the provision of opportunities to practice such skills. There are several rationales to develop social competence as a means to prevent problem gambling: a) the social competence in adolescent gamblers is poor (e.g., outcomes of the G-MAP assessment), b) many friends and peers in adolescents with gambling problem are gamblers, and c) there is a poorly perceived peer support among adolescent problem gamblers (5).

3) *Promotion of emotional competence:* Emotional competence includes awareness of one's own emotions, ability to understand others' emotions, ability to use the vocabulary of emotion, capacity for empathy, ability to differentiate internal subjective emotional-experience from external emotional-expression, capacity to control emotional distress, awareness of emotional messages within relationships, and capacity for emotional management. The justifications for including this PYD construct is that there are greater emotional problems (such as depression and suicidal ideation) in adolescent gamblers (3) and emotional problems in problem gamblers.

4) *Promotion of cognitive competence:* Cognitive competence includes cognitive abilities, processes or outcomes (such as logical thinking, problem-solving, and goal setting), and critical thinking (such as

making inferences, self-reflection, and coordination of multiple views). The cultivation of cognitive competence as a preventive strategy is important because researchers have found that there are illusions of control and unrealistic perceptions of luck in adolescent problem gamblers (23). The control factor (belief in the efficacy of their system), the prophecy factor (use of intuition and ideas about luck to achieve successful outcomes), and the uninformed factor (belief that gambling is a reasonable way to make money) in the G-MAP also suggest that cognitive dysfunction is a source of concern in problem gamblers. According to cognitive theories of problem gambling, cognitive dysfunction and irrational thoughts about problem gambling are the basic factors conducive to problem gambling.

5) *Promotion of behavioral competence:* This PYD construct includes the ability to use nonverbal and verbal strategies to perform socially acceptable and normative behavior in social interactions and to make effective behavior choices. The basic justification for including this construct in the prevention toolbox is that peer pressure plays an important role in adolescent problem gambling (24). A significant proportion of adolescent gambling activities take place in friends' homes. How to help adolescents resist negative peer influence has become a central focus in many of the current programs on the prevention of adolescents' high risk behaviors.

6) *Promotion of moral competence:* Moral competence refers to the orientation to perform altruistic behavior, ability to judge moral issues, as well as to promote the development of justice and altruistic behaviors in adolescents. It is argued that the promotion of this PYD construct is important because problem gamblers are unable to judge the negative consequences

of pathological gambling. Adolescent problem gamblers have weak moral constraint as reflected by the findings that they usually have a history of delinquency such as stealing money to fund their gambling (2).

7) *Development of self-efficacy*: Self-efficacy refers to beliefs in one's ability to organize and execute the courses of action required to produce given attainments as well as techniques to change negative self-defeating cognitions to positive ones. There are two reasons to support the inclusion of this PYD construct in problem gambling prevention programs. First, problem gamblers may either have very low self-efficacy (so that they wish to attain control via gambling) or over-estimate their ability to control the outcomes of gambling. Second, as increasing research evidence shows that self-efficacy is negatively related to substance abuse, it is argued that development of self-efficacy will reduce the likelihood of problem gambling.

8) *Fostering prosocial norms*: Prosocial norms are clear and healthy standards, beliefs, and behavior guidelines which promote socially desirable behavior. Prosocial norms often include altruism, solidarity, and volunteerism leading to prosocial behaviors, such as cooperation and sharing. As pointed out by Hardoon, Gupta, and Derevensky (5), adolescent gambling is closely related to delinquency and conduct problems. Because prosocial norms and behaviors can be viewed as incompatible with aggressive or deviant behaviors, it is expected that the promotion of prosocial behaviors, i.e., the PYD construct, will be conducive to the reduction of high-risk behaviors.

9) *Cultivation of resilience*: Resilience can be conceived as a capacity (the ability of an individual for adapting to changes in a healthy way), a process (a reintegration

process for an individual to recover) or a result (positive outcomes after going through stressful events). Cultivation of resilience means fostering adolescents' capacity against unconstructive developmental changes and life stresses in order to 'bounce back' from stressful life experience and achieve healthy outcomes. The inclusion of resilience as a PYD construct is important for two reasons. First, research studies have showed that coping behaviors in adolescent gamblers are poor (3) and that problem gambling may occur after negative life events (G-MAP). Second, there are studies showing that resilience is negatively related to adolescent high-risk behaviors.

10) *Cultivation of self-determination*: Self-determination refers to an adolescent's ability to set goals and make choices according to his/her own thinking. Regarding skills and strategies which promote self-determination, they include self-awareness of strengths and limitations, goal setting and action planning, problem solving, choice-making, and self-evaluation. There are two justifications for promoting self-determination as a strategy to prevent problem gambling. First, problem gambling represents poor choice-making in adolescent behaviors. Second, as impulsivity is involved in adolescent problem gamblers, cultivation of self-determination is important (24).

11) *Cultivation of spirituality*: Cultivation of spirituality refers to promotion of the development of beliefs in a higher power or a sense of spiritual identity, meaning or practice. Two arguments support the use of this PYD construct in the prevention of adolescent problem gambling. First, there are research findings showing that purpose in life is negatively related to adolescents' high-risk behavior and psychological well-being (25). Second, according to the existential theory of Victor Frankl, psycho-

pathological behavior, such as problem gambling, is a result of existential vacuum that is created by a lack of meaning in an individual.

*12) Promotion of beliefs in the future:* Beliefs in the future refers to hope and optimism, including valued and attainable goals, positive appraisal of one's capability and effort (a sense of confidence), and positive expectancies of the future. As problem gamblers have heightened risk for suicidal ideation and attempts (4), it is assumed that such negative views about the future are antecedents of problem gambling, promotion of beliefs in the future will reduce the likelihood of problem gambling.

*13) Development of clear and positive identity:* This PYD construct refers to the building of self-esteem and facilitation of exploration and commitments in self-definition. As many studies have shown that the self-esteem of adolescent problem gamblers is lower than that of the control participants (4), it can be argued that promotion of self-esteem in adolescents will prevent the development of problem gambling in adolescents.

*14) Opportunity for prosocial involvement:* This PYD construct refers to events and activities that promote adolescents' participation in prosocial behaviors and maintenance of prosocial norms. As prosocial involvement is negatively related to delinquency and psychological problems (26,27), it can be argued that providing opportunities for prosocial involvement would prevent the development of problem gambling.

*15) Recognition for positive behavior:* This construct refers to the development of systems for rewarding or recognizing participants' positive behaviors such as prosocial behaviors or positive changes in behaviors. This PYD construct is important

because adolescent problem gamblers may attempt to derive achievement from excessive gambling and many adolescent problem behaviors occur as a result of the lack of proper recognition for their positive behaviors.

#### **POSITIVE YOUTH DEVELOPMENT PROGRAMS IN HONG KONG**

The development of positive youth development programs is at its infancy in Hong Kong. In order to promote a holistic development among adolescents in Hong Kong, The Hong Kong Jockey Club Charities Trust has approved HK\$400 million (note: the official exchange rate between US\$ and HK\$ is 1:7.8) to launch a project entitled "P.A.T.H.S. to Adulthood : A Jockey Club Youth Enhancement Scheme". The word "P.A.T.H.S." denotes Positive Adolescent Training through Holistic Social Programmes. The Trust invited academics of five universities in Hong Kong to form a Research Team to develop a multi-year universal PYD program to promote holistic adolescent development in Hong Kong, with Shek as the Principal Investigator. Besides developing the program, the Research Team also provides training for the teachers and social workers who implement the program, and carries out longitudinal evaluation of the project. There are two tiers of programs (Tier 1 and Tier 2 Programs) in this project. The Tier 1 Program is a universal PYD program in which students in Secondary 1 to Secondary 3 will participate, normally with 20 hours of training in the school year at each grade. Because research findings suggest that roughly one-fifth of adolescents will need help of a deeper nature, a Tier 2 Program will generally be provided for at least one-fifth of the students who have



greater psychosocial needs at each grade (i.e., selective program).

The overall objective of the Tier 1 Program is to promote holistic development among junior secondary school students in Hong Kong. To achieve this objective, program elements related to PYD constructs are included in the Tier 1 Program (28). These elements include: promotion of bonding, cultivation of resilience, promotion of social competence, promotion of emotional competence, promotion of cognitive competence, promotion of behavioral competence, promotion of moral competence, cultivation of self-determination, promotion of spirituality, development of self-efficacy, development of a clear and positive identity, promotion of beliefs in the future, provision of recognition for positive behavior, provision of opportunities for prosocial involvement, and fostering prosocial norms (28,29). Both Chinese and English curriculum manuals have been produced with reference to all PYD constructs except the recognition for positive behavior. For the recognition for positive behavior, it is argued that this element should be implemented as a regular principle inside and outside classrooms. As such, no specific curricula are needed.

For the evaluation of the program, objective outcome evaluation, subjective outcome evaluation, secondary data analyses, process evaluation, interim evaluation, qualitative evaluation based on focus groups, student weekly diaries and case studies have been used. Based on these strategies, existing research findings generally revealed that different stakeholders have positive perceptions of the program, workers, as well as benefits the program, and that the program is effective in promoting holistic PYD among Chinese adolescents in Hong Kong (28-33).

## DISCUSSION

Although the utilization of PYD programs represents a reasonable approach to prevent adolescent problem gambling, several issues should be considered for developing adolescent prevention programs in Hong Kong.

First, it is important to examine the goal(s) of problem gambling prevention programs. Basically, there are two possible goals of such prevention programs: abstinence of gambling vs. harm minimization or harm reduction of problem gambling (7,8). With specific reference to the Chinese culture of Hong Kong, parents basically do not tolerate gambling in adolescents. As such, abstinence of gambling is regarded as the legitimate objective of gambling prevention programs. This goal is clearly exemplified by the anti-gambling program initiated by the Hong Kong Education City. On the other hand, gambling prevention programs in the West are commonly designed within the context of harm reduction or minimization.

The second issue is whether specific gambling prevention programs or generic PYD programs should be designed. While the former has the advantage of having specific focus on problem gambling as well as spending fewer manpower and financial resources, the stigmatizing effect of such programs should not be underestimated. For example, for schools admitting 'better' students, most schools tend to deny any gambling problems among their students. These schools will not join such prevention programs as a defense mechanism. On the other hand, as 'generic' PYD programs targeting the total youth population are non-stigmatizing in nature, school administrators, teachers, and parents will accept the prevention programs more readily. Nevertheless, the basic question that should be asked is whether the PYD program should

be a panacea to all adolescents with high-risk behaviors.

Third, while it is reasonable to propose that researchers can apply the elements and principles of substance abuse prevention programs to problem gambling prevention programs, one query that should be raised is whether there are any meaningful similarities between substance abuse prevention programs and problem gambling prevention programs. Basically, one has to identify the lowest common multiples of both types of prevention programs. Although many common risk factors are involved in substance abuse and problem gambling (e.g., sensation seeking and higher predisposition in males), there are some differences involved. For example, as parents generally do not tolerate problem gambling behavior in adolescents, their tolerance for substance abuses in their children is even less.

Fourth, to ensure that problem gambling prevention programs are effective, one should ask what theoretical mechanisms are intrinsic to those programs that can contribute to the effectiveness of the programs (34). It is noted that the theory of reasoned action, self-concept theories, and cognitive theories have been applied to many existing gambling prevention programs. Haroon and Derevensky (35) also pointed out different theories of gambling behaviors, including personality, cognitive, learning/behavioral, general addiction, and social learning theories of gambling behaviors. With reference to the ecological approach, there can be different personal and environmental risk and protective factors that may contribute to the success of problem gambling prevention programs. Hence, it is important to argue for the use of theoretical mechanisms in problem gambling prevention programs because these theories will serve as the backbone in

designing the prevention programs.

The fifth issue concerns the universality of problem gambling prevention programs. A survey of the literature shows that most of the existing gambling prevention programs are designed in Western countries. If one assumes that knowledge transcends culture and prevention theories are universally applicable, one can simply translate the English version of such programs and apply them in different cultures. Nevertheless, as the meaning of gambling has different meanings under different cultures, there are researchers arguing for the design of indigenous gambling prevention programs utilizing the 'emic' approach rather than the 'etic' approach.

Sixth, although it is conceptually desirable to have problem gambling prevention programs, whether such programs are really effective in reducing problem gambling behavior in adolescents is an empirical question to be considered. As such, evaluation of the effectiveness of the gambling prevention program is an important issue to be addressed. Unfortunately, program evaluation is not a simple and straightforward task and there are many types and approaches of evaluation (36). In his discussion of the major strategies of evaluation, Patton (37) outlined three basic types of evaluation: quantitative evaluation, qualitative evaluation, and utilization-focused evaluation. Ginsberg (38) summarized the major forms of evaluation, including quantitative and qualitative approaches, cost-benefit analyses, satisfaction studies, needs assessment, single-subjects designs, experimental approaches and models, utilization-focused evaluation, empowerment evaluations, fraud and abuse detection, client satisfaction, and journalistic evaluation. Using starting alphabets as the bases of classification,

Patton (37) suggested that there are more than 100 types of evaluation. Because of the complexity of the nature of evaluation and because different paradigms are involved, researchers are confronted with the task of developing appropriate evaluation approaches and strategies in the field of gambling prevention.

Finally, it would be exciting if the key elements of prevention approach and positive youth development approach could be integrated. According to Catalano et al (18), there are several attributes of the prevention science perspective. These include: 1) identification of risk and protective factors; 2) adoption of a developmental perspective; 3) assertion that problem behaviors share many common antecedents; and 4) assertion that risk and protective factors change youth outcomes. On the other hand, several characteristics associated with the positive youth development approach were identified: 1) emphasis on integrated youth development (i.e., focusing on a range of youth developmental possibilities and problems) rather than dealing with a single youth problem; 2) upholding the belief that "problem-free is not fully prepared"; 3) emphasis of person-in-environment perspective; and 4) focus on developmental models on how young people grow, learn and change. In their discussion of the positive youth development approach, Catalano et al. (19) pointed out that the attributes of positive youth development and characteristics of the prevention science approach are compatible and both approaches could be cooperative rather than competitive. As such, it will be theoretically and practically interesting to see how we can design an integrated program for Chinese adolescents based on the dimensions of G-MAP and the PYD constructs intrinsic to the P.A.T.H.S. Project.

In summary, with the growing severity of the problem of adolescent problem gambling, prevention of adolescent problem gambling is an urgent issue that should be addressed by researchers, professional workers, prevention program developers, and policy-makers. It is argued that the utilization of the G-MAP findings as well as the application of PYD constructs is a promising approach for the problem gambling prevention field in the West as well as in Hong Kong.

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