

Chi Chuen Chan · William Wai Lim Li  
Eugene Chung Ip Leung

# Problem Gambling in Hong Kong and Macao

Etiology, Prevalence and Treatment

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*Dedicated to the Memory of  
Professor William Eadington  
University of Nevada at Las Vegas  
and*

*Professor Rowan Greer  
Yale University Divinity School*

# Preface

First of all, I would like to thank my mentor and good friend, Dr. Keis Ohtsuka of Victoria University, for his guidance during my studies as a Ph.D. student. Dr. Ohtsuka's meticulous concerns and care have been a great help in my studies. I also have to thank Professor Blaszczyński of the University of Sydney and Professor Jackson of the University of Melbourne for their inspiring advice during my Ph.D. studies and for my current research in the psychology of gambling. Lastly, I must thank Mr. Louis Lee, JD, who helped in the proofreading and editing of this book.

I hope this book can benefit social workers, psychologists, and counselors in the field of gambling in Hong Kong and Macao.

Chi Chuen Chan  
University of St. Joseph  
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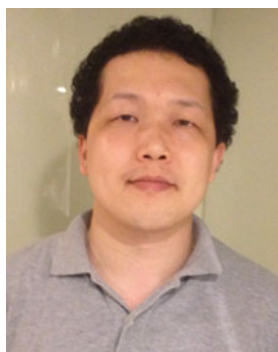
University and was appointed as a Yale Research Fellow in the summer of 1995. His mentor was the late Professor Rowan Greer.

Dr. Chan's current research is in the area of gambling disorders and treatment. Funded by the Mother Mary Social Studies Centre in Macao, Dr. Chan (with his students) has authored two Chinese books in gambling psychology (賭博心理學, *Psychology of Gambling*; 十二步匿名戒賭互助小組工作冊, *A Twelve Steps Self-help Manual for Problem Gamblers*). He has published twenty journal articles and conference proceedings in gambling research. In the last decade, his research team has presented forty papers in international conferences. Dr. Chan's research interests are the personality and the psychological treatment of problem gamblers in Hong Kong and Macao. At present, he is a research fellow with the Mother Mary Social Studies Centre in Macao and the managing editor of the *Asian Journal of Gambling Issues and Public Health*. Professionally, Dr. Chan currently serves as a consulting psychologist with the Union Concordia Medical Group, a major medical services provider in Hong Kong and Macao and as a visiting professor in the University of St. Joseph, Macao.

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**Eugene Chung Ip Leung** obtained his first degree in computer science and statistics from the University of Toronto in 1999 and his second bachelor degree in psychology from the Upper Iowa University in 2012. The current work is his first peer-reviewed study in problem gambling. Eugene is happily married with two young children.

### Also from the First Author

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# Chapter 1

## The History of Gambling in Hong Kong and Macao

### 1.1 History of Gambling in Hong Kong: The Story of the Hong Kong Jockey Club

#### 1.1.1 *Early Development of the Hong Kong Gambling Industry*

Hong Kong became a British colony after Britain and other foreign powers defeated China in the Opium War in 1841. As a British colony, Britain appointed the local governor and introduced a Western-style government. In the early years of the British colony, gambling was popular among the indigenous Chinese. The British government did not ban gambling in the newly acquired colony. At that time, there were neither casinos nor organized gambling establishments.

In 1844, the British governor put forth a number of legislative orders, most of which covered taxation as well as law and order. Among these laws, one entitled “Ban Gambling Regulations” was passed. This legislation imposed a maximum fine of 200 dollars for people who gambled or recruited others to gamble. The gambling ban did not originally aim to prohibit gambling—its main purpose was to increase government revenues from the fines collected. This law laid the foundation for legislation prohibiting public gambling in Hong Kong.

However, increasing tax revenue through prohibiting gambling was not an effective way to reduce gambling among the local Chinese. During the Ching Dynasty, gambling was at the root and foundation of Chinese culture. Gambling, especially among friends and relatives, had long been a tradition in Chinese popular culture. Chinese people loved to play mahjong with friends and relatives during festive seasons (Chan and Ohtsuka 2010). In the early years of British colonization, gambling was especially common among immigrant laborers from Mainland China. Most of these workers were from Canton, a neighboring province in Mainland China. The majority of these workers were illiterate and worked under harsh and unhygienic conditions. For them, gambling was their only pastime and social

leisure activity. Very often, these workers gambled illegally in the small betting houses in the central districts of the new colonial government. The area notorious for illegal gambling was Hollywood Road in the Central district of Hong Kong. They frequently went to these houses once or twice a week in search of the dream of quick riches and fortunes. However, very often, many of these illiterate workers lost all their earnings and found themselves heavily in debt. Unable to pay off their debts, many of these gamblers were sold as slave workers overseas. Some went as far as the USA. The local Chinese named these early victims of problem gambling “piggy workers.”

This increase of illegal gambling can be linked to the ineffectiveness of the British government and to the corruption of police officers at that time. The British government, in the first few years of operation in Hong Kong, had little desire to transform the local political structure into a British model with free elections and a representative government. Instead, the new colonial government intended to keep the basic Chinese social and cultural structures and customs intact. Consequently, the British government never intended to crack down on illegal gambling dens.

Another reason for the rapid increase of gambling is the widespread corruption among police officers in the early years of colonization. Though there were laws that prohibited gambling, there were few genuine attempts to eradicate the problem. Often, corrupt police officers would cooperate with gambling house owners to create dramatic “cracked gambling cases.” In these cases, police officers would bust the gambling houses and arrest a number of gamblers, including the owners of the shop. In fact, these were only shows for the public. The real owner would never be arrested. The locals often referred such operations as a “monkey show,” a sarcastic term for the rampant police corruption at that time. These staged crackdowns of gambling houses often appeared in the headlines of foreign newspapers (Ge 2004).

The severe gambling problems caught the attention of the new Hong Kong governor MacDonnell, who decided to tackle them. In June 17, 1844, the Legislative Council of the Hong Kong Government passed the “Maintain Social Order and Weathered Regulations.” This law gave police the power to grant licenses to operate gambling houses. Tenders were solicited from existing gaming operators. Each application specified the location of the gaming venues. In the early round of selection, 12 bidders were approved, which led to the establishment of twelve gaming houses. Each annual license fee was 10,000 dollars (Cheung 2009).

Governor MacDonnell was the first legislator in Chinese history to raise tax through licensing and legislation. While the laws established the legal status of gambling, this legislative arrangement increased the accessibility, availability, and acceptability of gambling to the general public. Gambling was no longer an illegal activity hidden behind small wooden huts. Instead, middle-class and well-educated individuals began using gambling as a leisure and fun activity, as the establishment of the Hong Kong Jockey Club would later demonstrate. Contemporary gambling researchers such as Blaszczynski and Nower (2002) have argued that early “3 As” (availability, accessibility, and acceptability) are crucial in the pathway development of problem gambling, as children brought up in this environment have a higher likelihood to learn and indulge in gambling activities at an early age. Thus,

licensing the gaming operators encouraged and promoted gambling in the small developing British colony.

One of the most popular games in the early colonial years was Fan-tan, a game still enjoyed by many patrons in the casinos of Macau today. Fan-tan is a chance game similar to lottery. In this game, the banker randomly places buttons into a big bowl and the players have to guess the number of buttons. The numbers are counted in multiples of four. The players choose a number from 1 to 4. If there are 100 buttons, the winning number is 4.

In addition to “Fan-tan,” gambling houses also featured games such as “Sic Bo,” “Pai Gow,” and “Word Flower.” Most of these games were chance games which require relatively little skill to master (Ge 2004). These games were very popular among manual laborers as the games require low literacy levels and few specific skills to play.

Tax revenues from public gambling from July 1, 1867 (Public Order of the rates of gambling) to February 20, 1872 (The Ban Gambling Action) were very impressive. Back in Great Britain, voices against widespread gambling in the developing British colony came mainly from the conservative and religious members of the community. Pastor Charles Warren first raised opposition to this gambling revenue in the British Parliament.

In 1872, Sir Kennedy succeeded Sir MacDonnell as the governor of Hong Kong. During his term, Governor Kennedy was committed to ban gambling. He amended the 1844 Gambling Ordinance. At that time, ingenious businessmen put forward an innovative means of illegal gambling—the development of private clubs (Cheung 2009). Club membership was initially a Western innovation and a new form of social entertainment. Traditional Chinese culture emphasizes clan relationships. Gambling was often shared and enjoyed within one’s social clans. In the early years of colonization, clubs established in Hong Kong were mostly organized and run by foreigners. In these clubs, drinking, gambling, and sex shows (e.g., nude dancing of young women) were common.

During Governor Kennedy’s tenure, local Chinese merchants started to organize their own clubs. Application for the establishment of a club was easy; the procedure only required the signing of several documents with the government authority. In accordance with the rules of a club, only club members were allowed to get in and enjoy the fun activities. But in a Chinese club, there were no similar strict rules. Anybody could go into gamble. Consequently, many small Chinese gambling venues were established and operated under a club name. The common games in these clubs were Mahjong and Tin Kau, a common table game of chance that required little skill to master. Proposing to eliminate illegal gambling, Governor Kennedy amended the Gambling Ordinance in 1876. However, there was little success from his efforts as corruption and illegal gambling were rampant at that time (Cheung 2009).

A mahjong school is a licensed venue in Hong Kong where people over the age of 18 can play mahjong. Since 1871, privately run gambling businesses have been banned in Hong Kong; however, mahjong-hosting venues have been tolerated by the Hong Kong government. After World War II, the government required such

venues to obtain Mahjong/Tin Kau Licenses with the constraint that such businesses must be known, in legal English, as Mahjong Schools—a white lie to get around the ban on privately run gambling businesses. Although being technically “schools,” these Mahjong/Tin Kau Licenses are issued by Television and Entertainment Licensing Authority. At present, there are many licensed mahjong schools in Hong Kong, mostly in densely populated areas such as Mong Kok, Yau Ma Tei, Wan Chai, and Sham Shui Po.

If a player plays mahjong in a mahjong school, he has to pay a portion of his gains if he wins a game set. This is the main source of income of a mahjong school. To attract players, mahjong schools provide free drinks, free food, and sometimes lucky money. In addition to resident umpires, modern mahjong schools also have closed-circuit television installed to deter cheating and theft.

Mahjong game was originated in China. It is commonly played by four players (with some three player variations found in South Korea and Japan). The game is played with a set of 144 tiles based on Chinese characters and symbols, although some regional variations use a different number of tiles. In most variations, each player begins by receiving 13 tiles. In turn, players draw and discard tiles until they complete a winning hand using the 14th drawn tile to form four groups (each with 3 tiles) and a pair. There are standard rules about how a piece is drawn, the use of simples (numbered tiles) and honors (winds and dragons), the kinds of groups, and the order of drawing the tiles. There are many regional variations in the rules, with the most popular version being the Cantonese version. Since it can only be played by four people, it is not an option for the casinos. Mahjong is always the best entertainment during festivals such as Chinese New Year. Very often, young people learn this to play this game from their parents (Ohtsuka and Chan 2010).

Tin Kau (Chinese: 天九; Cantonese: Tin Kau “Heaven and Nine”) is the name of a Chinese gambling game for 4 players played with a set of Chinese dominoes. In the game, “Heaven” is the top-ranked tile of the civilian suit, while “Nine” is the top-ranked tile of the military suit of the domino set. Tin Kau is more like playing bridge with no trump suit and no partner. Four players play against each other. At the start of each game, each player receives 8 tiles from a deck of 32 tiles. There are complex rules to the game play and scoring. The players need to rely on luck and strategies to beat the other players’ tiles. It is a challenging game to learn and master. At present, only a small number of Chinese people understand how to play this game.

At present, the Hong Kong government has strict restrictions on the Mahjong/Tin Kau License in order to control this kind of privately run gambling. There are time and age controls in which no games shall be played except between the hours of noon and following midnight and no person under the age of 18 years shall be permitted to play the game. Further, the owner of the Mahjong school cannot loan money to the patrons to finance their gambling (Office of the Licensing Authority 2014).

In the first few decades of British colonization, organized gambling started when gangsters discovered ingenious means of gathering bets and wagering. One popular game at that time was “Word Flowers.” This game operated much like a modern



lottery. There were 36 numbers or “*Word Flowers* (字花),” each carrying a specific hero story in ancient China. Some of these were war heroes, while others were legends and famous people. The players could bet on any of these numbers. If they win, they will receive a fixed payout, usually 30 to 1. There was a definite house advantage as the odds of winning were 1 in 36. The winning “*Word Flowers*” were organized twice a week. However, the results of the game were fixed by the organizing company. “*Word Flowers*” was a popular game among the working class as the game required little skill and the payout was attractive (Ge 2004).

At the outbreak of the Pacific War in 1941, Hong Kong was under Japan’s rule. The Japanese army organized a new security group, called the security assistance mission in Hong Kong, in order to stamp out the local opposition (Ge 2004). This security group did not have sufficient funding. They thus raised funds by organizing Word Flower lotteries. After the ending of the Japanese occupation, this game was operated by members of the Chinese mafia groups, known as triad societies in Hong Kong. Though being illegal, Word Flower game continued to be one of the most preferred games among the working class housewives until the 1970s when the Hong Kong Jockey Club started a new lottery game, the *Mark Six* (六合彩). A complete list of current legalized games in Hong Kong is included in Appendix D.

### ***1.1.2 The Rise of the Hong Kong Jockey Club***

The Hong Kong Jockey Club (HKJC) is a not-for-profit organization and a company with liability limited by guarantee. Through its wholly owned subsidiaries HKJC Horse Race Betting Limited, HKJC Football Betting Limited, and HKJC Lotteries Limited, the Club holds the sole licenses for the operation and management of Hong Kong’s horse race betting, football betting, and Mark Six. The Hong Kong Jockey Club Charities Trust is a public charity and is primarily engaged in supporting charitable organizations and community projects in Hong Kong.

#### **1.1.2.1 The Early Years of Horse Racing**

The history of horse racing in Hong Kong dates back to the beginning days of colonization. During the governorship of Hong Kong’s first governor Pottinger, the committee of organization held horse races twice in 1842 and 1843. The races took place in Macao as there was not a suitable racing ground in Hong Kong. In 1845, a British group held the first horse race in Pok Fu Lam. There was no betting on the races (Cheng 2005).

As the small colony developed, many foreigners, especially British, came to work and live in Hong Kong. Many of them came from Europe, where horse racing was a social fixture of the upper class. Thus, they set up a permanent Jockey Club known as the “Hong Kong Jockey Club.” At that time, horse racing was held once a

year, called the Annual Anniversary Derby (Ge 2004). There was no betting on horses. The club performed more of a social function for the expatriates and members of the upper class in Hong Kong. Formal betting only began in 1891.

In the decades that followed, horse racing was not well received by the common Chinese people. Firstly, the membership was restricted to the elite class in the small colonial community. Common people never understood the techniques and the glamor of horse racing, which was essentially a pastime of European culture. On top of this, the formal language of the Hong Kong Jockey Club was English, a foreign language few of the local Chinese understood (Lao 1996).

The major factor that helped promote horse racing was the introduction of “Horse Tickets (馬標)” in 1931. “Horse Tickets” was a type of gambling which combined horse racing and gaming. The game operated much like a lottery where a printed ticket, each carrying a unique number, was sold for \$2 each. People could buy the tickets at convenient stores. The tickets were very popular for the common people as the prize was \$100,000, a sum of money that could buy two three bedroom apartment complexes. The announcement of the winning ticket was achieved in two phases. First, the Hong Kong Jockey Club would randomly draw out 12 finalist numbers. Each number would then be assigned to a particular horse in a race at the racing ground. The ticket tied to the horse that won the race would be the winning number of the lottery (Cheng 2005). This ingenious combination of horse racing and lottery increased popular interest in horse racing. No longer was the event a prestige hobby of the elite class. Rather, the commoners could participate in horse racing by wagering a small amount on the races.

“Horse Tickets” continued to be the major lottery event until 1977, when the Hong Kong Jockey Club canceled the issuance of “Horse Tickets.” The cancellation came about due to the government-sponsored lottery “Mark Six” becoming more popular than “Horse Tickets.”

### 1.1.2.2 The Japanese Era (1941–1945)

On December 8, 1941, Japan launched the Pacific War and Hong Kong was attacked by Japanese soldiers. On December 25, 1941, the British army surrendered to the Japanese. The change of sovereignty did not cease the operation of horse racing. The new Japanese occupation government changed the name of “Hong Kong Jockey Club” to the “Hong Kong Racing Association” and appointed Ma Kam Tong as the President of Hong Kong Racing Association. At that time, the majority of the local British had become prisoners of war. Ma invited Chinese members into the management of the association. This marked the beginning of local Chinese participation in the management of the Hong Kong Jockey Club (Ge 2004). Other major changes included the use of Chinese names for horses and the employment of Chinese people in the daily management of the race course. After the surrender of Japan in 1945, the Hong Kong Jockey Club began to rely on the local Chinese to manage the horse racing.

### 1.1.2.3 Postwar Development

After the Japanese surrendered to the British authorities in 1945, horse racing continued to expand. The facilities in the Happy Valley Racecourse were insufficient for the needs of horse racing. Consequently, an additional racetrack was built in Shatin, a newly developed suburb area in 1978. The new racetrack has the most up-to-date technological equipment. The city's first international race, the Hong Kong Invitation Cup, was run in January 1988 with entries from Singapore and Malaysia (Hong Kong Jockey Club 2013). In 2012/13, the betting revenue on horse racing totaled a new all-time high of \$94 billion.

### 1.1.2.4 Lotteries

The development of the lottery in Hong Kong can be traced to the financial needs of the small British colony after the Second World War. In the 1950s, a great number of illegal immigrants arrived in Hong Kong from Mainland China after the Chinese communists established the new People's Republic of China. The majority of these immigrants were poor and unskilled workers. There was an urgent need for the expansion of social services in the growing community. In response to such a need, Hong Kong Jockey Club set up a financially independent company called the Hong Kong Jockey Club (Charities) Limited for the purpose of supporting social services (Ge 2004). In 1962, the Legislative Council, the legislative branch of the Hong Kong Government, passed a legislation for "Government Lotteries." 40 % of total revenues of the lotteries were put into the "Government Lotteries Fund," to be used for social welfare purposes. The remaining 60 % was used as lottery winnings. This 60 % was distributed into three parts with the first prize accounting for 20 % of the amount. There were 10 winners for the second prize, each receiving 2 % of the amount and 100 winners for the third prize, each receiving 2 % (Ge 2004).

Lottery tickets were sold at \$2 each, the same price as a horse ticket. In the first few years of operation, the lotteries were not very popular among the general public. One reason was that the prizes were not very attractive. Rearrangement of the prize money was thus necessary. In 1968, 30 % was allocated to the first prize. In 1973, a further increase of prize money was made with the first prize reaping 40 % of the total amount of wagering. This was also the year that the Hong Kong Jockey Club began to build off-course betting stations or centers.

In 1974, the Jockey Club opened six off-course betting centers and telephone betting was also introduced that year. The off-course betting centers were situated in all districts in Hong Kong. This arrangement made gaming more accessible and available to many, especially those who lived far away from Happy Valley, where the race course is. Consequently, the revenues of HKJC increased drastically.

In 1976, the "Mark Six," a new lottery game which requires little skill and a minimum monetary investment, was introduced. Each bet costs only HK\$2, a small amount that could barely buy a simple lunch. The low cost of entry has the

advantage of inviting more players into the game, especially people from the working class (Friedman and Savage 1948).

Another reason for the popularity of the game is the simple structure and the minimal skills required to master the game. The player chooses 6 numbers from 49 numbers. On the opening of the lottery, six numbers and a special number are drawn. The first prize is the ticket which has the exact six numbers. The second prize is the ticket which has five of the six numbers and the special number.

If there is no first prize winner, the prize money is retained for the next phase of the first prize, known as “treasure prize pool (多寶獎金).” Thus, if there are no first prize winners for several consecutive drawings, the first prize can accumulate to several million dollars. This special arrangement has made *Mark Six* a phenomenal success as the player can have an opportunity to win several millions dollars, with a \$2 bet.

### 1.1.2.5 Legislation and Law

In 1977, the Gambling Ordinance (Laws of Hong Kong chapter 148 1977) was passed. The purpose of the law was not to outlaw gambling entirely but to limit gambling opportunities. In the area of commercial gambling, the HKJC is licensed to offer gambling on horse racing and Mark Six lotteries. In Hong Kong, any person or organization that receives bets or serves as a bookmaker offends a criminal law. Similarly, any person who places a bet with an illegal booker is liable to be prosecuted.

### 1.1.2.6 Football Gambling

Before 1997, horse racing and Mark Six were the two main gambling activities operated by the HKJC. The sovereignty of Hong Kong was returned to China in 1997. In 2001, the new Hong Kong SAR Government conducted a public consultation on soccer betting. The Gambling (Amendment) Bill was passed in 2003 which allowed legal wagering on soccer games in Hong Kong. The HKJC was authorized as the only legal institution which can operate football gambling.

The increased accessibility and availability of gambling opportunities in football matches have attracted more players to the new exciting game. Now, people in Hong Kong can bet on international soccer matches in Japan and Europe. These matches are played on the principle of fixed-odds betting. Fixed-odds betting is a form of wagering against odds offered by a bookmaker, and in this case, the bookmaker is the HKJC. Also, the HKJC has a specified Web site to accept online bets. Thus, players can place bets anywhere and anytime (Mok 2012).

In 1984–85, the Jockey Club betting revenue was HK\$19.6 billion and 85 million. By the 2003–04 year, the figures increased to HK\$86.9 billion and 48 million. After the legalization of football betting, the revenue further increased

to HK\$128.5 billion and 53 million in the financial year 2010–11, in which one-third was from football gambling.

### **1.1.2.7 The Hong Kong Jockey Club Charities Trust**

The Club can trace its long tradition of donating to charitable causes back to the beginning of the twentieth century. But it was beginning only in the 1950s, as Hong Kong struggled to cope with postwar reconstruction and the massive influx of immigrants, that the role of charities and community concerns became integral to its operations. In 1955, the Club formally decided to devote its surplus each year to charity and community projects. In 1959, a separate company, the Hong Kong Jockey Club (Charities) Ltd, was formed to administer the donations and the social services of the group. This company has in turn evolved into The Hong Kong Jockey Club Charities Trust, established in 1993 (Hong Kong Jockey Club 2013).

In the financial year of 2014–15, the business revenue was HK\$191.44 billion (HK\$193.95 billion, up 12.7 % for full racing season). The payments to Government in taxes and to the Lottery Fund recorded an all-time high of HK\$21.22 billion (HK\$21.52 billion for full racing season). The organization is the largest taxpayer in Hong Kong. The Club's Charity donations achieved a new record of HK\$3.87 billion. The charity fund responds to the various needs of the community. The range and diversity of recipient projects and programs reflect the Club's objective—to add value where it will provide the greatest benefit to society as a whole, to contribute to social causes and concerns, and to improve the quality of lives of the people of Hong Kong. The ten main areas of concerns are: (a) arts, culture and heritage, (b) education and training, (c) elderly services, (d) emergency and poverty relief, (e) environmental protection, (f) family services, (g) medical and health issues, (h) rehabilitation services, (i) sports and recreation, and (j) youth services. In the last decade, HKJC has supported over 1275 projects. In the 2014/15 financial year, the HKJC commits \$20 million to the Ping Wo Fund, the charity fund for gambling research and treatment for problem gamblers. Further, the club has committed to the new funding for four years up to 2018/19. With this commitment, the total contributions pledged will exceed HK\$362 million by 2018/19 (Hong Kong Jockey Club 2015).

### **1.1.2.8 High Society Membership**

Membership in this club is very strict, limited to the social elite of Hong Kong. Jockey Club membership applicants often must wait for years if not decades to be accepted. What makes it especially difficult to join is that this club does not allow memberships to be bought and sold in the secondary market. As of 2015, the joining membership fee is HK\$400,000, with HK\$1800 monthly subscriptions. In addition, every applicant needs the endorsement of two of the only 200 voting members and the support of three other members.

Operating as a not-for-profit organization, the Club allocates 70 % of its revenue for charitable and community projects. As a socially responsible organization, the Club helps Government “combat” illegal betting by establishing a legitimate means of betting and wagering on sports events. The Club is also one of Hong Kong’s largest employers with over 24,800 full-time and part-time staff.

### ***1.1.3 Conclusion: The History of the HKJC Is the History of Gambling in Hong Kong***

The development of gambling in Hong Kong is very different from that of Macao. Hong Kong does not have prominent gambling tycoons such as Dr. Stanley Ho who, as a businessman and gambling pioneer, contributed to the growth and development of the gaming industry and the overall cultural and economic development of the community. Instead, the history of the HKJC contributed and, in many aspects, mirrored the growth and development of gambling in Hong Kong. From the beginnings of the British Colony in the 1840s to the present Hong Kong SAR government under the sovereignty of the People’s Republic of China, the governing legislature never promotes or encourages gambling. It follows the basic principle of “active non-interference.” There are a number of factors behind this. Firstly, it is a fundamental Chinese belief that gambling is moral wrong. In traditional Chinese Confucian teaching, gambling is one of the four serious social sins. The other three are visiting prostitutes, drinking, and smoking heroin (嫖賭飲吹). Thus, as a responsible and moral government in the Chinese community, the British colonial government never wanted to promote a social sin and disgrace. Secondly, unlike in Macao, the economy of Hong Kong is diversely driven and does not need the tax contribution from the gaming industries. The British has been successful in transforming the economy of Hong Kong from a small fishing village in the 1840s to a major international business city in the 2010s. The focus of the development has been the building of infrastructure and transportation including roads, underground railways and airports, the establishment of large factories and manufacturing centers, and the development of its educational system and schools. The gaming industry has never been a major choice for economic development of Hong Kong. Under the principle of “active non-interference,” the government only intervenes when there is an urgent need. For example, the legislation of soccer betting was passed in 2003 as there was widespread illegal soccer betting in Hong Kong. Thus, we can argue that the development of gambling in Hong Kong is based on the needs, motivation, and gaming patterns of the people. The government has never envisioned developing a five- or ten-year plan for the gaming industry. A recent interview with fourteen legislative councilors in Hong Kong can reflect the concerns and perspectives of the government and the lawmakers (Wong 2011). The majority of the councilors (64.3 %) rejected the further expansion of legalized gambling in Hong Kong. Instead, most believed that, in order to help the problem

gamblers, the Hong Kong government and the gaming operators need to expand the current harm minimization strategies and responsible gaming practices.

The HKJC assumes the role of a crucial player in the development of gambling in Hong Kong. As a nonprofit organization, the HKJC has taken on the roles of odds maker, gaming tycoon, entertainment provider, and generous donor of charity funds for social services. The club is governed by a board of trustees, members of which include high-ranking government officers, college professors, legislators, and other socially reputable persons in the community. The club's 23,000 members never share the profits of the club: Over 70 % of the profits are donated and channeled to the social good and the needs of the community. Thus, the fundamental challenge for HKJC at this moment is to develop long-term planning for gambling and charitable services as the successful development of the club is crucial for Hong Kong as our outlined history of gambling has clearly demonstrated.

## **1.2 From the Gambling of Sins to the Gambling of Dreams: The History of Gambling in Macao**

Macao, famous for its gaming industry for many decades, is regarded as the “Las Vegas of the East” and the “Monte Carlo of the Orient.” In 2013, annual gross revenue from gaming was MOP 360,749 million, an 18.6 % increase compared to MOP 304,139 million in 2012 (The Gaming Inspection and Coordination Bureau 2014). The major portion of the revenue comes from patrons from Mainland China though the revenue has been in a downtrend due to an anti-corruption policy imposed by Xi Jinping, President of PRC since 2014. Since the beginning of the twenty-first century, Macao has become a favorite travel destination for Mainland Chinese middle-class families. The number of visitors from mainland China increased from 16.9 million in 2012 to 18.63 million in 2013, and further expanded to 21.25 million in 2014 (Government of Macao Special Administrative Region Statistics and Census Service 2015). The dramatic increase in gross gaming revenue has made Macao the largest gaming region in the world (Table 1.1). In this chapter, we will critically examine the historical development of the gaming industry in Macao and the relevant policies and strategies to control excessive or problem gambling.

### ***1.2.1 Early Development of the Macao Gaming Industry***

In 1557 (Thirty-sixth year of Emperor Jia Jing of the Ming Dynasty, 明朝嘉靖皇帝三十六年), Macao first opened up its port for trade. Later, in the seventeenth century, under military threats from Western countries, the Ching Dynasty (清朝, the empire ruling China from 1644 to 1911) ceded Macao to Portugal. As a colony,

**Table 1.1** The annual gross revenue from the gaming and the number of visitors from Mainland China to Macao from 2009 to 2015 (*Source* The Gaming Inspection and Coordination Bureau 2015; Government of Macao Special Administrative Region Statistics and Census Service 2015)

Year	2009	2010	2011	2012	2013	2014	2015
Annual gross revenue (in million MOP)	119,369	188,343	267,867	304,139	360,749	351,521	230,840
Number of visitors (in million person time) from Mainland China	10.98	13.22	16.16	16.90	18.63	21.25	20.41
Number of visitors (in million person time) from Hong Kong	–	7.47	7.58	7.08	6.77	6.42	6.53

the Portuguese transformed the small enclave (total area: 29.2 km<sup>2</sup>) into a modern city with a Western-style government. The Portuguese government appointed Portuguese governors to rule and administer the local government though the majority of the government servants were from the local area. Western-style educational and legal systems were installed in the small colony. Though the Portuguese government encouraged migration of Portuguese to Macau, over 90 % of the local residents were Chinese. During the early 1900s, Chinese people from the southern part of China moved to Macao for a better livelihood. They came to Macao to work as construction workers, harbor coolies, and domestic workers. Many of the new immigrants enjoyed gambling activities. Thus, small gambling stalls and venues were set up, mostly by local entrepreneurs, to meet the leisure needs of the working class. One of the most favorite games was fan-tan. The gaming organization, usually associated with the triads (Chinese mafia), served as the banker for the game. Since there was no regulation of gambling by the Portuguese colonial government at that time, gambling activities were common among the illiterate Chinese laborers.

In the mid-eighteenth century, gambling activities in Macao were widespread. Seeing the negative impacts of gambling on the local residents, the Ching Dynasty commissioned a high-ranking officer, Cheung Yue Lam, to Macao to investigate the illegal gambling situation. This was the first time the Chinese government negotiated with a foreign country on gaming policies. Later, Cheung and the Portuguese representative, Antonio Pereira de Silva, signed a joint declaration that the Portuguese colonial government promised to control illegal gambling activities. This was the first Chinese governmental involvement in gaming in Macao. In order to generate tax revenue, the Macao government legalized gaming for the first time in 1847 through the introduction of a licensing system. The annual tax revenue then expanded to a 100,000 silver ounces (Hsu 2006).

Legalizing the gaming industry in Macao was a controversial issue. Though the Macao government claimed that they respected the “traditional culture” of gambling among Chinese people, the truth was that the colonial government needed the



tax revenue from gaming industry to build the infrastructure of Macao and develop Timor and Sohor Islands (Eadington 1996; Gunn 1996), other colonies of Portugal. As a result, the governor of Macao, Captain Isidoro Francisco Guimarães, who governed from 1851 to 1863, introduced a licensing system for gambling stalls in Macao to raise taxes for the above purposes (Hsu 2006).

From the early inception of legalized gambling in Macao, gambling houses were run mostly by triad societies (Pinho 1991; Leong 2002). They were closely linked with other “gang families” who ran the business of labor trade and “piggy workers” business. The “piggy workers” were mostly unskilled and illiterate laborers from the remote villages of Mainland China. Very often, they were recruited by unscrupulous businessmen to work in Macao. These migrant workers were often poorly paid and their working environment was unhealthy. Their only entertainment was gambling. It was not uncommon for many of these workers to lose all of their salaries in gambling and get heavily in debt. The gangsters of the gambling houses then sent or literally “sold” them abroad to work as “piggy workers” in foreign countries. Some went as far as the USA. As the number of these gambling houses grew, Macao notoriously came to be known as “Monte Carlo of the Orient” in the late nineteenth century. The triads maintained an active and dominant role in Macao’s gambling businesses until sovereignty was returned to People’s Republic of China (PRC) on December 21, 1999.

### 1.2.2 *The Kings of Gambling in Macao: The First Generation*

Between the late nineteenth and early twentieth centuries, Lou Kau (盧九, 1848.11.10–1907.12.15) and his elder son, Lou Lim-lok (盧廉若, 1878–1927), dominated the gaming business in Macao. Lou Kau became the first “King of Gambling” in Macao. Arriving at Macao from his hometown of Xinhui, Guangdong (廣東新會) in 1857 (The sixth year of Emperor Xian Feng of the Ching Dynasty, 清朝咸豐皇帝六年), Lou was a trader of opium, a potent drug made from poppy seeds. He established the “Hong Feng Company (宜安公司),” selling opium and pacapio<sup>1</sup> (白鴿票). He also had an active role in Macao’s

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<sup>1</sup>Developed from pigeon racing in Guangdong Province in Mainland China, Pacapio is a traditional game introduced to Macao in the late Ching Dynasty from. In the earlier version of the game, birds were identified with names based on traditional Chinese literature known as “Qianziwen” (千字文, Thousand-Character Essay). The players can place bets on the competing pigeons. This racing later evolved to a game similar to a lucky draw, in which players wagered on 10 of 80 characters written on a piece of paper. The players won if five or more chosen characters matched the drawn characters. Today, the game employs numbers instead of text and the manual control balloting has been replaced by computerization. Pacapio games are still available in Macau in Hotel Lisboa (葡京酒店) and in Wing Hing Pacapio Centre (榮興電腦白鴿票投注站) (Macao Government Tourism Office 2015; Macao Patrimonio Mundial 2015).

commercial world by establishing a “yinhao” (銀號), an old-style Chinese private bank. As a successful businessman, Lou also ran the gaming business.

Lou Kau spent most of his lifetime in Macao. After becoming a millionaire through his many business ventures, he actively participated in charities. He donated large amounts of money to Kiang Wu Hospital (鏡湖醫院) and became its board member. He also organized schools that provided free education for children.

In 1904, the Ching Dynasty government prohibited gambling activities in Guangdong. That policy dealt Lou's business a serious setback. Profits of his “Hong Feng Company” shrank dramatically. In 1907, Lou ended his life by hanging himself at home (Lau 2002).

After the death of Lou Kau, his elder son, Lou Lim-lok succeeded his father's gaming and opium business. His achievement surpassed even his father's. Lou Lim-lok was later appointed a major government official in the Ching Dynasty. After coming to Macao, he became the main shareholder of “Nanyang Tobacco Company (南洋煙草公司)” and “Bao Heng Bank (寶亨銀行).” In 1913, he was elected the chairman of the Macao Commercial Association (predecessor of The Macao Chamber of Commerce). He was also invited to become the chairman of Kiang Wu Hospital in 1913, 1919, 1921, and 1923, respectively. Just as his father had done previously, Lou Lim-lok set up Confucian schools, providing education for children from poor families. Politically, he supported financially the revolutionary activities of his close friend, Dr Sun Yat-sen (孫逸仙, 1866–1925).

In June 1913, Lou Lim-lok ran the first racing post in Macao. One of the main features of that newspaper was the tips and records of horse racing, dog racing, and lotteries. Further, the newspaper provided tips regarding lotteries such as records and predictions of pacapio. It was the first Chinese daily newspaper that published news and events of gambling. The paper attracted more local people to participate in gambling activities (Lau 2002).

### ***1.2.3 The Beginning of Monopoly Concession: Fok Chi-Ting (1930–1937)***

The small Portuguese Colony experienced a difficult period during the 1930s and 1940s due to the Japanese invasion of China. Many mainland refugees came to Macao, resulting in a shortage of resources and high unemployment in the community. The local economy relied solely on smuggling activities and taxes collected from gambling houses at that time (Gunn 1996). Thus, the colonial government had to develop new sources of revenue for the struggling colony through licensing gambling.

In 1930, Fok Chi-ting (霍芝庭, 1877–1937) and his “Hou Heng Company (豪興公司)” obtained the first monopoly concession, paying MOP 800,000 taxes annually to the colonial government. Fok had the right to operate all types of approved casino games including new ones such as cussec (骰寶) and pai-kau (牌

九). The major casinos were at the “Central Hotel (中央酒店)” (in the Avenida Almeida Ribero) and the previous “Victoria Cinema,” respectively (The Gaming Inspection and Coordination Bureau 2014). The luxurious decoration and the diversified types of gambling attracted gamblers from Hong Kong and mainland China. In addition to gambling, the gamblers enjoyed free cigarettes, fruits, food, and Chinese opera shows provided by the gaming operators. Gambling, at this period, was no longer purely for the winnings—the gambling houses became a social place or “third place” (Khiatani et al. 2013) for the local workers. Gambling had been culturally transformed into a social or recreational lifestyle. Many locals went to the gambling houses on a weekly basis. To attract more customers, Hou Heng Company purchased an Austrian destroyer and modified it into a passenger ship, which travelled from Hong Kong to Macao. The passenger ferry brought in more gamblers from Hong Kong.

In addition to fan-tan, cussec, and pai-kau, horse racing and greyhound racing became two other popular gaming activities in Macao. In 1841, with the consent and blessing of the Macao government, British colonial government officials brought their horses to Macao and organized a weekend Derby in Tap Siac (塔石), Macao. During 1842–1844, Hong Kong horse races were officially held in Macao because a race course had yet to be built in Hong Kong. In the first few years of operations, horse racing was solely a sporting event. There was no betting channel for race courses at that time (Hong Kong Gamblers Recovery Centre 2015). In 1927, the first horse racing in Macao was held in the newly built horse racing ground in Areia Preta. It was organized by the Macao International Racing Sport Association that owned the monopoly concession for horse racing at that time. Horse racing prospered until 1942, the year after the Japanese invaded Hong Kong. In 1980, Ip Hon (葉漢, 1906–1997) attempted to restore horse racing by forming the “Macao Trotting Club (澳門賽馬車會),” a game that originated in Northern Europe. However, trotting never became popular in Macao. Heavy losses incurred by the trotting business led to financial crisis within the company. Finally, the horse racing business was sold to Dr. Stanley Ho. In February 1991, horse racing was restored.

The history of greyhound racing in Macao was shorter than that of horse racing. In 1932, Fan Che-pang (范潔朋) started the “Macao Canine Club” and built a greyhound racing stadium (later named “Yat Yuen Canidrome”). However, greyhound racing was not popular at that time. The business stopped operating several years after until it was resumed in September 1963 (Lau 2002).

#### ***1.2.4 The First Monopoly Concession (1937–1961)***

“Hou Heng Company” dominated the gaming industry in Macao for only several years. When Fok Chi-ting withdrew his shares from the company due to dissatisfaction among the shareholders, the “Hou Heng Company” immediately faced a huge financial crisis and deep debts. It could not afford the guaranteed tax to be paid

to the Macao Portuguese government, even after the requirement was adjusted to MOP 600,000 per year. Finally, the gaming business of “Hou Heng Company” was closed.

In 1937, after the sudden death of Fok Chi-ting on May 25, the “Tai Heng Company (泰興公司),” headed by Fu Tak-iong (傅老榕, 1894–1960) and Kou Ho-neng (高可寧, 1878–1955), won the casino monopoly concession, with a guaranteed annual gaming tax of MOP 1.8 million paid to the Macao Portuguese government. Fu Tak-iong was a powerful figure in the secret societies of Guangdong, Macao, and Hong Kong. Before coming to Macao, Fu operated underground casinos in Shenzhen, China, where he made a huge profit. Kou Ho-neng was “the king of pawnshop business” in Macao. Pawnbroker shops provided a complementary and close business link to casinos.

In 1937, Fu and Kou signed the contract of monopoly concession with Macao governor Artur Tamagnini de Sousa Barbosa (巴波沙總督, 1880–1940). The “Tai Heng Company” monopolized the gaming industry of Macao until December 31, 1961. In other words, Fu and Kou dominated the gaming business in Macao for nearly 25 years.

Unlike the operation method of the “Hou Heng Company,” which mainly offered Chinese types of gambling such as fan-tan, pai-kau, and cussec, the “Tai Heng Company” introduced many new Western games such as baccarat (百家樂) and black jack (廿一點). Fu also converted the “New Central Hotel” in Avenida Almeida Riberiro into its flagship casino. The new eleven-floor casino opened in 1938, consisting of four departments: catering (both Chinese and Western restaurants), tourism, transport, and entertainment. In this new gaming enterprise, Kou only provided funds for the company. Fu, in fact, controlled almost all the business of the company. As a result, Fu became the second-generation “king of gambling” in Macao.

During the Pacific War (1941–1945), Macao was not invaded by the Japanese because Portugal remained neutral during World War II. It became a safe haven in the southern tip of China. Consequently, refugees from Hong Kong and Guangdong fled to Macao for freedom. Macao’s population rose to 400,000. A number of refugees were prosperous middle-class people from Mainland China. They went to Macao with their wealth. Consequently, the gambling business of the Tai Heng Company bloomed. As the king of gambling, Fu monopolized the gaming industry in Macao until his death in 1960.

### ***1.2.5 The Second Monopoly: Stanley Ho’s Empire (1962–2002)***

Kou Ho-neng died on March 29, 1955, and Fu Tak-iong died suddenly in November 1960. The death of the two gambling tycoons severely impacted the monopoly franchise in 1962 as the monopoly concession of the “Tai Heng

Company” was to expire on December 31, 1961. A few months before the death of Fu, Macao Governor Jaime Silvério Marques (馬濟時總督, the 119th Governor of Macao, 1959–1962) declared Macao’s status as a low-taxation region. He also strategically positioned Macao as a gaming and tourism city. Macao aimed to continue developing these two industries because of the lack of natural resources for other industries. After reporting to the Lisbon government his investigation findings, Governor Marques defined gaming as “any game with results that are unpredictably and randomly generated and win purely by one’s luck is called games of fortune” (The Gaming Inspection and Coordination Bureau 2014). On February 13, 1961, the Portugal Foreign Department issued Law no. 18267, declaring Macao a tourist area and legally permitted its gaming industry as a “special entertainment,” which was beneficial to its local economy.

In July 1961, Governor Marques enacted Diploma Legislativo No. 1496, which opened the bidding for operations of games of fortune to the public. The bidding included games (at least 10 types of legally permitted games) in casinos as well as selling “Pou lottery (鋪票),” “Shan lottery (山票),” and “Pacapio lottery (白鴿票).” Any companies which intended to participate in bidding should fulfill the following criteria:

- (1) The company winning the bidding should pay gaming tax of not less than MOP 3 million annually to the Macao Portuguese Government, with an additional 5 % tax for the reserve of tourism department fund, and an extra 1 % for the civil servant mutual support fund;
- (2) The winner had to build a new casino and a luxury hotel within three years after winning the tender;
- (3) The concession would last no longer than 8 years. After its expiration, all the facilities had to be handed over to the government unconditionally and later transferred to the new bid winner.

At that time, the Fu and Kou families planned to bid on the contract. Most people of Macao thought the “Tai Heng Company” would continue operating the gaming industry in Macao. However, they faced an unexpected and powerful competitor, Sociedade de Turismo e Diversões de Macao (STDM, 澳門旅遊娛樂股份有限公司, translated as Macau Travel and Amusement Company Limited, registered in 1962). The main shareholders of STDM were Hon Ip (葉漢, 1904–1997), Terry Tak-lei Ip (葉德利, 1913–2003), Stanley Hon-san Ho (何鴻燊, 1921.11.25), and Henry Ying-dong Fok (霍英東, 1923–2006).

The Tai Heng Company sent its tender first, with a proposed annual gaming tax of MOP 3.15 million. Five minutes after the “Tai Heng Company” sent its tender, STDM handed one in, with a proposed gaming tax of MOP 3.167 million. STDM beat the Tai Heng Company and won the bidding. STDM also won the “Pou lottery,” “Shan lottery,” and “Pacapio lottery,” with a guaranteed annual tax of MOP 384,000 dollars. Soon after winning the bidding, the new casino monopoly concessionaire registered as STDM in 1962 (Lau 2002). Its first official casino, the Casino Estoril, opened the same year. On March 30, 1962, Stanley Ho represented

STDM to sign the contract with António Adriano Faria Lopes dos Santos (the 120th Governor of Macao, whose term of office was 1962 to 1966) in Lisbon. Two months later, the Macao Portuguese Government conferred the gambling franchise to STDM. The management of STDM in 1962 was as follows:

- Terry Tak-lei Ip: Board chairman
- Stanley Hon-san Ho: Managing director
- Hon Ip: Board member
- Henry Ying-dong Fok: Board member

In the first few years of operation of the newly formed company, there was severe competition for control between Hon Ip and Stanley Ho. Born in Hong Kong, and received a Western-style education from Queen's College in Hong Kong, Stanley Ho established a close relationship with the Chinese and the Lisbon government. In addition, he had close ties with the political elite in Hong Kong and Macao. Inside STDM, Terry Ip was his brother-in-law while Henry Fok was his long-time friend who helped him greatly (Trigo de Sousa 2009). In 1975, Hon Ip retired from STDM. From that point onward, Stanley Ho was in total control of STDM.

Under Dr. Stanley Ho's direction, STDM invested extensively in Macao's infrastructure, transport, entertainment, and services facilities, significantly contributing to the modernization of Macao's local economy over the next 50 years. The Macao Portuguese Government often relied on STDM for the development of Macao. Every time the colonial government renewed monopoly contracts with STDM, it included more development obligations such as the provision of travel agencies, building of luxury hotels, transportation networks, tourism offices, and information media (Hsu 2006). STDM also operated the "Yat Yuen Canidrome," horse racing tracks, lottery sales, nightclubs, saunas, and restaurants. Trigo de Sousa (2009) reported that some 30 % of Macao's working population was employed by STDM and their associated companies. In other words, STDM has successfully developed the gambling business into Macao's most important economic sector. As the major business conglomerate in Macao, STDM dominated the gaming and tourism industry for some 40 years until March 31, 2002.

In the last few decades of the twenty-first century, the Macao Portuguese Government became increasingly reliant on STDM for its fiscal revenues. For example, the shares of total government revenues contributed by STDM in 1988, 1991, 1994, and 1996 were 52.5, 63, 75 and 64.5 %, respectively. These statistics reflect the importance of STDM (Trigo de Sousa 2009). The success of STDM could be attributed to several factors:

- (1) It introduced Western-style casino games such as baccarat, roulette (輪盤), black jack, and slot machines (角子老虎機) to the gamblers in Macao. Together with traditional Chinese games such as fan-tan, cussec, and pai-kau, STDM catered to the gaming and entertainment needs of people from all walks of life;

- (2) It separated high rollers from other gamblers by welcoming them into special VIP rooms. Those high rollers were preferentially treated so that they could better enjoy the games;
- (3) Its VIP rooms employed a subcontractor model; i.e., STDM developed joint ventures with local business partners who were responsible for the actual administration of specific locations within the casino. The subcontractor could earn 30 % of the VIP rooms' monthly income after paying taxes to the government. The significance of this subcontractor run model was that it attracted a more diversified customer base;
- (4) Stanley Ho developed a junket system which recruited tourists and potential gamblers from outside of Macao. Junket operators acted as travel agents, financiers, and catering managers to potential tourists. They sold gambling chips to these customers at a discount. These special chips, called "mud chips (泥碼)," could be used in gambling but could not be exchanged for cash. If the player wins, he/she could exchange them into "live chips (籌碼)." This system was welcomed by gamblers because they received complimentary services, and junket operators made money by taking "commissions" from gamblers.

### ***1.2.6 The Partial Liberalization of Macao's Gaming Industry***

On December 20, 1999, the sovereignty of Macao was handed over to the People's Republic of China. Edmund Hau-wah Ho (何厚鏸), the first Chief Executive of Macao Special Administrative Region (Macao SAR), decided to make changes in the gaming industry's monopoly system. Shortly after the handover, Edmund Ho invited an international consulting company to explore the future of the gaming industry. The "Macao Gaming Committee" was formed in July 2000 and was responsible for addressing the administrative and legal issues related to the gaming industry. One year later, in August 2001, the Macao Legislative Council passed Law no. 16/2001, which defined Macao as a "continuous gaming zone" and that the Macao SAR Government had the exclusive authority to define spaces and modes in gaming in the territory (Decree Law 16/2001, article 5). The Law of Games of Fortune expanded the number of concessions for gaming from one to three after the expiry of the monopoly concession of STDM on December 31, 2001. The Macao SAR government would then grant three gaming concessions, the purpose of which was to attract both local and overseas investments to boost the local economy.

So, what were the qualifying criteria to bid for the gaming concession? According to Decree Law 16/2001, the potential parties participating in the bidding should fulfill the following (Decree Law 16/2001 article 27):

- (1) At least MOP 200 million as capital;
- (2) A deputy administrator who is a local permanent resident and owns at least 10 % of the capital;
- (3) Development projects including local partners;
- (4) To pay 35 % gambling tax annually, plus extra 2 % for charity, with additional 3 % for urban development, and 5 % for tourism promotion.

Although the licensed enterprises needed to pay a total of 45 % of its annual gambling revenues to the Macao SAR Government, they received priority in land bids for the gambling-related construction projects. They also had the prior right to bid on land reclamation projects.

In October 2001, the “Casino Concessions Committee” was formed, which was responsible for the tendering process. The tendering process was brief: from November 2, 2001, to December 7, 2001. Three licenses would be granted by the Macao SAR Government. The potential candidates came from Macao, Hong Kong, Malaysia, Taiwan, UK, USA, and Mexico. Until the contract expiry date for STDM on December 31, 2001, the “Casino Concessions Committee” was unable to select the three winners from the potential candidates. Consequently, the monopoly concession of STDM was extended to March 31, 2002.

On February 8, 2002, the Macao SAR Government announced the winners of the tender. The winners were Sociedade de Jogos de Macau, S.A. (SJM, 澳門博彩股份有限公司), Galaxy Resort and Casino Company (Galaxy, 銀河娛樂集團), owned by Hong Kong businessman Chee Woo Lui (呂志和), the chairman of K. Wah Group (嘉華集團), and Wynn Resorts (Wynn, 永利渡假村), a Las Vegas-based company owned by Steve Wynn (史提芬·艾倫·永利), a Las Vegas casino tycoon.

The first license was issued to Stanley Ho’s SJM, renamed from STDM in February 2002. As of December 2015, SJM owned 20 casinos (there are a total of 36 casinos) in Macao. Stanley Ho’s SJM remains dominant in the gaming industries in Macao.

SJM, Galaxy, and Wynn signed concession contracts for the operation of casino games of fortune with the Macao SAR Government on March 28, 2002, June 24, 2002, and June 26, 2002, respectively. Galaxy, the second licensee, formed a partnership with Las Vegas-based Venetian group (威尼斯人集團). The parent company of Venetian group is the Las Vegas Sands (美國拉斯維加斯金沙集團), led by Sheldon Alderson (謝爾頓·艾達臣). In 2002, they formed a partnership called Galaxy-Venetian Casino Consortium. In December 2002, the Macao SAR Government allowed Galaxy to have a subconcession relationship with the Venetian (Venetian Macao, S.A., 澳門威尼斯人). In 2003, the Galaxy Star World Casino (澳門星際娛樂場) opened. Later, on May 18, 2004, the first American casino, the Macao Sands Casino (澳門金沙娛樂場), owed by Sheldon Alderson’s



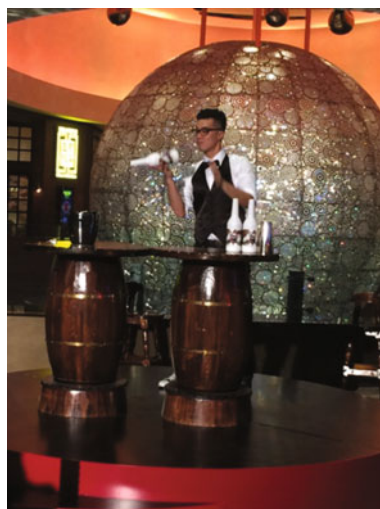
Las Vegas Sands, began its gaming business in Macao. The Macao Venetian Resorts (澳門威尼斯人渡假村) opened in 2006. It is an integrated resort, consisting of a casino (600,000 square feet in area), 3000 hotel suites, big shopping malls, restaurants, convention and exhibition centers, swimming pools, a canal, and a 1500-seat showroom (Trigo de Sousa 2009).

Later, SJM signed a subconcession with MGM Grand Paradise, S.A. (MGM, 美高梅金殿超濠股份有限公司), another American-based global entertainment company (SCMP, February 8, 2004). Pansy Ho (何超瓊), the daughter of Dr. Stanley Ho, owned 50 % of the MGM. The subconcession was signed on April 20, 2005.

The third licensee, Wynn Macao (永利澳門), another Las Vegas-based enterpriser owned by Steve Wynn, also signed a subconcession contract with Melco PBL Jogos (Macao), S.A. (currently named “Melco Crown”, 新濠博亞) on September 8, 2006, at a price of US \$900 million. PBL is an Australian-based enterprise. It partnered with Lawrence Ho (何猷龍), the son of Dr. Stanley Ho, to form the Melco PBL (新濠博亞博彩(澳門)股份有限公司). Lawrence Ho had 40 % of the Melco PBL Shares. In September 2006, Wynn Resorts opened for business. In the same month, the Melco PBL gained control of all the Mocha (摩卡) slot lounges. Its first casino, Casino Altira (新濠鋒, previously named Casino Crown), opened in May 2007.

As of December 31, 2015, there were 23 casinos in Macao Peninsula and 13 casinos in Taipa, totaling 36 casinos. Among these establishments, SJM had 20; Galaxy had 6; the Venetian had 4; Melco Crown had 4; Wynn had 1; and MGM had 1 (Figs. 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, and 1.8).

**Fig. 1.1** Integrated resorts—  
skilful bartender’s  
performance (Photographs by  
Li Wai Lim and Cheung  
Wing Chi in July 2015)



**Fig. 1.2** Integrated resorts—  
new types of casinos in  
Macao (Photographs by Li  
Wai Lim and Cheung Wing  
Chi in July 2015)



**Fig. 1.3** Integrated resorts—  
shopping boulevard  
(Photographs by Li Wai Lim  
and Cheung Wing Chi in July  
2015)



Although there have been major changes in the gaming operations and legislation since 2002, SJM's status remains dominant among the three (in fact, six) licensees. The partial liberalization of the gaming industry enhanced further economic development of Macao and helped consolidate Macao as an important player in the gaming and tourism industry in the world (Table 1.2).

**Fig. 1.4** Integrated resorts—  
exciting show (Photographs  
by Li Wai Lim and Cheung  
Wing Chi in July 2015)



**Fig. 1.5** Integrated resorts—  
beautiful decoration  
(Photographs by Li Wai Lim  
and Cheung Wing Chi in July  
2015)



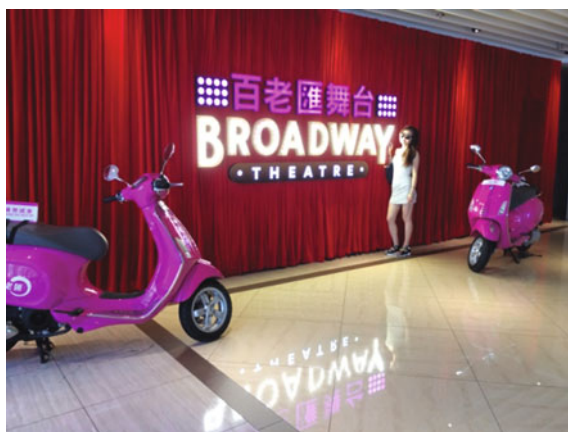
### ***1.2.7 Responsible Gambling in Macao***

The rapid development of Macao's gaming industry after 2002 has boosted the local economy tremendously. Exponential growth of Macao's Gross Domestic Product (GDP) has helped the former Portuguese colony become the "Las Vegas of the East" and one of the wealthiest regions in the world. With the increase of gaming opportunities, there have been more reported cases of problem gamblers. According to the "Macao Resident Participation in Gaming Activities Survey,"

**Fig. 1.6** Integrated resorts—  
“24-hour sunlight” resort  
(Photographs by Li Wai Lim  
and Cheung Wing Chi in July  
2015)



**Fig. 1.7** Integrated resorts—  
newly-built theatre  
(Photographs by Li Wai Lim  
and Cheung Wing Chi in July  
2015)



conducted by The Institute for the Study of Commercial Gaming and University of Macao, the prevalence of probable pathological and problem gamblers had risen from 4.3 % in 2003 to 6 % in 2007. In view of this, the Macao SAR government started to launch more treatment and harm minimization strategies, including responsible gambling policies. Responsible gambling is defined as “gambling occurs in a properly regulated environment where one’s involvement in gambling activities brings no harm to the gambler, family members, friends, other gamblers, or casino staff; nor would it lead to negative consequences for the local community and residents (Delfabbro 2008).” In other words, responsible gambling is “a practice that confines the gambling-related damage to a socially acceptable level” (The Gaming Inspection and Coordination Bureau 2014). Here are some of the actions and policies taken by the relevant governmental departments:

**Fig. 1.8** Integrated resorts—live shows advertisements (Photographs by Li Wai Lim and Cheung Wing Chi in July 2015)



**Table 1.2** Information on casinos (*Source* The Gaming Inspection and Coordination Bureau 2015)

Sociedade de Jogos de Macau, S.A. (SJM)	Galaxy Casino, S.A. (Galaxy)	Wynn Resorts (Macau), S.A. (Wynn)
Casino Lisboa	Casino Waldo	Casino Wynn
Casino Oceanus no PelotaBasca	Casino Rio	
Casino KamPek	Casino Broadway	
Casino Jimei	Casino President	
Casino Macau Palace	Casino Star World	
Casino Greek Mythology	Casino Galaxy Macau	
Casino Diamond		
Casino Casa Real		
Casino Taipa		
Casino Lan Kwai Fong		
Club VIP Legend		
Casino Grand View		
Casino Macau Jockey Club		
Casino Fortuna		
Casino Golden Dragon		
Casino Emperor Palace		
Casino Babylon		
Casino Grand Lisboa		
Casino Ponte 16		
Casino Le Royal Arc		
<b>MGM Grand Paradise, S.A. (MGM)</b>	<b>Venetian Macao, S.A. (Venetian)</b>	<b>Melco Crown (Macau) Limited</b>
Casino MGM Grand	Casino Sands	Casino Altira
	Casino Venetian	Casino Taipa Square
	Casino Plaza	Casino City of Dreams
	Casino Sands Cotai Central	Casino Studio City, Macau

- (1) The Gaming Inspection & Coordination Bureau, the Social Welfare Bureau and the Institute for the Study of Commercial Gaming of University of Macao have launched the “Responsible Gambling Awareness Week” every year since 2009. The aim of this event was to raise public awareness of the adverse effects of gambling;
- (2) The Macao SAR Government established the “Responsible Gaming Work Preparation Unit,” which is responsible for the drafting of responsible gaming policies and general executive measures;
- (3) Beginning November 1, 2012, persons aged below 21 are prohibited from entering casinos. Offenders will be subjected to a fine of MOP 10,000. The responsible casino will face a fine of MOP 500,000;
- (4) The SAR Government initiated the self-exclusion and third-party exclusion applications (Article 6, Clause 1 of Law No. 10/2012) in October 2012. Problem gamblers are allowed to exclude themselves from entering casinos. The maximum period of self-exclusion is two years.

Despite enforcing the above policies, Macao has fallen behind international standards on responsible gambling. Compared with the systematic responsible gambling policies enforced by the Singaporean Government and the relevant responsible gambling strategies of the two casinos in Singapore, the Resorts World Sentosa and the Marina Bay Sands, responsible gambling in Macao, appear to remain in its “elementary stage” according to Hing (2010).

**1.2.8 Lessons from the Responsible Gambling Strategies and Practices in Australia**

Table 1.3 illustrates five stages of corporate citizenship in responsible gambling according to Professor Nerilee Hing of Southern Cross University, the pioneer researcher of corporate social responsibility in gambling. Hing (2010) classifies the development of responsible gambling into five stages, using experiences of corporate responsibility among casinos in Australia. Prior to the 1990s, gaming operators demonstrated little interest in responsible gambling. Responsible gambling was a relatively new concept. The notion of putting a moral limit on the wagering and gaming behavior of its patrons ran counter to the booming gaming business. Consequently, there were few relevant policies or practices. Hing

**Table 1.3** Stages of corporate citizenship in responsible gambling

Stage 1	Elementary
Stage 2	Engaged
Stage 3	Innovative
Stage 4	Integrated
Stage 5	Transforming

Source Modified from Mirvis and Googins (2004)



classified this state as the elementary stage. In the late 1990s, with the increase of problem gambling among the general public, the Australian government began to address the problem by conducting several wide-ranging inquiries into gambling. These series of actions prompted gaming operators to engage the issue of responsible gambling (stage 2: engaged stage) during the period of 1997–1998. In this stage, 19 clubs voluntarily participated in responsible gambling practices but with very limited efforts or input. Their practices were mainly passive such as putting up signage publicizing the harm from problem gambling and self-exclusion provisions for problem gamblers. However, compliance by the gaming entrepreneurs was low. They strongly resisted changing their current practices, fearing reduction of their fiscal revenue by enforcing responsible gambling policies. The engaged stage lasted until 1999, when the Australian gaming industry progressed to the third stage, the innovative stage (Mirvis and Googins 2004). The critical event which triggered the transformation was the release of the report of the national inquiry into gambling (Productivity Commission 1999). Instead of continuing passive and less effective practices such as self-exclusion, the report recommended introducing measures of harm minimization and consumer protection. It took another 10 years to fully incorporate the concepts of responsible gambling into gaming operations and become a standard practice in the gaming business. According to Hing (2010), the integrated stage was reached because of a cultural shift in Australian society, where there was closer cooperation between casinos and local gambling help agencies. Local treatment agencies began to provide counseling services to problem gamblers referred by staff in casinos. They also organized staff training for those working in gambling venues to help identify patrons who might have gambling problems (Hing and Nuske 2009). Legal requirements imposed by the Australian government also played a significant role in integrating responsible gambling practices into the gaming business. The second national inquiry conducted by the Productivity Commission in 2010 recommended a more proactive approach in responsible gambling strategies. This suggestion reflected a strategic intent of shifting of policies from harm minimization to harm prevention. It also urged the extension of shutdown periods of gaming rooms as well as lowering the cash (up to AUD\$20) inserted into electronic gaming machines (EGMs) at any one time. Another recommendation was to limit cash withdrawals from ATMs to AUD \$250. All these suggestions aimed at helping the Australian gaming industry to move toward the final stage of the model—the transforming stage.

### ***1.2.9 Responsible Gambling Policies, Strategies, and Practices in Macao***

Table 1.4 describes the responsible gambling strategies, policies and practices in Macao and Singapore. In more practical terms, responsible gambling includes harm minimization strategies (e.g., controlled gambling and self-exclusion options),

**Table 1.4** A brief summary of responsible gambling strategies, policies, and practices in Macao and Singapore

Macao SAR	Singapore
<b>The Institute for the Study of Commercial Gaming (ISCG):</b> To promote the advancement of gaming knowledge and benefit to the government, gaming operators, and society via organizing continuing public education programs and academic research studies	<p><b>Game design:</b> Games are designed in a way that discourages excessive gambling</p> <p><b>Informed choice:</b> Casino patrons are well-informed about the nature of the gaming products before they bet on the games. Staff working in casinos are trained not to encourage customers to gamble excessively</p> <p><b>Posters and Signage:</b> Display “Play Responsibly” on all printed and electronic communication materials. The gaming authorities have also launched a number of public education events on responsible gambling on a regular basis</p>
<b>Responsible gambling awareness week:</b> Since 2009, an annual awareness campaign is organized by the Gaming Inspection and Coordination Bureau (DICJ) and the Social Welfare Bureau (IAS), and the Institute for the Study of Commercial Gaming of University of Macao	<b>Responsible gaming week:</b> Since 2007, an annual awareness campaign has been organized by Singapore Pools (a subsidiary of the Tote Board established by the Singapore Government in 1968)
<b>Casino exclusion measures:</b> The DICJ can prohibit a person from entering the casinos if he/she has applied for the self-exclusion or third-party exclusion service	<b>Casino exclusion measures:</b> The National Council on Problem Gambling (NCPG) has the statutory authority to decide self, family, and third-party casino exclusions. It also provides advice and feedback to the government on problem gambling and conducts public education
<b>Types of casino exclusions:</b> Self and third-party	<b>Types of casino exclusions:</b> Self, family, and third-party
<b>Entrance fee at casinos:</b> None	<b>Entrance fee:</b> Local residents must pay SG 100 to enter any casino in Singapore while tourists are admitted free of charge but they need to show their passports on entry to the casinos

Source <http://www.dicj.gov.mo/web/cn/frontpage/index.html>  
<http://www.singaporepools.com.sg>  
<http://www.ncpg.org.sg/en/Pages/home.aspx>

balanced development, shared responsibility, informed decisions, consumer protection, and best practices (Hing 2001). Consumer protection strategies include the provision of adequate information about the nature of fortune gaming to protect consumer rights and informed choice (Huang 2011), which simply means informing casino visitors of the risks and consequences of excessive gambling.

The following section presents the particular roles and contributions of the various stakeholders of gaming in promoting responsible gambling.



### 1.2.9.1 Macao SAR Government

The Gaming Inspection and Coordination Bureau (DICJ) and the Social Welfare Bureau (IAS) are the two major governmental departments responsible for developing and promoting responsible gambling in Macao. In 2008, the DICJ introduced a voluntary self-exclusion (gamblers) and third-party (gamblers' family members) program but this service had no legal authorization to apply punitive measures to those who violated the program at that time. The Macao SAR Government subsequently passed the law of "Regulating the Conditions of Entering, Working and Gaming at Casinos" in October 2012 to confer authority to the director of DICJ to prohibit a person who has applied for self-exclusion or third-party exclusion service from entering any or all of the casinos run by the six casino operators in Macao for a maximum period of two years (Article 6, Clause 1 of Law No. 10/2012). Under the new law, anyone may submit self-exclusion applications. Applicants eligible for the third-party exclusion application should be the excluded person's spouse, parent, son/daughter, or brother/sister. The person to be excluded must sign on the application form to confirm the exclusion (The Gaming Inspection and Coordination Bureau 2014). However, the self-exclusion and the third-party exclusion programs are mainly voluntary in nature. There are no mandatory punishment provisions for violations of the self-imposed exclusion. The excluded persons may also apply for cancellation within the exclusion period. In addition, the treatment of problem gambling is not compulsory. This means that the excluded person has the right to choose not to receive counseling services from problem gambling prevention and treatment centers during the exclusion period. The new law passed in October 2012 granted the DICJ director the authority to prosecute those failing to comply with the self-exclusion once their applications were approved. Table 1.5 illustrates the data on casino exclusion applications since November 1, 2012.

As the above data indicate, the total number of exclusion applications amounts to only 280 over three years. This is a small number in a general population of 640,000 residents. The reason might be the lack of promotion by the casinos and the government. The first author of this writing has been teaching in Macao for 17 years. He has asked many local residents, including gamblers, about the issue of self-exclusion. Very few of them have heard about the particular provisions.

Since 2012, the DICJ has restricted the upper limit for casino gaming tables in Macao. The six casino concessionaires and subconcessionaires were allocated a certain fixed amount of tables. The gaming operators must get approval from the

**Table 1.5** Quarterly data of the casino exclusion applications (*Source* The Gaming Inspection and Coordination Bureau 2015)

Items	<sup>a</sup> 2012	2013	2014	2015
Self-exclusion	27	252	262	328
Third-party exclusion	3	24	18	27
Total	30	276	280	355

<sup>a</sup>Data were available since November 1, 2012

**Table 1.6** Number of gaming tables in Macao in 2010–2015 (*Source* The Gaming Inspection and Coordination Bureau 2015)

	2010	2011	2012	2013	2014	2015
Number of gaming tables	4791	5,302	5485	5750	5711	5957

government if they want to add more gaming tables. At the end of 2012, the upper limit for gaming tables was set at 5500. However, that upper limit may be flexible and adjustable based on consumer demand. When new casinos are established in Cotai Strip, the number of casino gaming tables will inevitably expand. For example, at the end of the third quarter in 2015, the number of gaming tables was adjusted to 5819 (Table 1.6). And the number of gaming tables has been further increased by 200 after the Casino Studio City opened on October 27, 2015.

The Social Welfare Bureau (IAS) opened a new problem gambling treatment center, the Resilience Center (志毅軒), on November 7, 2005. This is the only problem gambling treatment center run by the government. This center provides extensive services such as counseling, prevention, education, and research on problem gambling.

Starting in 2009, the DICJ, the IAS, and the Institute for the Study of Commercial Gaming of University of Macao have organized the “Responsible Gambling Awareness Week” every year, with a particular theme for each year. For example, the theme in 2012 was “Seek Help Proactively.” A series of promotional activities were held during that week. On December 17, 2012, a pilot program “Responsible Kiosk” was set up inside Casino Lisboa, Galaxy Macao, Venetian, MGM, Wynn, and Melco Crown (The Gaming Inspection and Coordination Bureau 2015). Trained “Responsible Gambling Kiosk Ambassadors” were posted in the above six casinos to promote appropriate gambling behaviors to casino patrons. In addition, casino visitors could also access relevant information about responsible gambling via the “Responsible Gambling Information Pavilion (負責任博彩資訊亭).” Other activities held during the Responsible Gambling Week in 2012 included posting large outdoor billboard advertisements and a drama competition. The DICJ and IAS also collaborated with the University of Macao to sponsor a responsible gambling forum.

**1.2.9.2 Academic Scholars**

In Macao, the first research project on responsible gambling was reported in 2005 by Dr. Zhonglu Zeng, President of the Asia Pacific Association of Gambling Studies, Professor at Gaming Teaching and Research Centre of Macao Polytechnic Institute. His research was a study on the causes of gambling behavior. Studies on social and public responsibility of the gaming industry in Macao were later presented by Dai (2007), Chiang (2008), and Fong (2009). Among them, Dr. Davis Fong presented a seminal paper entitled “Responsible gambling: An approach for Chinese community with legalized casinos” in the symposium on responsible

gambling in 2009. In the paper, he formulated the “Responsible Gambling—Macao Model” and explained the roles and responsibilities of various stakeholders in detail.

In addition to research and policy development, a number of colleges in Macao contribute to responsible gambling by training new employees in the gaming industry. The Gaming Teaching and Research Centre of Macao Polytechnic Institute now offers a bachelor degree in Social Science in Gaming and Recreation Management. The course curriculum includes responsible gambling and the psychology of problem gambling. The center also organized an International Conference on Gaming, Leisure and Entertainment from July 30, 2014, to August 1, 2014. Speakers at the conference shared experiences of responsible gambling in other jurisdictions, reviewed responsible gambling policies in Macao, and recommended strategies to raise the standard of gaming and tourism industry of Macao to the international level.

There has been a lack of systematic review model to describe responsible gambling in Macao. Among the few models proposed, Song et al. (2012) developed an extended model of goal-directed behavior (EMGB) to describe casino patrons’ behavior intention. Using confirmatory factor analysis, the authors showed that perception of responsible gambling strategy had a positive effect on both desire ( $t = 2.999, p < 0.01$ ) and behavioral intention ( $t = 2.132, p < 0.05$ ) to gamble. This means that if people perceive casino image as positive, their desire and behavior intention would be higher. Song also recommended several responsible gambling strategies: (1) restricting the number of casino visits by local residents; (2) supporting problem gambling and prevention agencies to provide counseling to problem gamblers; (3) prohibiting casinos from opening 24 h a day; (4) installing clocks in casino; and (5) reducing number of ATMs inside the casinos.

In Canada, responsible gambling can also be incorporated with a high-tech approach. An example of this is the iCare system, which is a particular software designed on the principles of responsible gambling. According to Davies (2007), iCare focuses on primary (education and promotion) and secondary (prevention) interventions to address problem gambling. It is able to identify risk levels of casino patrons. Once identified, gamblers can be referred to treatment facilities.

At the end of the third quarter in 2014, there were 12,584 slot machines inside casinos and Mochas (local brand name for venues hosting slot machines) in Macao. One effective responsible gambling strategy is to install a time limit alert on slot machine play. Kim et al. (2014) argue that simply setting a time limit through displaying a pop-up message on slot machines can effectively reduce the risk of problem gambling.

Notwithstanding the comprehensive nature of the responsible gambling principles, a careful review of the current common practices of the major casinos in Macao reveals that very few of these practices are observed by casino operators. Firstly, all casinos operate 24 h daily all year round. Except those self-excluded from entering the casinos, everyone over twenty-one are welcome. In many cases, the security officers do not check either the identity or age of patrons as they enter the casinos. Common responsible gambling measures in Australia such as reality

checks (clocks, signage of excessive wagering) have not been installed in the gaming halls. Gamblers can have easy access to loans as ATM facilities are always present in the casinos. All these point to the fact that the majority of the casino operators pay only lip service to responsible gambling in their daily business operations.

### 1.2.9.3 Casino Operators

The six casino operators in Macao, Companhia de Corridas de Cavalos de Macau, S.A.R.L. (澳門賽馬有限公司), and SLOT—Sociedade de Lotarias e Apostas Mútuas de Macau, Lda (澳門彩票有限公司) have incorporated responsible gambling measures into their operations.

Their Internet Web sites indicate that the casinos' managements have invested extensive efforts in responsible gambling. For instance, Web sites of Galaxy Entertainment Group (GEG, 銀河娛樂), Sands China Limited (金沙中國), City of Dreams Macau (新濠天地), and Altira Macau (新濠鋒) do mention responsible gambling but the details of content vary widely. SJM has donated money toward the establishment and operation of Yat On Center (逸安社), a local social service agency responsible for counseling problem gamblers, offering community education programs and seminars, organizing Certified Gambling Counseling (CGC) course, and crisis intervention. Sands China Limited has put efforts in promoting responsible gambling by organizing "Responsible Gaming Team Training Program" at the Venetian Macao every year since 2013. The target of the program is the casino's frontline staff. A two-day training program in August 2014, consisting of three training sessions, was conducted by Professor Bo J. Bernhard, Executive Director, University of Nevada, Las Vegas International Gaming Institute, and Professor Ka Chio Fong, Associate Professor in Gaming Management, Director of the Institute for the Study of Commercial Gaming, University of Macao. The focus of the training was on responsible gambling and casino management. New casino workers are required to participate compulsory responsible gambling training in their orientation program. In addition, Sands has donated funds to support counseling services and public education programs. GEG provides information on counseling services for the public to access in its Web site. It also lists symptoms of problem gambling and offers a few practical tips to control gambling. Both Sands and GEG have uploaded the information of self-exclusion onto their Web sites.

Overall, the responsible gambling strategies of the casinos in Macao are not as comprehensive and effective as their counterparts in Singapore, Las Vegas, Australia, and Canada. Huang, a prominent gambling researcher in Macao (2011), has argued that the gaming operators in Macao have not actively followed the principles of responsible gambling in their businesses.

### 1.2.9.4 Non-government Organizations (NGOs)

There are a number of non-government treatment centers in Macao. One of these institutions, Yat On Center, is funded by SJM. In addition to counseling problem gamblers, it also promotes responsible gambling to staff working in SJM. Further, the organization has reported a research study on responsible gambling of employees in local casinos (So and Kam 2014). The research entitled “Strengths and difficulties faced by employees in gaming industry who participate in responsible gaming” investigated the problems of casino staff in their work. The researchers interviewed 20 staff members of a casino on a semi-structured interview questionnaire (Fig. 1.9). The findings indicated that a number of participants believed their roles as dealers sometimes conflicted with the responsible gambling strategies as they had to encourage the gamblers to gamble. In this aspect, they did not see the management could provide sufficient support for their work. On this issue, the casino management should provide the workers a list of responsible gambling strategies.

### 1.2.10 *From the Gambling of Sins to the Gambling of Dreams—What Is Next?*

In this section, we have traced the history and development of gambling in Macao. At the macro-level, the development of the gaming industries can be delineated into

**Fig. 1.9** A semi-structured interview on the strengths and difficulties faced by employees in gaming industry who participated in responsible gambling (Source So and Kam 2014). Permission to reprint granted from the authors

[附件二 A]訪談問題目

逸安負責任博彩輔導中心  
“博彩從業員參與負責任博彩工作的困難與優勢”之研究

半結構式訪談題目

訪問題目

- 過去曾否有接受過負責任博彩培訓?  
答: ☐有 / ☐沒有, 註明培訓共\_\_\_\_\_小時, 培訓單位\_\_\_\_\_。
- 請略述您在擔當專員工作方面, 遇有較深刻的個案情境? (例如: 日期、時間、人物、地點、個案特徵、個案當時的神情等) 當時閣下是怎樣應對的? (如果是其他專員, 他們當時又會點應對? 您預先準備了什麼已協助自己更有效處理和應對個案?)  
答: \_\_\_\_\_
- 在履行負責任博彩專員這角色時, 曾遇到什麼困難或挑戰?  
答: \_\_\_\_\_
- 博彩從業員參與負責任博彩優勢是? 認為自己認識負責任博彩後, 對於社會有什麼貢獻呢?  
答: \_\_\_\_\_
- 您對於現時的負責任博彩工作有何建議?  
答: \_\_\_\_\_

three phases. The first phase, begun some 400 years ago, can be called the “Gangster Era” where small gambling houses, catering mainly to poor migrant workers, crammed onto the dirty sidewalks in the small colony. At that time, almost all of the gambling stalls were controlled by gangsters and the members of the criminal world. In addition to gambling, the gambling bosses often operated loan sharking and prostitution houses. The Portuguese government maintained little control over gambling activities. And there were no facilities for treatment and rehabilitation for problem gamblers. The second phase started in the mid-1930s when the Macao Portuguese Government imposed a licensing system, resulting in the first monopoly in the gaming industry. From that time onward, the gaming industry began to develop through private enterprise and investment. A substantial portion of the gaming profits was channeled to community interests and charities. This period witnessed the modern economic and social development of Macao. The dominant figure in this period was STDM and Dr. Stanley Ho. This period can be called the “Tycoon Era.” This era lasted until 2002 when the liberalization of the gaming industry transformed Macao into the “Monte Carlo of the Orient.” This third phase can wisely be termed the “Modern Era, or in the American genre, the NBA era.” This new gaming model, introduced by Las Vegas-based entrepreneurs, combines gaming, luxury resorts, and entertainment to attract patrons coming from different parts the world. The rapid development of the gaming industry brought prosperity to the local economy and astonishing income to the Macao SAR Government. As of the second quarter of 2012, over 52,000 Macao residents (i.e., about 1/7 of the working population) were employed in the gaming industry (Macau Gaming Industry Laborers Association 2013). A large proportion of fiscal revenue comes from the gaming industry. In 2013, Macao’s gaming-related taxes accounted for more than 85 % of total government revenue (Government of Macao Special Administrative Region Statistics and Census Service 2015).

The modern era does not see gambling as a sinful practice of gangsters and migrant workers—it is now an international business, much like the NBA in the USA. The economic and social structures of Macao are built on tourism and gambling. As long as commercial gambling is carried out responsibly and morally, it can offer hopes and dreams of a better livelihood for the 640,000 residents in this small enclave in the southern part of China.

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## Chapter 2

# The State of Gambling in Hong Kong and Macao

### 2.1 The State of Gambling in Hong Kong and Macao

Gambling is defined as “risking something of value on the unknown outcome of some future event..., the ultimate hope of gambling is to realize a value greater than that risked” (Aasved 2003, p. 3). The first recorded history of gambling in the Western world was found in Babylon in 1800 BC, while evidence of Chinese gambling had been reported in 4000 BC (McMillen 1996). Gambling has been a cultural pastime across all social classes in the history of China. And the games they played ranged from Chinese chess, dice, cricket fighting, horse racing, cock fighting, to mahjong (Zheng et al. 2008).

Gambling, by its nature, may not cause harm to individuals. Rather, research has demonstrated beneficial effects of recreational gambling among the elderly (Ohtsuka and Chan 2014). The benefits include a channel for social interaction and meaningful relationships. Further, many types of gambling, such as mahjong, are good cognitive games, where a player can guess the strategies of his/her opponents and assess and evaluate his/her wagering accordingly. Such cognitive maneuvers and decisions are especially good mental exercise for the elderly. No doubt, this is played among friends and relatives and is a widely accepted form of family entertainment in Chinese communities (Ohtsuka and Chan 2010).

Before we elaborate on the state of gambling in Macao and Hong Kong, we need to have clear definitions of the types and terminology of gambling.

#### 2.1.1 Types of Gambling

There are significant differences between disordered gambling and social gambling or recreational gambling as “...Disordered gamblers may be differentiated from social or recreational gamblers, and non-gamblers, in several ways. These

differences are observed across a number of dimensions: behavioral, cognitive, social, and neurobiological” (Richard and Humphrey 2014, p. 2). Individuals with disordered gambling usually play more frequently and with larger bets. When they lose money, it is very likely they will increase their bets and gamble with more money. This phenomenon is known as “chasing” and is very common among disordered gamblers (Chan 2014). Further, disordered gamblers have more cognitive distortions in gambling. For instance, they might have more superstitious beliefs than non-gamblers (Ohtsuka and Chan 2010). Disordered mahjong gamblers tend to hold superstitious beliefs, one commonly held superstition being that women during menstruation periods should not gamble as that would bring bad luck.

In the gambling research literature, a number of terms have been employed to describe the phenomena of disordered gambling. Such diverse terminology includes compulsive gambling, pathological gambling, disordered gambling, Level 2 and Level 3 gambling, at-risk gambling, problem gambling, and excessive gambling (National Research Council 1999; Petry 2004; Richard and Humphrey 2014; Schaffer et al. 1999). The term “pathological,” though favored by early researchers in the field (Custer and Milt 1985), carries a medical connotation. According to this perspective, pathological gambling involves a biological or hereditary origin. The label can, theoretically speaking, imply a maladaptive brain functioning that culminates in the decrease in impulse control of behavior—in this case, the control of gambling. On this issue, Blaszczynski and Tempel (2008) believe that the medical tradition might be attributable to the emphasis on biological components as determinants of gambling behavior. Thus, problem gambling is often interpreted as a “disease of the brain.” Such classification puts less emphasis on cognitive and behavioral influences on gambling behavior.

This biological view of problem gambling, however, is not shared by the majority of Australian and British researchers (e.g., Delfabbro 2012; Orford 2004; Walker 1992). A wider and generally accepted view has been proposed that “problem gambling” should be defined as the severe state of excessive gambling based on a continuum of gambling-related harm from non-gambler through at-risk gambler to problem gambler (Ferris and Wynne 2001). In Australia, the accepted scholarly definition of problem gambling describes problem gambling as “characterized by those who demonstrate significant difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others or for the community” (Neal et al. 2005). This definition explains problem gambling in terms of the personal characteristics and behavioral pattern as well as the consequences of gambling.

In the recent *Diagnostic and Statistical Manual 5th Edition* (American Psychiatric Association 2013), gambling disorder describes a person who has demonstrated four of the following nine symptoms:

1. A need to gamble with increased amounts of money in order to achieve same level of excitement;
2. Restlessness or irritability when attempting to cut down or stop gambling;

3. Repeated efforts to control, cut back, or stop gambling;
4. Often preoccupied with gambling;
5. Often gambles when feeling distressed;
6. Chasing one's losses—after losing money, returns the next day to win losses back;
7. Lying to conceal the extent of the gambling problem;
8. Has jeopardized or lost a significant relationship, job, or other opportunity (educational/career) because of gambling;
9. Relies on others (e.g., spouses, family, friends, colleagues, acquaintances) to provide money to relieve a desperate financial situation.

And the symptoms are not due to the conditions of a manic episode.

This classification differs from the previous one, the *Diagnostic and Statistical Manual of Mental Disorder 4th Edition, Text-revision (DSM-IV-TR)* (American Psychiatric Association 2000) in the following respects:

- (a) The term “pathological gambling” is replaced by the term “gambling disorder.” The revised terminology is less pejorative in describing the problems of the afflicted individual. Also, gambling disorder is moved from the “Impulse-Control Disorders not Elsewhere Classified” to a new category entitled “Addiction and Related Disorders.” The new classification reflects the etiology and the symptomatology of gambling disorder, which, in essence, corresponds more to a behavioral addiction, rather than an impulse control disorder (Petry 2006, 2010; Potenza 2006).
- (b) The symptom of the gambler committing illegal acts to finance his/her gambling is dropped. The decision was made as only a minority of disordered gamblers commit illegal acts to fund gambling activities (Richard and Humphrey 2014).
- (c) The symptom of “lying to conceal the extent of the gambling problem” does not specify the individuals to whom the disordered gambler lies. Rather, the current classification put the emphasis on the essence of lying as concealing the extent of involvement with gambling and the consequences it incurs on the interpersonal relationships of the gambler.
- (d) The current classification requires only four of the nine symptoms to warrant a diagnosis of disordered gambling. Individuals with 4–5 symptoms are clinically classified as having mild gambling disorders, 6–7 symptoms—moderate gambling disorders, and 8 or 9 symptoms—severe gambling disorders. Put in more succinct terms, DSM 5 (American Psychiatric Association 2013) describes pathological gambling in terms of the personality characteristics of the individual involved with the disorder and the consequences of gambling that have impacted him/her, his/her significant others, and/or the community.

Studies of the prevalence of gambling are important in the understanding of disordered or problem gambling as they give policy makers, treatment specialists, and researchers the extent of disordered gambling within a jurisdiction. In the USA, the first gambling prevalence study was reported from the University of Michigan

in 1975 (Kallick et al. 1979). This pioneer investigation sought to assess gambling behavior and attitudes toward gambling among the American people. The authors collected information from more than 1700 adults and found that 0.77 % of the respondents were “potential compulsive gamblers” (Commission on the Review of the National Policy Toward Gambling 1976). Since 1975, numerous studies have been performed in the USA (e.g., Volberg 1994b, c, 1998; Shaffer et al. 1999), in Australia (e.g., Delfabbro 2008), and in Britain (e.g., Wardlet al. 2007). Volberg and Williams (2014) have summarized a number of problems of and challenges to these studies. They are:

- (a) Differences in the problem gambling assessment instrument used, and the criteria and threshold applied to differentiate problem gambling within the same instrument;
- (b) Differences in time frames (e.g., lifetime, past year) employed to assess the presence and prevalence of problem gambling;
- (c) Differences in the methods of survey administration (face-to-face, telephone interviews, self-administered mail-out/mail-in surveys, self-administered online surveys); and
- (d) Differences in how the survey is described to potential participants prior to their decision to participate (i.e., “gambling survey,” “health and recreational activities,” and “gambling studies”).

The majority of these studies employed random sampling through telephone interviews. Very often, a computer-generated random sampling pool was drawn from the general population. The interviewers would then telephone the prospective participants. Though this approach has been criticized by a number of researchers (e.g., Chan 2014; Volberg 2002), interviewing through telephone has been the modal methodology in studying gambling prevalence.

### ***2.1.2 Prevalence Studies of Gambling Participation in Hong Kong and Macao***

Before discussing prevalence studies in Hong Kong and Macao, we begin this section with a brief history of prevalence studies among Chinese people. The earliest prevalence studies of problem gambling among Chinese people were recorded in the immigrant Chinese communities outside of China. In New South Wales, Australia, an early report suggested that out of a Chinese community of 3500, at least 700 or one-fifth were depending on the earnings of the gambling houses (New South Wales Royal Commission 1892). This figure is high but at present, it is difficult, if not impossible, to validate this prevalence rate. Nonetheless, this study indicates that gambling activities were very common in Chinese communities in Australia in the nineteenth century. These communities were mostly made up of Chinese immigrant laborers who first settled in Australia.

Very often, they were from poor rural villages in China, and they were “sold” to Australian mining and lumber companies by unscrupulous merchants in China. For them, without families and without hope for the future, gambling was the only social activity they could enjoy after a long day at work.

Sin (1996) reported the first scientific prevalence study on Chinese gambling in Montreal, Canada. The researcher interviewed the service users of the Chinese Family Service of Greater Montreal ( $N = 229$ ) and the Chinese restaurant workers in the province ( $N = 56$ ). This pioneer study showed a prevalence rate of pathological gamblers of 1.7 %. A more extensive study was reported in Australia, where Blaszczyński et al. (1998) conducted a prevalence study on the Chinese community in Sydney. In this investigation, the authors distributed questionnaires to students in a local Chinese school, who took the surveys to their parents. Over two thousand questionnaires were distributed. The response rate was 27 %. Over a quarter of the respondents reported being born overseas in Mainland China or in Hong Kong. Statistical analysis was performed on the returned questionnaires. Using the Chinese translation of South Oaks Gambling Scale (SOGS) (Leuseur and Blume 1987) as the screening assessment, this investigation found that 2.9 % of their Chinese samples were problem gamblers. More problem gamblers were found among males (4.3 %) than females (1.6 %). Respondents who reported a prior history of gambling in their countries of origin were more likely to develop gambling problems. More recently, Thomas (2000), in a report for the Victorian Casino and Gaming Authority, found that 10.7 % of Chinese in the sample were probable pathological gamblers. This relatively high rate may not be an accurate reflection of the current state of problem gambling among ethnic Chinese in Australia. One problem in this study is that the data were derived from a small convenience sample.

Zheng et al. (2008), in a prevalence of Chinese gambling, found that 2.9–3.8 % of a Chinese community sample in Australia could be classified as problem gamblers by the Canadian Problem Gambling Index (CPGI) (Ferris and Wynne 2001). Male participants and those aged 35 years and over were more likely to wager on mahjong. In Chinese communities, mahjong is an important part of social life and is widely accepted as a fun social activity (Ohtsuka and Chan 2010). Playing a game of mahjong during Chinese New Year is often not regarded as gambling. Chinese people use the Chinese verb “玩” or play rather than “賭” or gamble when they refer to mahjong playing. Mahjong gambling is especially popular among women. It is often shared and enjoyed by working-class housewives in the afternoons (Ohtsuka and Chan 2009). Superstitious beliefs in mahjong are linked to problem gambling (Ohtsuka and Chan 2010). Such superstitious beliefs include Feng Shui, beginner’s luck, unstoppable winning streaks, and specific phases of good and bad luck (Zheng et al. 2008). Table 2.1 summarizes prevalence studies of pathological gambling among overseas Chinese people.

Recently, Thomas et al. (2010) reported a comparative study on the prevalence rates among international students in a university setting in Australia. In this investigation, the authors collected data from 127 students from Western cultural backgrounds (54 males and 73 females), 131 Chinese students (48 males and 83

**Table 2.1** Prevalence studies of pathological gambling among overseas Chinese people (*Source* Chan et al. 2014)

Researchers (year)	Place and country	Samples	Prevalence of pathological gamblers (%)
Sin (1996)	Montreal, Canada	229 staff working in restaurants	1.7
Blaszczynski et al. (1998)	Sydney, Australia	About 548 participants, 1/4 came from Hong Kong or mainland China	2.9
Zheng et al. (2008)	Sydney, Australia	229	2.9–3.8

females), and 101 Indian students (77 males and 24 females). Among the participants, gambling problems were infrequently reported. No significant statistical differences were found on the prevalence rates of the three groups of students. However, while stressors were found to be clinically unrelated to gambling behaviors of Western students, they were significantly related to the gambling of Chinese and Indian students. Chinese students, when compared to the other groups of students, were more likely to experience academic and sociocultural stressors during their studies in Australia. Along this issue, the authors argue that stress and problem gambling appeared to be correlated together for the Chinese international students, who may employ gambling as a means to cope with stress.

**2.1.2.1 Scientific Prevalence Studies of Problem Gambling in Hong Kong**

The first major systematic investigation on the prevalence of gambling in Hong Kong was reported in 2002 (The Hong Kong Polytechnic University 2002). This research project, funded by the Hong Kong government, was carried out by a research group from the Hong Kong Polytechnic University. The study consisted of four parts:

- (a) In the first major phase of the study, random samplings of 2004 residents in Hong Kong were interviewed on the phone. The ages of the participants ranged from 15 to 64;
- (b) The second part of the study was a general survey of 2000 students on their gambling development and gambling behavior;
- (c) The third part was a qualitative investigation on twenty pathological gamblers and six family members of these gamblers. For comparison purposes, ten social gamblers were also interviewed; and
- (d) The fourth part was a detailed analysis and comparison of the study’s findings with related literature in gambling research.

This study found that 78 % of the sample had participated in gambling activities during the previous year. The most common form of gambling was Mark Six (64.2 %), social gambling (45.9 %), and horse racing (30.4 %). Using the criteria of DSM-IV (American Psychiatric Association 1994), 1.85 % of the participants could be considered “probable pathological gamblers.” The demographic profile of pathological gamblers was more likely to be “male,” “less educated (grade 9 or below),” and “have a monthly income of HK10,000 or above.” The most favorite games of the problem and pathological gamblers were horse racing gambling, soccer matches betting, and casino gambling.

In the student samples, 49.2 % of the respondents had participated in social gambling (gambling with friends and family during holidays and festivals) during the previous year. 19.4 % of them had brought Mark Six in the previous year. The young participants often did not consider Mark Six as a form of gambling. They tended to see these activities as their leisure and fun activities. Some of these youngsters had participated in sport gambling (soccer betting 5.7 % and betting on other ball games 3.9 %) and Internet betting (4.6 %). Overall, the prevalence rate of pathological gambling among underage students was found to be 2.6 %.

The qualitative study with the twenty pathological gamblers revealed some interesting features of the pathways development of problem gambling. Most of them came from a family environment that condoned or even encouraged gambling. Beginning in childhood, they started to take gambling as a culturally and socially accepted behavior. Very often, they reported having an early win that reinforced their development of gambling. As a group, these gamblers demonstrated a number of irrational beliefs and cognitive distortions. One good example is that many would frequently remember more about their winning experiences while forgetting about their losses. Further, they were likely to chase after their losses to maintain their level of excitement in gambling. These participants had significant problems in the areas of at work and in their relationships. Many of them borrowed money from relatives and friends and financial agencies. The reported debts ranged from \$20,000 to \$3,000,000. In addition to financial difficulties, these gamblers reported having psychiatric complications such as clinical depression and anxiety.

In 2005, researchers in the Social Services Centre of the University of Hong Kong launched a follow-up prevalence study on the gambling behavior of Hong Kong people (The University of Hong Kong 2005). This study consisted of three parts:

- (a) 2093 individuals, aged between 15 and 64, were randomly recruited in the Hong Kong community. They were interviewed on the telephone on a structured interview that covered their demographic details and gambling behaviors. The interview also included an assessment on their gambling involvement and problems according to the Diagnostic and Statistical Manual, 4th edition (DSM-IV) (American Psychiatric Association 1994);
- (b) 2095 students from secondary schools and institutes of the Hong Kong Vocational Council were recruited. They were also assessed with questionnaires that measured their gambling behavior and problems; and

- (c) Five focus group discussions with each group inviting different stakeholders of gambling, namely pathological gamblers; family members of the pathological gamblers; social gamblers; youths (aged 18–24); and students (aged 18 or below). In these groups, the discussion sought to understand the participants' views and perspectives on gambling, treatment, and therapy.

Overall, this study yield findings similar to those of the 2001 study. Among the participants, 81.1 % of the respondents participated in some form of gambling (78 % in 2001) during the previous year. The participation rate in horse race betting decreased from 30.4 % in 2001 to 25.5 % in 2005. Participation in illegal gambling activities decreased from 4.2 % in 2001 to 2.1 % in 2005. The researcher speculates such a drastic decrease was due to the legalization of soccer betting in 2003. Their argument is that the bettors could now wager legally on the international soccer games through the Hong Kong Jockey Club (HKJC). In this investigation, 16.3 % of the respondents participated in football betting with the HKJC. The prevalence rates for pathological gamblers and problem gamblers were 2.2 and 3.1 %, respectively (the corresponding figures in the 2001 study were 1.8 and 4 % in 2001). The most preferred games of these gamblers were horse racing, football betting, casino gambling, and social gambling.

Underage gambling is a serious concern for the policy makers. The interviews with youths aged 12–17 showed that 29.8 % had participated in some form of gambling activities. There was a significant drop in participation rate for Mark Six and horse race betting with the HKJC among secondary students (from 19.4 % in Mark Six and 9.2 % in horse racing in 2001 to 15 and 4.4 %, respectively). Among the youths, “killing time,” “curiosity,” and “trying my luck” were cited as the main motivation for their gambling. Using DSM-IV as the assessment tool, the rates of probable pathological gamblers and probable problem gamblers were both 1.3 % (compared to 2.6 and 4.5 %, respectively in 2001).

The most recent prevalence study was performed by researchers at the Hong Kong Polytechnic University (2011). In this study, 2024 respondents were interviewed through a random digitized dialing technique.

The major findings were as follows:

1. 62 % of the respondents took part in gambling activities in the previous year.
2. Mark Six was the most popular gambling activity among the participants. Other favorite games were social gambling (mahjong and card games), horse racing, casino games in Macao and football betting.
3. 0.3 % of the respondents participated in illegal gambling activities in the previous year.
4. The prevalence rates of probable problem and probable pathological gamblers were 1.9 and 1.4 %, respectively.

Table 2.2 summarizes prevalence studies of pathological gambling in Hong Kong. Based on the findings of these investigations, there has been a decrease of pathological gamblers in Hong Kong. A similar trend has been reported in research in the USA, Canada, and Australia (Williams et al. 2012). Williams and his



**Table 2.2** Prevalence studies of pathological gambling in Hong Kong (*Source* Chan et al. 2014)

Researchers (years)	Samples	Prevalence of pathological gamblers (%)
The Hong Kong Polytechnic University (2011)	2004	1.4
The University of Hong Kong (2005)	2093	2.2
The Hong Kong Polytechnic University (2002)	2004	1.85

colleagues (2012) attribute the decrease to a number of possible reasons. Firstly, with the increased gambling accessibility and availability in the jurisdictions under study over the last two decades, the general public has begun to adapt to the new gambling opportunities over time. On this issue, the authors attempted to analyze disordered gambling from a public health model (Shaffer et al. 2004). According to this model, an environment facilitating the availability and accessibility of gambling increases the individual’s tendencies to engage in potentially addictive gambling behaviors. Initially, the exposure to gambling cues can increase the probability of gambling behavior of an individual. The exposure of environmental cues includes the presence of casinos, horse racing, and soccer betting in the community. This factor plus the vulnerability (genetic, personality, and emotional) of the individual can raise the likelihood of gambling of the person and thus the overall prevalence of problem gambling in the community. However, the further increment of the prevalence in disordered gambling can be compromised by the increase of the public awareness on the adverse effects of gambling as well as the community’s investment in more efforts in responsible gambling, harm minimization strategies, and treatment facilities. Consequently, adaptation to these threats of public health sets in as the initial effects of the environmental toxins, or in this case, gambling, can be subsequently moderated by an adaptive process. Eventually, the prevalence of disordered gambling would be reduced. The phenomenon of initial increase in the prevalence of pathological gambling in the early 2000s, followed by the subsequent decrease of the prevalence rate in Hong Kong, Macao, and several other Western countries are consistent with the theories of exposure and adaptation in gambling.

2.1.2.2 Studies on Vulnerable Groups

Studies on the characteristics of problem gamblers have been carried out by agencies serving this clientele. The Caritas Addicted Gamblers Counseling Centre (2015), for example, has reported a quantitative study on the characteristics of their clients. They analyzed demographic details of their service users (*N* = 4893, 85.6 % were male) between the period October 15, 2003, and November 30, 2015. All of the participants were problem or pathological gamblers. The majority were males. Over 80 % of them had educational level of secondary school or above. The most serious gamblers were from the age groups of 30–39 (30.3 %) and 40–49

(30.5 %), respectively. About 70 % of the problem or pathological gamblers had gambled 10 years or more. Over 85 % of them were in debt. Horse racing (61.0 %), football betting (54.7 %), and casino (53.8 %) were the three most favorite types of gambling among interviewees. 50 % of them had incomes ranging from HK\$5000 to \$15,000 per month. 40.6 % of them worked in the servicing industries or sectors. Examples were workers in hotels and restaurants. Among the more than 4800 problem or pathological gamblers, 57.2 % of them were married, and 67.1 % had comorbid family problems. However, this study failed to give a more detailed personality portrayal of the gamblers who sought treatment at the organization.

Prevalence studies on a comparatively smaller scale were reported from community services centers. For example, Tang et al. (2007) interviewed the service clients from two gambling treatment centers in Hong Kong. A total of 952 (841 men and 111 women) were interviewed in the investigation. As a group, female gamblers enjoyed casino and mahjong gambling, while male gamblers preferred wagering on horse racing and on soccer games. The authors explain the gender differences to the particular economic and social conditions of the female gamblers. About two-thirds of the female interviewees were either non-employed or full-time homemakers. The researchers speculate that gambling can offer them an opportunity for decision making and control (Herman 1967) and an access to economic independence, and recreation and social contact with the community. For these gamblers, gambling might serve as a form of dissociation and escape from emotional problems (Chan et al. 2012; Pierce et al. 1997).

## Youths

Studies specifically on youth gambling have been reported in Hong Kong. For instance, a research group at the Chinese University of Hong Kong reported a study entitled, “A survey on gambling behaviours” in 2006. From a sample of 500 participants recruited in the community, about 70 % had engaged in various gambling activities. The most popular forms of gambling were Mark Six, football betting, and casino gambling. The major motivation for their gambling is monetary—most believed that they could get rich through gambling. Others cited socialization with friends and fun and enjoyment as their main motivation for participation of gambling activities. This study has a number of methodological problems. Firstly, the participants were not randomly recruited from the community. Secondly, there is a lack of in-depth enquiry and measurement on the personality and the personality of the interviewees.

A more scientific investigation has been reported by Wong (2010) who undertook a survey of 1001 students, aged between 12 and 17 (boys: 55 %, girls: 45 %). The participants were recruited from a list of 10 randomly selected high schools in Hong Kong. In this study, the respondents filled out a questionnaire that assessed their gambling history and involvement, the Diagnostic and Statistical Manual (4th edition) Multiple Format for Juveniles (DSM4-MR-J) (Fisher 2000) and the 12-item General Health Questionnaire of Goldberg (1972). The findings indicated that 60 %

of the students had participated in gambling activities in the previous year. The prevalence rate of probable pathological gamblers and probable problem gamblers were 3.4 and 1.8 %, respectively. The rate of pathological gambling is significantly higher than that of the previous major prevalence studies (The Hong Kong Polytechnic University 2002; The University of Hong Kong 2005). The majority of the probable pathological gamblers (78 %) started gambling before the age of 15. Statistical analysis on the collected data showed that pathological and problem gambling were significantly correlated with age (with older adolescents being more vulnerable), gender (boys being more vulnerable), and parents and/or peers with gambling problems. Lastly, the adolescents with gambling problems were more likely to report psychiatric and emotional disturbances such as depressed moods, sleeping problems, and the loss of concentration at work.

Recently, Hsu et al. (2014) reported a prevalence study of 926 high school students (471 boys and 455 girls), aged 12–20 ( $M = 14.73$ ). The participants were asked to fill out an inventory of questionnaires that include as assessment on their gambling behavior and history, the 21-item Depression, Anxiety and Stress Scale (DASS) (Lovibond and Lovibond 1995), the 20-item Perceived Social Support-Family Inventory (Proccidano and Heller 1983), and the Diagnostic and Statistical Manual (4th edition) Multiple Format for Juveniles (DSM4-MR-J) (Fisher 2000). The collected data indicated that, among the participants, 0.9 % could be classified as probable pathological gamblers and 3.3 % could be classified as at-risk gamblers. For those youths with parents with significant gambling problems, they scored significantly higher on the DASS. The authors argue that parental problem gambling may cause emotional and even psychiatric problems among their children. One interesting finding of this study is that there was a significant decrease of the pathological gambling among youths in Hong Kong. Such a decrease parallels the decrease of adult pathological gamblers in the community (The Hong Kong Polytechnic University 2011). As we have pointed out earlier in this chapter, the assertions of Williams, Volberg, and Stevens (2012) may be applicable in explaining the recent drop in the rate of pathological gambling among young people.

### Elderly

Studies targeting the elderly, another vulnerable group of problem gamblers, have also been reported in Hong Kong. Ohtsuka and Chan (2014) investigated the significance of gambling among senior gamblers in Hong Kong. In their study, semi-structured interviews based on an ethnographic approach were used. 18 senior gamblers (10 men, 8 women) over the age of 55 years were asked to describe their childhood, adolescence, early adult experiences, developmental history of gambling, and gambling trajectories. They also completed the Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (Ferris and Wayne 2001). The results showed that most senior gamblers ( $N = 15$ ) were non-problem gamblers, except 3 participants who were classified as pathological gamblers (PGSI

scores  $\geq 8$ ). The majority of the senior gamblers began their lifelong gambling career when they were young. Some participants reported that an early big win was a focal memorable experience in their early gambling history. Women played mahjong most frequently, whereas men gambled on horse races and sports betting such as football lotteries. The main motivation of gambling for older adult women was socializing with friends, whereas older adult men were motivated to gamble because of potential financial gain. To senior women, games of mahjong with friends provided an oasis and comfort zone within which they can find peace and comfort away from the bustle of daily life. In this study, the authors argue that gambling provides the participants with a dissociation from daily hassles and frustration in life (Brown 2002) and a social space, where they find friends and peers sharing the same language and activities. Overall, their gambling problems are not as extensive and severe as that of casino gamblers in Macao (Chan and Ohtsuka 2013), or that of the treatment seeking problem gamblers in the Gamblers' Anonymous in Hong Kong (Chan and Ohtsuka 2011b). Through participation in social gambling in the neighborhood, these senior gamblers in Hong Kong find existential meaning during retirement years.

Similar results of senior gambling were also reported in a qualitative study of Li et al. (2012), who sought to understand the prevalence rate of recreational gambling and its meanings among the elderly in Hong Kong. Twenty-five participants, all over 55, were interviewed with a semi-structured questionnaire which covered their developmental history and gambling career. The results demonstrated that the majority of the participants began gambling at an early age with influences from their family members. Some experienced early big wins in their gambling history. Almost all of the participants took gambling as a type of fun game development into their adult years. Similar to the findings of Ohtsuka and Chan (2014), there were significant gender differences in gambling. Women gamblers enjoyed mahjong while male gamblers favored skill-orientated games such as horse racing and football betting. Female gamblers tended to employ gambling as a means of socializing and/or killing time (Ohtsuka and Chan 2009) while male gamblers often took gambling as a vehicle for attaining personal riches and achievement (Chan and Ohtsuka 2011a).

### Casino Croupiers in Macao

Casino workers (especially croupiers) are particularly vulnerable to problem gambling. Wu et al. (2008) found that 7 % of Chinese casino workers in Macao were problem or pathological gamblers. This high rate may indicate that working in casino is a high-risk factor for problem gambling. Hing and Breen (2008) stated that casino workers might have a higher risk of exposure to unhealthy lifestyles such as excessive drinking, smoking, and gambling as compared with employees from other occupations. Hu et al. (2013) studied the correlations of work conditions with gambling behaviors of casino croupiers in Macao. 1042 casino workers from three gaming concessionaires participated in the study. The sample size was roughly

equal to 5 % of total number of croupiers in Macao in 2012. The results showed that 14 % of participants gambled at least 1–2 times a week. 12.7 and 14.9 % of croupiers in this study had significant financial problems and family/interpersonal conflicts due to gambling. The overall rate of probable problem gambling is 14 % which is higher than the 7 % found by Wu and Wong (2008) and 5 % reported by Fong and Ozorio (2005). However, it might not be appropriate to draw the conclusion that croupiers are more vulnerable to problem gambling due to different screening methods of the studies. Nonetheless, the relatively high rate of probable problem gambling among croupiers warrants special attention from the policy makers and casino management in Macao.

Summing up, prevalence studies in Hong Kong indicate that the rate of problem gambling, though lowered in recent years, is high according to international standards. The prevalence rates of pathological gambling are 0.6 % (Delfabbro 2012) in Australia and 0.8 % in the USA (Williams et al. 2012). In Hong Kong, the risk factors for problem gambling is being male, having an income more than HK \$10,000 (US\$1260) a month, and achieving only a secondary level of education. The gambler's games of choice are often horse racing, soccer betting, and casino games. Many a time, these gamblers come from a family and/or community that encourage gambling. They begin gambling at a younger age and often have an early win in their gambling development. Their gambling habits may last for years before they achieve some insight into their problems. However, the majority of them do not seek psychological treatment from professionals. And if they do, they often enter group counseling organized by social service groups. The most important factor for rehabilitation of these gamblers is the presence of family support and care.

### ***2.1.3 Prevalence Studies of Problem Gambling in Macao***

Macao, a Special Administrative Region of the Chinese Government, lies some 60 km southwest of Hong Kong. Ferries connect Hong Kong and Macao daily. The journey usually takes about one hour. Though being separate jurisdictions in the People Republic of China, Hong Kong and Macao share the same Chinese heritage and traditions. Macao was previously a Portuguese Colony. China, during the Ching Dynasty, ceded the small island to Portugal. As a colony, Portugal has transformed the small island (total area: 29.2 square kilometers) into a modern city with a Western-style educational system and democracy. The Portuguese government appointed Portuguese governors to run the local government though the majority of the government civil servants were from the local Chinese community. At present, over 90 % of the local residents are Chinese.

On December 20, 1999, the Portuguese government returned sovereignty of Macao to the People's Republic of China (PRC) under a joint treaty between the two countries. Most people in Macao welcomed the change of sovereignty. Macao is currently a special administrative region of the PRC. It has its own autonomous government and publicly elected legislature.

The first casino monopoly was granted to the Tai Xing company in 1937. In 1962, a territory-wide monopoly was given to STDm, a company headed by Dr. Stanley Ho. The company introduced western-style gambling, including casinos, greyhound racing, horse racing, and sports betting into Macao. As of December 2015, there are 36 casinos in Macao. American companies such as Las Vegas Sands have invested in a number of integrated resorts in Macao. While gaming facilities are the major source of revenue for these resorts, the facilities also include hotel facilities, luxury shops, conference rooms, exhibition areas, concert halls, and elegant dining facilities.

The first prevalence study of gambling in Macao was reported by researchers at the University of Macau. Fong and Ozorio (2005) interviewed 1121 participants over the telephones, who were randomly recruited in the Macao community. Results indicated that about two-thirds of the respondents had gambled within the previous year. The three most popular forms of gambling were social gambling, Mark Six, and soccer/basketball betting. Using the DSM-IV-TR (American Psychiatric Association 2000) as the screening tool, 1.78 % of the respondents were classified as probable pathological gamblers and 2.5 % were considered probable problem gamblers. Male respondents with a monthly personal income of less than MOP 8000 (roughly equivalent to US\$1000) were more vulnerable to problem gambling. There were significant gender differences in gambling. Men had significantly more involvement in gambling activities than women. About half of male respondents admitted that they had participated in social gambling in the past year while only 38.5 % of the female participants admitted participation in gambling activities in the previous year. The overwhelming majority (73.1 %) of respondents perceived social gambling as a form of entertainment.

The most popular types of gambling among Macao residents were social gambling (e.g., mahjong, 43.8 %), Mark Six (38.7 %), sports betting (21.9 %), and casino (21.2 %). Gambling preference was a bit different among problem gamblers ( $N = 108$ ) who sought help from the center. 68 % of them participated in casino gambling, 32 % played sports betting, and 31 % preferred Mark Six and mocha (local name for centers with electronic gaming machines). In terms of gender difference, male problem gamblers preferred casinos (72 %), mocha (33 %), and social gambling (e.g., mahjong, 29 %) whereas female problem gamblers preferred casinos (50 %), mocha (22 %), and Mark Six (21 %).

In 2008, So and Cheng of the Industrial Evangelistic Fellowship of Macao reported a study entitled "Rehabilitation for Problem Gamblers." In this study, quantitative analysis was performed on the treatment clientele of the agency. There were a total of 108 problem gamblers who sought help at the center. Among them, 75 % were men. 41 % of problem gamblers completed secondary school. On average, their first bet was at age 21. Their average monthly income was MOP 10,500, but the mean monthly expenditure of gambling was MOP 9120. Almost all the problem gamblers were in debt, with average debts totaling MOP 220,000.

In 2010, another prevalence study was undertaken by the researchers in the University of Macao (Fung and Ng 2010). In a random survey of 2011 local residents between age 15 and 64, individuals assessed to be potential pathological

gamblers amounted to 2.8 % of respondents, according to the Diagnostic and Statistical Manual 4th edition, text-revision (DSM-IV-TR) (American Psychiatric Association 2000).

The latest research on gambling participation of the residents of Macao was undertaken by the Social Welfare Bureau of the Macao Government (Social Welfare Bureau, Macao SAR Government 2013; University of Macao 2014). In a random telephone survey of 2158 Macao residents between 15 and 64 years of age, individuals assessed to be probable pathological gamblers were at 0.9 % (compared to 2.8 % in 2010) and 1.9 % (compared to 2.8 % in 2010) could be classified as probable problem gamblers. Macao residents' gambling participation rate in 2013 was 49.5 %, which was lower than the results of 2010 (55.9 %) and 2007 (59.2 %). Both the monthly median gambling spending and monthly average gambling spending had decreased compared to those of previous studies. The monthly average gambling spent decreased from MOP 755 in 2010 to MOP 505 in 2013. When asked about their motivation to gamble, the main reason cited by people taking part in gambling activities was "entertainment." Compared to the 2010 survey, the participation rate of all gambling activities reported by the participants in this survey decreased. Further, the data indicated that "Mark Six" (33.1 %), "social gambling" (21.7 %), "Macao casino" (11.9 %), "slot machines" (7.2 %), and "soccer/basketball matches betting" (4.5 %) were the five most popular forms of gambling activities. The average monthly gambling spending at casinos was the highest (MOP 238) among the top-five gambling activities mentioned above, 8 times higher than that of the lowest choice "Mark Six lottery" (MOP 29). Detailed analysis of the responses of the participants indicates that people who were "employed," "married," "higher income earners" were more likely to participate in the "Mark Six" activities. Second, people who were "male," "born in Macao," "employed," and "monthly earned between MOP 35,000–50,000" were more likely to take part in "social gambling." Third, people who were "male," "elders," "married," "low levels of education," "the group of technician," and "immigrants" were more likely to participate in "Macao Casino" activities. Fourth, people who were "married," "between 55 and 64 years old," and "unemployed" were more likely to participate in the "slot machine" activities. And lastly, people who were "male," "employed," and "shift workers" were more likely to participate in "soccer/basketball match betting." "Casino gambling" was the most frequent gambling activity for probable pathological gamblers in 2013.

In 2014, Yat On Center reported a study of soccer betting among Macao's college students (Kam and Wong 2014). In this study, there were 880 participants recruited from universities in Macao. 39.8 % of participants had bet on soccer matches in the preceding 12 months. 25 % of them bet 1–2 times a week. The main reasons for participating in soccer betting included entertainment (15.5 %), kill time (12.65), and peer influences (12.3 %). For those who reported they would bet during World Cup 2014, 15 % of them aimed at making more money. Significant positive correlation was found between severity of problem and sensation seeking ( $r = 0.615, p < 0.01$ ). 10 of the participants could be classified as problem gamblers according to the PGSI (Ferris and Wynne 2001) ( $PGSI \geq 8$ ). About 90 % of



moderate and high-risk gamblers were male. 84.6 % of participants were regarded as high sensation seekers according to the Brief Sensation Seeking Scale (BSSS) (Arnett 1994). The researchers concluded that the gambling problems among young people are very severe.

### ***2.1.4 Prevalence Studies of Problem Gambling in Western Countries***

Table 2.3 illustrates the prevalence rates of pathological gambling in several Western countries. For comparison, the lifetime prevalence rate of pathological gambling in the USA in the same period ranges from 0.4 to 0.6 % (Petry et al. 2005; Slutske 2006). The estimate for Germany is 0.5 % (Queri et al. 2007). The prevalence rates for problem gambling are 0.5 to 1 % in most jurisdictions in Australia and New Zealand (Delfabbro 2012). Hence, the prevalence of problem gambling is much higher in Hong Kong and Macao than in Western countries.

## **2.2 Limitations and Conclusions**

Despite the extensive scope, prevalence studies in Hong Kong and Macao have a number of limitations. Firstly, most of the studies relied mainly on telephone interviews. It is difficult, if not impossible, to validate data from telephone interviews (Volberg 2002). In the Chinese culture, it is a social disgrace to tell others about one's gambling problems. This explains the low response rates for the majority of these studies. For example, the 2005 prevalence study in Hong Kong attempted to contact 17,654 individuals by telephone. The refusal rate for response was high. The number of successfully completed interviews was 2093. There were 709 refusal cases and 1 incomplete interview (<0.1 %). However, the study reported that 3656 respondents were unavailable for interviews, 291 calls received a busy tone, and 3818 calls went unanswered. The authors of the study concluded that the overall response rate to be 74.7 % as the study excludes all the refusal and unavailable calls from the statistical analysis. This researchers' decision may have inflated the overall response rate. If all these calls were to be included, the actual response rate would be only 11.8 %.

Secondly, many prevalence studies relied on part-time student callers, who were paid by the hour and/or number of calls they achieved. Very few of them have received training in psychology and counseling. It may not be appropriate and ethically appropriate for them to diagnose the respondents of having a gambling problem. Thus, the authors of this writing have serious doubts about the reliability and validity of the collected data.



**Table 2.3** The prevalence rates of pathological gambling in several Eastern and Western countries (*Sources* Chan et al. 2014; Winslow 2015)

Researchers (year)	Country	Samples	Prevalence of pathological gamblers	Risk factors of pathological gambling
National Centre For Social Research (2011)	United Kingdom	7748	0.7 % (PGSI), 0.9 % (DSM-IV)	1. Men 2. Single 3. Parents were problem gamblers 4. Low income
Buth and Stöver (2008)	Germany	7980 (by telephone: 3999; online: 3981)	0.56 %	1. Male 2. Young adults 3. Family members had gambling problems 4. With multiple gambling activities
Brodbeck et al. (2007)	Switzerland	6385	0.3 %	1. Male 2. Age 35–49
Cox (2005)	Canada	35,770 (27,185 completed the survey)	2.0 %	1. Male 2. Low educational level 3. Low income 4. Elderly living alone
NESARC (2002), Petry et al. (2005)	USA	43,093	0.4–0.6 %	1. Male 2. Being African American 3. Divorced/separated/widowed 4. Middle age 5. Comorbid with alcohol use disorder, nicotine dependence, and other psychiatric disorders
Winslow et al. (2015)	Singapore	3000	0.2 %	1. Male 2. Chinese 3. Age: 40–49, and age 60 or above 4. A monthly income of \$1000–1999 and \$3000–3999 5. Low educational level or illiterate
Williams et al. (2013)	South Korea	4000 (by telephone, 17.0 % completed) plus 4330 (online survey, 20.2 % completed)	0.5 % (past year prevalence)	1. Male 2. Alcohol/tobacco users 3. Comorbid with substance abuse

A good example is a study on the prevalence of gambling reported by The Breakthrough, a Christian group offering community services for young people in Hong Kong. In the last decade, The Breakthrough launched a number of small scale

studies on gambling and youth and family issues (e.g., “Breakthrough research projects,” 2008). Most of the research projects employed telephone or face-to-face interviews. Very often, the instruments and the questionnaires of these studies were constructed by the researchers and lacked clinical validation. These participants were mostly recruited through convenience sampling. For instance, in a project on gambling and family, participants were asked to describe themselves using categorical ratings such as “very weak,” “weak,” “comparatively strong,” or “strong.” The researcher did not provide the definitive criteria for each category. This can generate serious validity problems for the findings as the respondents might have different concepts or qualifications of these criteria.

Thirdly, many of these research projects aimed to study the personality and behavioral characteristics of gambling. An appropriate and scientific psychological assessment would entail the expertise of a clinical psychologist who needs to spend at least two hours in the assessment of each participant. To date, none of the prevalence studies undertaken in Hong Kong and Macao have employed psychologists to work on these intensive interviews. Thus, there are significant doubts on the validity on their assertions on the clinical and psychological perspectives of problem gamblers.

In-depth qualitative studies on Chinese gamblers are very few in Hong Kong and Macao. Cheng (2006), for example, interviewed eight female gamblers for her master’s thesis in social work. Her findings indicated that female pathological gamblers often started gambling later than men did, gambled mostly out of boredom and depression, and often suffered emotional and financial difficulties from their gambling. When compared to male gamblers, women gamblers gambled with less money. Many participants of the study would not seek help voluntarily. If they did enter treatment, factors contributing to successful rehabilitation of these gamblers were positive peer interaction, improvement in psychological health and supportive counseling from others. One problem of this research project, however, is the absence of in-depth exploration of the participants’ personalities. The participants were interviewed on a standard set of questionnaires, which included only the assessment of demographic data, questions on the subject’s gambling behavior, and the consequences of gambling.

Lam (2004) studied 21 casino gamblers as a part of her graduate studies. One major finding is that almost all respondents ( $N = 19$ ) had experienced at least one big winning episode or witnessing others won a large sum of money at an early stage of their gambling development. Thus, an early win, either by direct personal experience or by observational learning, had a decisive factor on the development on gambling behavior of these gamblers. In this investigation, the majority of the gamblers had little motivation to abstain from gambling. This qualitative project, however, has a number of problems. Firstly, most of the participants (about 70 %) were ex-convicts, who were recruited from counseling agencies for released prisoners. And, secondly, the researcher did not employ psychological testing to explore the personality traits of the problem gamblers. In-depth understanding of the problem gamblers’ subjective world and their personality dynamics are missing in the analysis.

In view of this research gap, Chan and Ohtsuka (2013) carried out a qualitative study on the personality and social development of fifteen active gamblers in the casinos of Macao. Eleven of these gamblers were found to be pathological gamblers according to the DSM-IV-TR (American Psychiatric Association 2000). All the participants were clinically assessed by an experienced clinical psychologist. Results indicated that the problem gamblers have significant deficits in impulse control, which resulted in frequent chasing of losses, preoccupation with gambling, and the failure to pursue a law-abiding lifestyle. Further, most of the pathological gamblers showed a general lack of adequate moral development. These gamblers often lack the motivation to seek psychological treatment.

Summing up, the majority of prevalence studies in Hong Kong and Macao mostly serve the purpose of counting the numbers of problem gamblers in Hong Kong, while neglecting in-depth psychological analysis of the gamblers. Further, few studies have investigated the subjective world of the gamblers, their defense mechanisms in the face of stress resulting from gambling, their responses to treatment, and the psychological analysis of their pathways development.

## 2.3 Conclusion

We have outlined the state of prevalence studies on gambling participation in Hong Kong and Macao in this chapter. When compared to other countries, the prevalence rates in Hong Kong and Macao are higher than USA, Australia, and most European countries. One reason is that commercial gambling is more available and accessible in Hong Kong and Macao. Also, social and recreational gambling is often accepted as a family activity during festivals and gatherings. The major limitation of the majority of the prevalence studies is that the data were often obtained by telephone interviews and by personnel with little training in social work and psychology. In order to have a better understanding of the problem gamblers in these two jurisdictions, future prevalence studies should include qualitative interviews and testing performed by qualified psychologists. These interviews can provide a more complete picture on the personality structure and the subjective worlds of individual gamblers. In the next chapter, we will turn to the literature on the personalities of problem gamblers.

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## Chapter 3

# The Personality of Problem Gamblers in Hong Kong and Macao

In this chapter, we critically present recent findings on the personality of disordered gamblers in Hong Kong and Macao. Personality traits can be defined as a highly organized, enduring set of characteristics regarding the ways in which a person perceives and relates to the self, others, and the environment (Cattell 1943). We first begin with a discussion of the commonly found personality characteristics of problem gamblers. Then, we introduce a model of personality traits and how these traits describe and distinguish disordered gamblers in Hong Kong and Macao.

### 3.1 The Addictive Personality

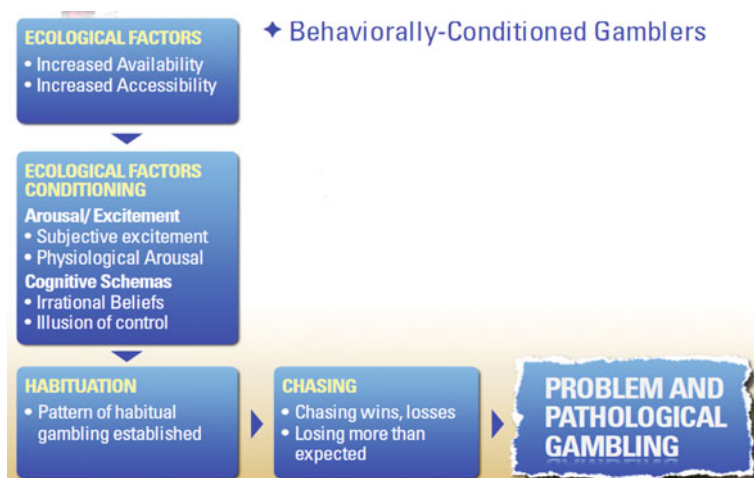
Lang (1983) proposes the concept of the addictive personality. In his conceptualization, some individuals are genetically prone to addictive behaviors, such as shopping, exercise, and gambling. This concept may have an intuitive appeal in explaining the high similarities among different addictive behaviors though scientific studies validating such proposition have been very few (Petry 2005b). Common psychological characteristics of persons with addictive problems include being introverted and impulsive, and enjoying solitary pursuits to ward off personal psychological discomforts. Proponents of this model suggest that these individuals would be more prone to addictive disorders due to such inborn characteristics. Thus, rather than pointing to the availability, accessibility, and the general social acceptability of gambling opportunities of the environment that predispose an innocent person to gamble, the model places the origins of addictive disorders on the person who by genetic disposition would actively seek out gambling opportunities in the environment. In this regard, this paradigm is deterministic in essence as it links one's gambling behavior to one's genetic heritage. Notwithstanding the general appeal of this theory, there has been little substantiated empirical evidence



supporting one general personality style that underlies all types of addictions (Myrseth 2011). Further, the model neglects the personal choices and cognitive decisions of the person who executes the gambling behavior. Along this vein of thought, Blaszczynski and Tempel (2008), in his seminal speech in the National Association of Gambling Studies, argued that the individual should have control of his/her gambling behavior and decisions. Thus, the hypothesis that links a specified personality style to gambling behavior might not be empirically valid and scientific.

### 3.2 Blaszczynski and Nower's Pathway Model (2002)

Research in personality and gambling suggests that there are multiple groups of addictive personality factors which may be associated with disordered gambling (Zuckerman 1999; Petry 2005b). Such personality characteristics include antisocial personality and mood disturbances such as anxiety and depression. However, studies addressing a general personality profile of gamblers are inconclusive (Álvarez-Moya et al. 2007). One major reason is the heterogeneous nature of the etiology and personality characteristics of disordered gamblers (Blaszczynski and Nower 2002). Blaszczynski and Nower's (BN) (2002) pathway model of problem and pathological gambling recognizes the diversity within the problem gambling population and addresses the development process of problem gambling and the influences of the genetic, biological, personality, social, and cultural factors. One fundamental principle of this model is that the pathways to pathological gambling consist of three different groups of gamblers, each with different etiological origins, behavioral manifestations, and treatment needs and concerns. The three A's of gambling opportunities, namely the accessibility, availability, and acceptability of gambling opportunities, are crucial to the development of gambling. These three groups of gamblers often come from families and/or peer environment that accepts or even encourages gambling. Usually, they describe these gambling experiences as positive. An early win is frequently reported from these gamblers. With continued involvement in gambling, classical and operant conditioning effects (Delfabbro 2014; Skinner 1948) help in the further development and maintenance of gambling. The three groups of pathological gamblers differ in their personality, their emotional states, and coping styles. The first group is called behaviorally conditioned gamblers, who are relatively free of psychopathology prior to the acquisition of gambling habits. This group of gamblers usually has a stable career and relationship development before they gamble excessively. Clinically speaking, they were not psychologically maladjusted individuals. However, with repeated and prolonged exposure to gambling activities, symptoms of disordered gambling may surface. These symptoms include a preoccupation with gambling, depressive and anxiety moods, chasing over losses, relationship problems in the family and at work, insomnia, and financial problems. Hence, their emotional or even psychiatric problems are the consequences of their problem gambling behavior (Fig. 3.1).



**Fig. 3.1** Pathway 1: behaviorally conditioned gamblers (*Source* Blaszczynski and Nower 2002). Permission to use the model granted by the Professor Blaszczynski

In contrast, the second group is composed of gamblers who have significant developmental and emotional problems prior to their gambling experiences. This group, termed emotionally vulnerable gamblers, tends to employ gambling as a means of modifying mood states. Their conditions are best described by Jacobs' (1986) general theory of addiction. Based on the psychodynamic theory, Jacobs argues that all types of addiction aim to regulate emotions. According to this perspective, problem gamblers gamble in order to seek an emotional escape from their personal problems. These gamblers often report having depression, anxiety, substance abuse, and deficits in coping with stress prior to their acquisition of the gambling habits. Thus, gambling for these individuals is a means for obtaining emotional relief. Along this vein of thought, the gambling venue serves as a psychological oasis, where the gamblers seek psychological comfort and solace through dissociation and mood modification (Brown 2002). In other words, gambling is a form of defense mechanism for these individuals. Hence, for the treatment specialists, the planning for psychological intervention for these gamblers should include treatment and care for their emotional and developmental problems. If these issues are not properly addressed, their relapse into gambling is high (Fig. 3.2).

The third group is made up of individuals whom Blaszczynski and Nower (2002) term antisocial-impulsivist gamblers. This group of individuals might have inborn neurological or neurochemical biological deficiencies in controlling impulses, though they also possess similar psychosocial vulnerabilities as the emotionally vulnerable gamblers (Pathway Group 2). These gamblers are characterized by antisocial personality disorders and impulsivity and/or attention-deficit disorders (Blaszczynski and McConaghy 1994; Steel and Blaszczynski 1998). Their inability to control impulses can also be a consequence of learned behavioral patterns. Since childhood, they enjoy seeking out immediate gratification of wants and desires

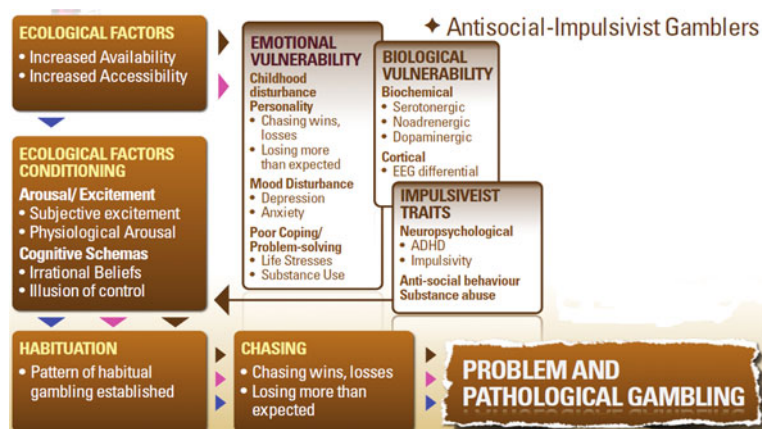


**Fig. 3.2** Pathway 2: emotionally vulnerable gamblers (Source Blaszczynski and Nower 2002). Permission to use the model granted by the Professor Blaszczynski

without carefully evaluating the resulting consequences. They have a propensity to look for constant stimulation from their environment. In addition to their gambling, they tend to be clinically impulsive and display a broad range of problems, which might include substance abuse, manipulative relationships, involvement in criminal acts, and a history of antisocial and risk-taking behavior. Gamblers belonging to this pathway often do not achieve insight for their problems. Many a time, they lack the ability to control the impulses and urges of chasing their losses from gambling. Most gamblers from this group can be described as socially irresponsible, impulsive, deceitful, and manipulative of others (Steel and Blaszczynski 1998; Chan and Ohtsuka 2013). Usually, they have poor compliance rates for professional help and intervention (Fig. 3.3).

Empirical validation of this model has been attempted by Griffiths et al. (2007). Fifty problem gamblers, aged from 18 to 63, were recruited in Britain and given detailed clinical interviews. The results suggest that the majority of the gamblers belonged to the emotionally vulnerable group. Using thematic analysis of the responses of the participants, the researchers found that these problem gamblers gamble to escape from personal problems. The escape is achieved through mood modification involving fantasies, dissociation, and/or changes in arousal. Gambling for these individuals serves the function of filling the psychological emptiness and helps them to avoid their daily problems.

In Hong Kong and Macao, Chan and his colleagues (Chan 2014; Chan and Ohtsuka 2013; Chan et al. 2012; Chiu and Chan 2015) reported a series of validation studies on the BN (2002) model. Chiu and Chan (2015) summarize the major findings of these studies. Overall, there were 190 participants ( $M = 101$ ,  $F = 89$ , mean age: 40), who were recruited from different sectors and occupational groups in Hong Kong. There were groups of working-class housewives, cargo laborers, sex



**Fig. 3.3** Pathway 3: antisocial-impulsivist gamblers (Source Blaszczynski and Nower 2002). Permission to use the model granted by the Professor Blaszczynski

workers, taxi drivers, problem gamblers from Macao casinos, stock traders in the stock markets and female Pilipino domestic helpers, and senior gamblers. All of these studies followed similar procedures, where the participants were interviewed on semi-structured questionnaires that covered their developmental history, gambling habits, and lifestyles. The interviews were structured on the DSM-IV-TR (American Psychiatric Association 2000) and the Problem Gambling Severity Index (PGSI) (Ferris and Wayne 2001). Thematic analysis of the participants' interview responses and analysis of their testing results indicate that the BN (2002) model can adequately explain the personality and gambling development of problem gamblers in Hong Kong and Macao. Most of the gamblers came from the Pathway One ( $N = 69$ ), as they reported learning to gamble from family and friends during childhood. An early win was often reported where they tended to associate personal luck with gambling. These gamblers could spend some twenty years before they realized they had gambling problems. For them, gambling was a learned behavioral pastime. Some even considered gambling as their "best friend" who has given them treasured moments of play time.

In contrast, the gamblers associated with Pathway Two ( $N = 16$ ) were often emotionally maladjusted prior to the development of gambling problems. These gamblers often reported a number of comorbid mental health complications such as depression and substance use disorders. These gamblers mimic the suggestion of Jacobs (1986) and Brown (2002) that gambling presents a form of escape from their problems. Treatment for these gamblers should thus include concerns and support for their emotional problems.

There were twenty-eight Pathway Three problem gamblers in the Chan's validation studies. Mostly, these gamblers came from subcultural and criminal backgrounds. They often reported gambling at an early age. Gambling for these individuals was one significant part of the many problem behaviors they had in

childhood. Other notable behaviors included smoking, truancy at school, and irresponsible sexual behavior. Very often, these gamblers exhibited a number of antisocial traits and criminal behaviors prior to their acquisition of gambling habits. Thus, problem gambling behavior was a consequence of their impulsive and irresponsible lifestyle.

There are a number of unexpected findings in Chan's validation investigations. Firstly, alcohol addiction is not common among problem gamblers in Hong Kong and Macao. Very few participants reported taking alcoholic drinks during gambling. This finding is echoed in a recent study (Au and Chan 2015) on documentaries of Hong Kong problem gamblers produced by the Radio Television of Hong Kong (RTHK). In this television series, actors played out the actual life stories of twenty-six problem gamblers in Hong Kong. Au and Chan (2015) critically examined all the conversations and behavior of these twenty-six gamblers. In the movies, none of the actors drank during gambling. Only one actor drank excessively once. This drinking episode comes after heavy losses and while he is contemplating suicide. These findings may suggest that problem drinking may not be a comorbid problem with problem gambling among Chinese problem gamblers. Secondly, one major theme in the television documentaries is the importance of peers and family influences on the development of one's gambling behavior. Almost all of the gamblers reported learning to gamble from friends and family. This supports the argument of Papineau (2005) that Chinese family gambling exerts a critical influence on the learning and maintenance of gambling among Chinese gamblers.

Blaszczynski's and Nower's (2002) pathway model focuses more on the psychosocial and personality development of problem gamblers. Other studies have investigated specific personality factors, such as impulsivity, risk-taking, poor coping, negative emotionality, novelty seeking and sensation seeking, and antisocial traits (Argo and Black 2004), that contribute to one's gambling. Many of these studies employ measurement of one's gambling involvement with a standardized psychological inventory. The following is a synopsis and a critique of the summary of these studies.

### **3.3 Minnesota Multiphasic Personality Inventory (MMPI)**

The Minnesota Multiphasic Personality Inventory (MMPI) was developed by Hathaway and McKinley in 1943. In the inventory, there are a total of 599 questions, grouped under 10 standard scales, which clinically assess the various aspects of a person's psychological states and personality. The profile generated by the composite scores provides the assessor details of the person's functioning and personality. In order to understand the clinical problems of a client, an experienced assessor would examine the profile configuration of the 10 scales, the highs and the lows of the profile, and the shape of the scales. The most consistent findings of MMPI profiles among problem gamblers are elevated scores on both scales 4-Pd (psychopathic deviate) and 2-D (depression) (Ciarrocchi et al. 1991). This profile

type describes individuals with significant psychopathology including depression, anxiety, and antisocial traits. People with such personality styles often have difficulties in following a socially responsible lifestyle.

McCown and Chamberlain (2005) reported a study of MMPI-2 profiles of 387 pathological gamblers recruited from the treatment facilities. On detailed examination of the configuration of the profiles, the researchers identified two distinct clusters that accounted for 56 % of the gamblers in treatment. The first cluster, accounting for 30 % of the participants, was characterized by elevations on scales 1-Hs (hypochondriasis), 2-D (depression), and 3-Hy (hysteria). Individuals with this profile are often described as depressive and have anxiety problems. They might gamble to escape from their personal problems. Along this argument, the casinos might serve as an oasis or a psychological shelter which can distract their attention and focus from their personal problems. Women and video gamblers were over-represented in this group. This type of gamblers describes much of the characteristics of Pathway Two of the Blaszczynski and Nower's (2002) model. The second cluster, accounting for 26 % of the participants, was characterized by elevations on scales 9-Ma (mania) and 4-Pd (psychopathic deviate) and a low scale 0-Si (social introversion). This group included male poker players who enjoyed high-stakes table games in the casinos. Individuals with this profile are often depicted as antisocial, impulsive, and lack the ability to reason morally. They tend to live a socially irresponsible lifestyle. This group corresponds well to the description of the Pathway Three of the BN model. In fact, it was found that antisocial personality disorders are common among pathological gamblers (Steel and Blaszczynski 1998). On this issue, Chan and his students (Khiatani et al. 2013; Tse et al. 2012) interviewed a number of gamblers who were members of the criminal world. Most of these individuals belonged to the Chinese criminal gangs. Some had spent time in prisons. In the interviews, the researchers found most of these gamblers demonstrate antisocial behaviors. They could best be described as egocentric, cunning, socially irresponsible, risk-taking, and lack the capacity to empathize with others. These findings support the propositions of the Pathway Three of BN model.

### 3.4 Five-Factor Model

The five-factor model (FFM) was developed by Costa and McCrae (1992) in the form of NEO PI-R professional manual. The five dimensions of personality traits, such as extraversion (E), agreeableness (A), conscientiousness (C), neuroticism (N), and openness to experience (E), are assembled into the comprehensive FFM, which consist of both genetic and environmental causes and contexts. FFM currently is one of the most popular approaches to studying personality traits.

In the gambling literature, a number of researchers have used the FFM to investigate personality traits of problem gamblers. Bagby et al. (2007), for instance, studied the relationship between pathological gambling and the FFM of personality by comparing 106 pathological gamblers and 177 non-pathological gamblers in



community. Results from NEO PI-R found that samples of pathological gamblers had significantly higher N, lower C, and lower “trust” (one of the facets of A). Myrseth et al. (2009) investigated whether personality factors could significantly predict pathological gambling. The researchers compared 90 pathological gamblers who actively sought treatment with those who were non-pathological gamblers. Results showed that pathological gamblers generally had higher N but lower A and C. Karre et al. (2009) reported similar findings by comparing personality traits between pathological gambling group ( $N = 33$ ) and non-pathological gambling ( $N = 42$ ), in which the pathological gambling group had a significantly higher N but lower C. All three studies indicated that common personality traits of pathological gamblers were high N but low A and C. However, the above-mentioned three studies can be criticized for their sampling bias as pathological gamblers generally seldom sought treatment. Those who were recruited into studies might have different personality profiles than those who hid themselves from treatment facilities. For example, the “antisocial–impulsivist type” pathological gamblers (Pathway 3) were the lowest group to seek treatments compared to “behaviorally conditioned” (Pathway 1) and “emotionally vulnerable” (Pathway 2) types (Blaszczynski and Nower 2002).

Criticism of the above-mentioned studies was defended against by MacLaren et al. (2011). The researchers recruited 369 undergraduates (284 females and 85 males) from two Canadian universities. The participants were tested with a battery of inventories including the Shorter PROMIS Questionnaire Gambling Scale (SPQ) (Lefever 1988; Stephenson et al. 1995) and the NEO PI-R (Costa and McCrae 1976, 1992). Pearson correlations found that the participants’ SPQ scores were modestly but significantly correlated to N ( $r = 0.15$ ), A ( $-0.14$ ), and C ( $-0.16$ ). Regression analysis demonstrated that the participants’ gambling was significantly predicted by facets of N, A, and C, accounting for 12.6 % overall prediction. Significant predictors were high impulsiveness (facet of N), low straightforwardness (facet of A), low dutifulness (facet of C), and low self-discipline (facet of C). Thus, MacLaren’s study provided promising evidence of the significant correlations between problem gambling and personality traits (i.e., high N, low A, and low C). Put in more layman’s terms, problem gamblers were more likely to be impulsive and have problems in following social duties and responsibilities. Limitations of this study included are that SPQ, as an assessment tool, lacks empirical clinical validation. Further, the reported findings may have the limited generalizability to other age groups and people from different ethnic and cultural backgrounds. Thus, it is worth carrying out related studies on the FFM model and problem gambling in Hong Kong and Macao.

### 3.5 Impulsivity

The failure to resist impulse and to gamble on chasing loss has been identified as one of pathological gambling in the DSM-5 (American Psychiatric Association 2013). Several studies have reported that problem gamblers are characterized by

higher rates of impulsivity than non-pathological gamblers (Alessi and Petry 2003; Blaszczynski et al. 1997; Carlton and Manowitz 1994; Nower et al. 2004; Steel and Blaszczynski 1998). Many problem gamblers demonstrate impulsive and risk-taking behavior early in their development. Jackson et al. (2008), in a prevalence study of 2788 eighth grade students in Victoria, Australia, identified risk-taking and antisocial behavior as the two most important personality characteristics among male adolescent problem gamblers. However, for young girls at eighth grade, dissatisfaction with peers and school connectedness were important predictors for greater gambling involvement. This study is important as it demonstrates significant gender differences in motivations behind problem gambling among young students in Australia.

Impulsivity has also been shown to be a mediator between depression and problem gambling (Clarke 2005). As a personality trait, impulsivity can be distinguished into functional impulsivity and dysfunctional impulsivity (Nower and Blaszczynski 2006). A few studies have documented that impulsivity is a mediating factor for the severity of the gambling problems (Alessi and Petry 2003; Blaszczynski et al. 1997; Steel and Blaszczynski 1998). Thus, more impulsive gamblers demonstrate more severe clinical and adjustment problems in their lives. Impulsivity is also related to dropping out of treatment (Leblond et al. 2003). Hence, individuals exhibiting high levels of impulsivity may need motivational enhancing treatment interventions (Leblond et al. 2003).

In essence, there are striking similarities between problem gambling and substance dependence as both disorders are characterized by a lack of self-regulation and control (Goldstein and Volkow 2002; Goldstein et al. 2001). The deficits of self-regulation and control are significant factors for the problem gambler's preoccupation of gambling and chasing over losses (Chan 2014; Chiu and Chan 2015; Goudriaan et al. 2008). Impulsivity is clinically correlated with the lack of efficacious self-regulation among problem gamblers (Goudriaan et al. 2006), which may be due to abnormalities in the brain reward circuitry (Potenza et al. 2003). Neurological-based investigations indicate specifically that diminished dopamine receptor availability (which may be related to substance dependence or a preexisting vulnerability) causes a chronic reward deficiency in the brain which might contribute to a vulnerability to engaging excessively in addictive behaviors (Blum et al. 1996; Chim 2011). Further, problem gamblers often demonstrate a preference for a smaller reward while discounting the benefits of a potential larger future reward (Goudriaan et al. 2005). Such deficiency might account for the impulsive behavior of the problem gamblers, especially among Pathway 3 gamblers.

In a research study with these antisocial and impulsive gamblers, Chan and Ohtsuka (2013) found that problem gamblers in the casinos of Macao, nicknamed *Paichais* by local Macao residents, enjoy staying in the casinos every day. Their impulsivity is demonstrated by their lack of self-discipline and insight for their problems. Some of these gamblers have been gambling for many years. They earn



their living by acting as servants for other gamblers or begging others for tips. They might even steal from others to finance their gambling. For these gamblers, casinos are their homes.

### 3.6 Sensation Seeking

Sensation seeking can describe those “who seek novel, varied or complex sensations or experiences and who are willing to take risks for the sake of such experiences” (Breen and Zuckerman 1999, p. 1099). Zuckerman (1999) argued that gambling and the gambling environment present a high level of stimulus to sensation lovers. According to this assertion, gamblers do not mainly look for wins in games; they simply enjoy and attach to the process in the games with its richness of stimulation effects. Investigations on sensation seeking as an associated factor with problem gambling have produced mixed outcomes. While some early studies have demonstrated an association of sensation seeking and problem gambling behavior (Anderson and Brown 1984; Kuley and Jacobs 1988), other studies have failed to find a significant correlation between the two theoretical constructs (Coventry and Brown 1993; Hammelstein 2004; Langewisch and Frisch 1998; Sharpe 2002). On this issue, Langewisch and Frisch (1998) argued that levels of sensation seeking do not predict gambling severity among problem gamblers. According to this argument, problem gamblers do not seek for more stimulation when compared to non-gamblers.

However, Breen and Zuckerman (1999) believed that the failure of some studies to support the sensation seeking hypothesis may be due to the theoretical assumptions of the assessing instruments. The most widely used measure of sensation seeking has been Zuckerman’s Sensation Seeking Scale, Form V (SSS-V) (Arnett 1994; Zuckerman et al. 1978). However, this scale has been criticized for using a “forced choice” format, and its validity has been questioned (Arnett 1994; Hammelstein 2004). In a critical review of all studies investigating sensation seeking among pathological gamblers between 1970 and 2003, Hammelstein (2004) found that the only study that could find significantly higher sensation seeking among pathological gamblers was one of the two studies using a measure of sensation seeking other than the SSS-V.

Thus, it appears that the major issue behind the conflicting evidences on sensation seeking and gambling may lie in the selection of assessing instruments. On this controversial issue, Arnett (1994) proposes a new concept of sensation seeking which emphasizes novelty and intensity as the two major components of sensation seeking. Based on this theoretical foundation, he developed a scale known as the Arnett Inventory of Sensation Seeking (AISS) (Arnett 1994). In this inventory, the sensation seeking trait needs not to be expressed in norm-breaking or antisocial ways. Using this scale in studies with gamblers, Arnett (1994) found a significant association between sensation seeking and risky behavior. This argument has been supported by Nower et al. (2004), who found that the need for stimulus intensity distinguishes pathological gamblers from non-pathological gamblers.

### 3.7 Conclusion

In this chapter, we have reviewed many personality characteristics that are associated with problem gambling. Bearing in mind that problem gamblers often come from diverse backgrounds with different motivations for gambling, there should not be one single type of addictive personality as Lang (1983) has proposed. Instead, the BN (2002) model seems more promising in explaining the personality characteristics of problem gamblers as it integrates the ecological, cultural, behavioral, motivational, and biological perspectives of personality development of the problem gambler. In the next chapter, we will critically examine the etiology of problem gambling.

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## Chapter 4

# The Etiology of Problem Gambling

The late Walker (1992), a pioneer in the study of psychology of gambling, categorically explained the etiology of problem gambling in two basic dimensions: distal causes and proximal causes. He writes:

Psychodynamic conceptions of personality expose a role for gambling which may stretch back to the childhood relations of the gambler and his parents. Explaining gambling in terms of the personality of the individual is an example of distal causation. The proximal cause of gambling will be such that it structures and motivates the gambling behavior observed. Proximal causes are likely to be either behavioral, as when we link the gambling response to the immediate stimuli and conditioning history of the individual, or cognitive, as when we see the gambling behavior as the consequence of the positive evaluation of gambling with respect to its alternatives (Walker 1992, pp. 92–93).

What Walker argues is that problem gambling is the consequence of diverse causes that include one's heredity and family background; his/her childhood experiences, especially those related to gambling; events in the person's development that might have a bearing on learning and cognitive patterns concerning gambling; peers and work experiences; and the environmental and contextual factors that are related to the games engaged in. The list of factors might act individually or, as in many circumstances, interact in a complex manner. In the present discussion, these perspectives will be delineated and discussed in detail. It is hoped that, through the critical evaluation of each perspective, the reader can have a clear understanding of the theoretical etiology of problem gambling. We will discuss five major perspectives that have a significant bearing on the development of one's problem gambling. They are cognitive, psychodynamic, behavioral, physiological, and cultural approaches.

### 4.1 Cognitive Theory of Gambling

The cognitive theory of pathological gambling posits that problem gambling is the consequence of faulty thinking processes that contribute to the resulting maladaptive gambling behavior. Proponents of this approach believe that the major source

of problem gambling is an irrational belief system that motivates and sustains one's gambling behavior. The pioneer in the cognitive theoretical foundations of problem gambling is Professor Michael Walker. In his book, *The Psychology of Gambling* (1992), Walker presents a sociocognitive theory of gambling. He argues that gamblers differ in their motivation and patterns of gambling. Using the analogy of a filtering system to illustrate his ideas, he suggests that people become involved in gambling with different motivations, intensities, and purposes. Initially, almost all are uninvolved in gambling. Some never gamble, while most gamble occasionally for entertainment and fun. Only a small proportion of players develop gambling problems. For these individuals, their main causes of their excessive gambling behavior are their maladaptive thinking patterns and cognitions.

Walker's position is supported by Orford (2001), who have included superstitious thinking and common cognitive biases and distortions such as the gambler's fallacy, entrapment, unrealistic optimism, illusion of control, erroneous beliefs, and biased evaluation of outcomes (Orford 2001) as significant elements of one's irrational cognitive system. According to the authors, people gamble excessively because they have cognitive biases related to gambling. In this vein of thought, problem gambling is not a consequence of childhood problems as the psychodynamic theorists propose, nor is it an inherited or biologic problem. The fundamental problem lies with the irrational thinking patterns of the gambler, which maintain and perpetuate the gambler's maladaptive gambling behavior. For many gamblers, these beliefs are not mutually exclusive—rather, many of these irrational systems complement and reinforce one another in constructing one's cognitive and behavioral repertoire. In the next paragraphs, these cognitive biases and cognitive distortions will be discussed in detail.

Over 30 years ago, Dickerson (1984) identified the gambler's fallacy as a distinctive cognitive pattern of most problem gamblers. Put in more succinct terms, the gambler's fallacy is the belief that outcomes of chance events are related. For instance, in the game of coin tossing, after a series of tails, the gambler may believe that the opposite outcome is "due" to come. There are two types of gambler's fallacy. The gambler may believe that after a series of odd numbers in a roulette game, the even number is "bound" to come. This is called Type I fallacy. Conversely, Type II fallacy is the opposite—after a string of winnings of the home team in international soccer games, the future results will continue to stay in the same trend.

Another cognitive fallacy that contributes to problem gambling is the gambler's illusion of control. The first systemic and empirical investigation on this cognitive pattern was reported by Harvard researcher Langer (1975), who defined illusion of control as an expectancy of a personal success probability inappropriately higher than the objective probability may warrant. Langer argued that people have a tendency to endorse biased perceptions over chance situations if they are allowed to exert a control in the gambling process. In one classic experiment, the participants were given the opportunity to choose their favorite numbers and buy raffle tickets for US\$1. Then, after the purchase, when asked to resell their tickets to others, these participants were more reluctant to sell their tickets when compared to those

participants who did not choose their own personal numbers. Consequently, they would often ask for a significantly higher price for the tickets. The average selling price was an amazing US\$8–\$72. Thus, by simply allowing the individuals to choose their number in the lottery tickets, people might develop an illusion of control over a totally chance event.

Out of these empirical findings, Langer (1975) coined the concept of “skill cue.” Skill cues are significant elements and properties in a game situation. Common cues are the familiarity with the games, the level of competition in the games, and cognitive activity involved in the gaming process. People develop illusions of control rather unconsciously. For example, many gamblers believe that touching their favorite cards with their finger or kissing the dice before each throw would influence the outcome of their bets. Very often, these gamblers have idiosyncratic strategies in gambling, through which they believe they can control the outcomes of their wagering. One example is that baccarat players in the casinos in Macao would study the outcomes of previous games before they wager their money (Lam 2005, 2007). In actuality, these endeavors would not help them in their overall winning percentage. However, by continuous investment of cognitive efforts on the games, they become more confident in their winning and bet significantly more than other players do.

Empirical studies have demonstrated that illusion of control is significant risk factors for problem gambling (Moore and Ohtsuka 2001; Ohtsuka and Carroll 2012). One example of the gambler’s illusion of control over the outcomes of gambling is the endorsement of superstitious beliefs and practices. Superstition is a particular type of behavior or belief that certain events cannot be explained by human rationality or physical laws and which people adhere strongly to (Ohtsuka and Chan 2010). Most superstitious beliefs were related to rituals of the earliest religions and ancient cultural beliefs and practices. In the absence of scientific technology, people in the ancient world often employed superstitious beliefs, rather unconsciously, to explain mysteries and wonders in the natural world.

An empirical understanding of superstition and gambling has been reported by researchers in Spain. Bersabe and Arias’s (2000) had participants wager in a simulated gambling experiment. In one condition, when the participants won more while wearing a biomagnetic bracelet in the first five throws, they would then consider the bracelet as a lucky charm. Consequently, they would bet more in their subsequent games. This finding indicates that early wins might be very important in the development of problem gambling. In the pathway development model of Blaszczynski and Nower (2002), the majority of problem gamblers often report having an early win in their gambling development. Such experiences give them the illusion that they can be invincible in their games. They thus develop an exaggerated estimate of their abilities. Some even believe that they would be lucky all their lives. These irrational beliefs are important factors in their continuous involvement in gambling.

Very often, superstitious beliefs are specific to the particular structure of the particular game. Ohtsuka and Chan (2010) found that mahjong players in Macao, when compared to non-gamblers, ascribe more to specific superstitious beliefs



related to mahjong. Examples of such beliefs are “changing seat to reverse a bad luck,” “wearing a red shirt to bring in good luck,” and “seeing monks on the day gambling can bring bad luck.” These behavioral superstitions are intended to bring good luck winnings and are thus functional and “useful” to the gamblers. Many Chinese gamblers in Hong Kong and Macao even believe one’s fate and success in gambling depends on one’s date of birth (Chan and Ohtsuka 2009).

Superstitious beliefs are often related to one’s beliefs on chance and luck. Wagenaar (1988) explains the crucial difference between luck and chance. Luck is more related to unexpected positive events, whereas chance is more of a surprising coincidence of two events. In the Chinese culture, it is generally believed that one can change or improve one’s luck in gambling by working on specific behavior. Ohtsuka and Ohtsuka (2010) also found that Vietnamese gamblers believe one’s luck is amenable to change. For instance, a person can improve his/her fate by donating to charities. In essence, a superstitious belief serves as a form of illusion of control for the ambivalent gambler. As the gambler works out the rituals of a particular superstitious behavior, he feels more confident that a win is on the way. Consequently, he will gamble more. Thus, illusion of control can be defined as “short-term hope, optimistic beliefs that the gambler’s action will produce desirable outcome” (Ohtsuka and Carroll 2012, p. 70).

Related investigations of superstitious beliefs and gambling have been reported in England. In a study of 412 bingo players, Griffiths and Bingham (2005) categorized superstitious beliefs into two types, namely general superstitious beliefs and specific beliefs related to bingo. Their study discovered that a great majority of bingo players endorsed “everyday” superstitious beliefs such as the idea that the number “13” was unlucky and avoidance of walking under ladders. Women players were more likely than men to endorse superstitious beliefs specific to bingo. One example of such specific superstition is using specially colored pencils in the game. Along this issue, Moodie (2008) discovered that, when compared to non-gamblers, probable problem gamblers endorsed more irrational beliefs. Superstitious beliefs can be learned in a particular gambling context (Aasved 2003). This type of learning comes from modeling on others, especially from family members in this context (Vyse 1997), and can often be maintained through reinforcement through subsequent winnings.

In addition to superstitious beliefs, problem gamblers often demonstrate a biased evaluation of gambling outcomes (Walker 1992). They tend to attribute their winnings to their abilities and explain their losses to others. This self-serving bias might be an unconscious attempt to protect their ego from a psychodynamic view. For instance, a punter in horse racing would often blame the rider or even the weather when he suffers losses in the games. The most prevalent example of this bias is in near-miss situations, where the gamblers barely miss the target and suffer losses in the games (Reid 1986). In these situations, they would often attribute and explain their misses to bad luck or the behavior of others. From a psychodynamic view, these complaints and the related irrational beliefs of the “fixed game system” are unconscious and idiosyncratic means or strategies of the gambler to cope with his/her inevitable losses.

Further, problem gamblers might be entrapped in the games out of irrational belief system the gamblers endorse (Walker 1992). Entrapment is defined as “a decision making process whereby individuals escalate their commitment to a previously chosen, though failing, course of action in order to justify or ‘make good on’ prior investments (Brockner and Rubin 1985, p. 5).” A good example is a player of Mark Six who insists on selecting the same numbers for every draw. These numbers might be their personal lucky numbers that carry specific meaning to them. For the majority of Chinese gamblers, numbers with an “8” or “3” often bring in good luck (Chan and Ohtsuka 2009). Once players have started the pattern of purchasing the lottery tickets on a regular basis, entrapment begins as the players would later believe their numbers are due to come out. Hence, the gambler would continue to wager, sometimes with more money, on the same numbers. The consequence of repeated chasing to recoup one’s losses might further increase the financial problems of the gamblers. Chasing over one’s loss is one of the nine symptoms of disordered gamblers in the Diagnostic and Statistical Manual 5th edition (DSM-5) (American Psychiatric Association 2013).

In summary, cognitive theorists assume that the faulty or maladaptive cognitive patterns are the major reasons of one’s gambling problems. This approach fails, however, to take into account the early family relationships and developmental aspects of problem gambler that may contribute to the gambler’s behavior. In this regard, the psychodynamic approach would complement the inadequacies of the cognitive approach in explaining a gambler’s behavior.

## 4.2 Psychodynamic Perspective

Aasved (2003) has made an excellent observation of the psychoanalytic perspective of problem gambling. This perspective explains one’s involvement in excessive gambling as the outcome of deeply rooted personal inadequacy and inferiority in the person’s unconsciousness. Gambling, for the psychoanalyst, is motivated by the gratification of instinctual impulses and attempts to cope with conflicts and inadequacies and troubled relationships in one’s childhood. On this issue, the first writer in the psychodynamic tradition was Hans Von Hattinberg (Rosenthal 1987). From a Freudian viewpoint, Von Hattinberg believed that gambling is a fixated behavior aimed, rather unconsciously, to resolve anger and conflicts in childhood. A person’s excessive involvement in gambling might be a consequence of frustration and punishment for unchecked eliminative functions of urination and defecation during the anal stage. Along this argument, children derive autoerotic pleasure from urination and defecation by holding their urine and feces and delaying elimination to achieve urethral and anal erotic pleasure. The child’s retention of feces is a form of anal masturbation, and the act of defecation is an anal-orgasmic experience. The feces are the child’s first love object. Gambling thus serves as a means of coping

and resolving one's anger and guilt out of fixation on the anal stage. Gambling, with its emphasis on winning, is only an extension of such anal pleasure when the child reaches adulthood. Von Hattingberg's position, though appearing rather awkward for twenty-first-century readers, represents one of the first theoretical perspectives on problem gambling.

#### **4.2.1 *William Stekel***

William Stekel, a prominent psychoanalyst and a colleague of Sigmund Freud in the 1920s, presented a more complete psychoanalytic view of problem gambling. Stekel (1924) argued that gambling gives the gambler a means of escape and a regression to childhood. In other words, gambling is a form of defense mechanism developed out of one's inadequacies and frustrations during one's childhood development. Further, gambling renders the person an opportunity to show off, or exhibit one's egoistic wishes and release undesirable id impulses. Examples of such impulses are often his/her repressed sexuality and power concerns. Further, Stekel identified two categories of gamblers: real gamblers and professional gamblers. The professional gambler is a person who gambles for money. In contrast, the real gambler aims, rather unconsciously, to gamble in order to escape into a fantasy world, where the person can find tension release, fun, and excitement. As such, gambling is psychologically functional and might be emotionally justifiable for the gambler. Arguing from a similar perspective, Boyd and Bolen (1970) believed that gamblers employ gambling to ward off feelings of helplessness and depression. Thus, gamblers do not gamble for monetary gains—they gamble to escape from personal problems.

Based on the psychodynamic viewpoint of pathology, Stekel suggested that the irrational belief structures of gamblers serve a significant purpose. The gambler's appeals to superficial powers and superstitions are an outgrowth of the infantile obsession to fate and the supernatural. During gambling, the problem gambler regresses to the child state, where the conscious world is filled with supernatural powers, of which the father figure is the most supreme. The appeal to the luck factor is thus an extension of the gambler's unconscious child state. Also, for Stekel, gambling is a sublimated action for repressed sexuality.

The major criticism of Stekel's theory is that Stekel derived his ideas from his clinical patients. His claim that gambling was a sublimated action of incestuous desires was taken from only one single case, where a gambler, frustrated by his unfaithful wife, received sexual gratification by masturbating with his sister's and mother's underwear. Though Stekel has never substantiated his view by empirical findings, his argument presents one of the first major psychodynamic explanations of problem gambling.

### 4.2.2 Sigmund Freud

Freud did not write extensively on problem gambling. For him, problem gambling is a type of defense mechanism for repressed infantile sexuality (Freud 1928). Freud believed that masturbation is the root of all addictive disorders. As with alcoholism, the problem gambler seeks to compensate for the guilt of masturbation through gambling. In the analysis of a problem gambler named Fyodor Dostoevsky, Freud saw a causal relationship between gambling and repressed childhood sexuality. Freud linked problem gambling to guilt and shame over masturbation in childhood. In this regard, Freud believed that the gambler's use of hand in gambling is crucial: This signifies a sublimated action for touching and playing with one's penis. Thus, card gamblers enjoy the process of gambling by touching and smashing the cards on the table. For Freud, gambling is a masochistic act of self-punishment. Freud believed that the real gambler does not play to win but to lose.

One of the fundamental problems with the Freudian approach is that Freud's research was largely based on case studies and the validity of his findings is doubtful. Secondly, his theory of internalized guilt over masturbation may also be problematic as, in some cultures, the USA for an example, masturbation is not a social taboo and disgrace. Further, the issue of using the hand during gambling cannot explain one's wagering over the Internet. Thus, the argument that problem gambling as a consequence over guilt over masturbation lacks validating empirical support.

### 4.2.3 Edmund Bergler

The first psychoanalytic writer who employed empirical methodology to study problem gambling was Edmund Bergler. In his book *The Psychology of Gambling* (1957), Bergler, a psychiatrist by training, chronicled the treatment of 60 gamblers using psychoanalytic techniques. In his analysis of these patients, he argued cogently that gamblers play not to win but to lose. In other words, the gamblers have significant guilt stemming from earlier fixations in the oral and anal stages. For Bergler, the fundamental conflict is not the guilt arising from patricidal wishes during the phallic stage; instead, it is the anger and aggression engendered by frustration in the oral and anal stages. Such aggressive urge toward the parent figure is the major source of the child's internal conflicts, the unsuccessful resolution of which creates strong irrational wishes of self-punishment manifested in adulthood. Bergler saw the vicious circle of wagering and the resulting losses as a consequence of the gambler's unconscious wish to lose. Thus, the ultimate motivation of a problem gambler is to gamble to lose.

Like Stekel, Bergler posited that the gambler regresses to childhood through repeated gambling, where the inner child seeks to achieve "megalomaniacal narcissism," a state where the gambler engages in narcissistic fantasies of winning,

grandiosity, and entitlement (Simmel 1920). Bergler likened this phenomenon to the infantile omnipotent wishes of the child, when the mother is always there to provide unquestioned love and support. If left unchecked, the infantile wishes may culminate in the immature and maladaptive hopes of constant winnings in adulthood. In this argument, the childhood narcissistic wishes and concerns are the major motivation for one's gambling.

Taken all together, the early psychoanalytic writers offer an explanation for gambling through personal experiences with problem gamblers. Their perspectives, often formulated from clinical studies, have not been validated through empirical scientific findings. The majority of the early proponents in the psychoanalytic tradition were practicing psychiatrists who constructed their theoretical concerns from individual patients. Among them, the largest pool of subjects is from Bergler's study ( $N = 60$ ). Though Bergler reported that the success rate for psychoanalytic intervention was 75 %, he failed to back up his claim by follow-up investigations.

Contemporary psychodynamic writers (e.g., Rosenthal 1987), however, do not stress much on the repressed sexuality of the gambler's development. Instead, theories based on a neo-Freudian perspective put more emphasis on childhood development, the subjective world, and the current functioning of the gambler. These theories explain that if a person is physically or psychologically abused at childhood, he/she may develop a strong sense of inadequacy and subjective emptiness that might give rise to the development of neurotic problems in adulthood. Examples of common problems are compulsive shopping, alcohol addiction, and, for our concerns, problem gambling. Hence, problem gambling can be a behavioral outcome of one's problems during childhood.

Along this issue, Rosenthal (1987) investigates the defense mechanisms that problem gamblers employ in the face of stress. The five major defense mechanisms are omnipotence (the belief that they can control everything and the wishful thinking of winning the final jackpot), splitting (the gambler's tendency to think about himself/herself as two persons), idealization and devaluation of others (i.e., the gambler's inclination to see all others as either flawless or useless), projection (the externalization of their own feelings and problems onto others), and denial (habitual lying to themselves and others about their own problems). So, for the problem gambler, gambling is not just wagering one's money at the horse races—it is a host of behavioral patterns gear, rather unconsciously, to deal with one's personal problems and inadequacies.

Further, Rosenthal and Rugle (1994) argued that problem gamblers might not consciously understand their own motive in gambling. They may gamble for a variety of reasons. These reasons or goals include excitement, sense of personal control, competitiveness with others, independence from others, social acceptance, and reliving depression, loneliness, and rebelliousness from societal norms and regulations.

Some authors (e.g., Chan 2014) even suggest that, from the psychodynamic view, that gambling is an attachment object (Bowlby 1979). In this perspective, the gambler may experience a deep sense of unfulfilled needs, which stem from childhood experiences and/or parenting problems. Problem gambling, in this

regard, is an outgrowth of an in-depth desire for an attachment figure. In a series of qualitative studies with problem gamblers in Hong Kong, Chan (Chiu and Chan 2015) found that a number of problem gamblers take gambling as their only hobby; some even treat gambling as their best friend. One significant characteristic of these gamblers is their lack of significant attachment with families and friends. Hence, gambling might be their only pastime and, perhaps, the major source of happiness.

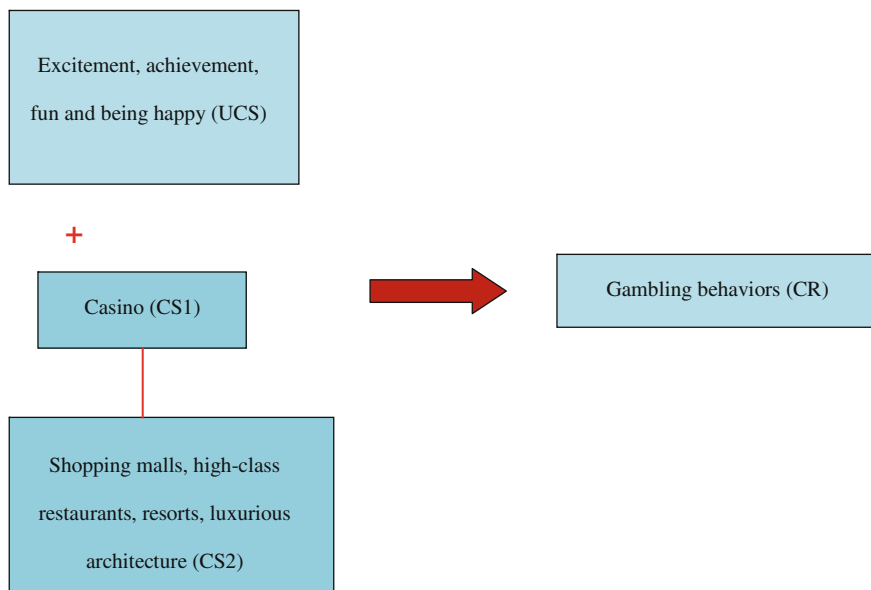
### 4.3 Behavioral Theory of Problem Gambling

The behaviorists believe that a person's acquisition and maintenance of gambling behavior is due to faulty learning processes. For the behaviorist, learning can be defined as the relatively enduring change of behavior due to experience (Skinner 1948). There are three types of learning, namely classical conditioning, operant conditioning, and social learning. Each of these theories will be discussed in detail in the following section.

Delfabbro (2008, 2014) explained how learning theories can be applied to problem gambling. In classical conditioning, changed behavioral pattern results when the conditional stimulus (CS) pairs with and predicts the concurrence of an unconditional stimulus (UCS). Applied in the area of gambling, the conditional stimulus can be betting on horse races, the casino environment, or simply the mahjong table. And the unconditional stimulus is money, excitement, or a source or venue of escape. The gambler learns to gamble when gambling pairs with the excitement, the associated fun, or the winning of money. Classical conditioning can explain why gamblers continue to gamble even though they suffer repeated losses (Fig. 4.1).

Classical conditioning principles can also explain the acquisition of the gambling habit. If gambling is associated with positive events such as family festivals and dining, the behavior can be established early in childhood. Papineau (2005), an expert on Chinese gambling, observed how Chinese children learn to play mahjong at home in Chinese communities in Canada as these gambling activities are often seen as family games. The early accessibility and acceptability of gambling can be important factors in the development of these young people. In addition to classical conditioning, social learning processes can also be applied in this scenario. Chinese children model their parents' gambling behavior and internalize the values of winning and fun of gambling. When they grow up, they might take gambling as a "normal" fun family activity. And their chances of developing into problem gamblers might be higher than those of others.

The first author of this book has a personal experience on gaming in Chinese communities in the USA. When he was an international student at the University of Tennessee in the early 1980s, he was often invited to the family gatherings of the Chinese immigrants in Knoxville (a city in Tennessee, USA). In most of these gatherings, two common fun activities were always present: fine Chinese dining



**Fig. 4.1** Classical conditioning in gambling (*Source* Chan et al. 2014)

and mahjong. Mahjong is the prototype of family games in Chinese communities (Ohtsuka and Chan 2010). For many Chinese immigrant children, mahjong gambling is often learned at home.

Classical conditioning can also explain casino gambling. When the gambler is in the casino, he/she is frequently surrounded or even “bombarded” with blistering noises, colorful lights and stimuli and the cheers related to money. These stimuli might serve as reinforcing conditioned stimuli, which the gambler associates with gambling. Further, the contemporary layout of casinos attracts the gamblers by means of a number of architectural characteristics. MacDonald and Eadington (2008) have made an excellent comparison between the traditional casino and the newly developed casinos. The traditional casino consists only of gambling and accommodation facilities. New casinos, on the contrary, are often integrated resorts where the gambling floors occupy less than 15 % of the total area. Luxury shops, hotel facilities, restaurants, and leisure areas account for the rest of the resorts. These resorts offer the gamblers the image of a relaxing and joyful venue. When these leisure facilities are paired with gambling, the players might find gambling highly reinforcing and is a “healthy and appropriate” form of family fun activity.

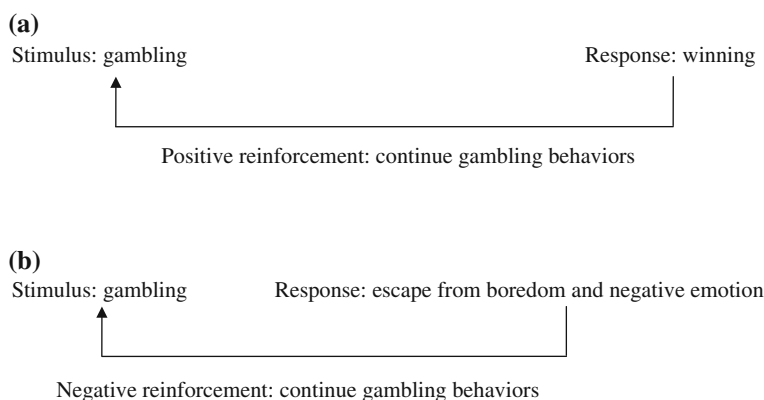
The recent development of casinos in Macao is a very good example. In an area smaller than Las Vegas, Macao houses 36 casinos (as of December 2015), each with a different genre and theme. For example, the American Las Vegas Sands runs a number of integrated resorts in Macao, including the Venetian and the Four Seasons Hotel. The Las Vegas Sands, together with other casino operators like the Melco Crown, has transformed the landscape of Cotai, a tiny piece of land between

the Macao peninsula and Coloane, an outlying island in the north of Macao, into an island of entertainment and gambling. The Las Vegas Sands has erected buildings and canals similar to those in Venice. Further, the company invited luxury branded shops and boutiques such as Rolex and Cartier, among other worldwide brands, to develop businesses in the integrated resorts. Thus, casinos are no longer a place for gambling; it is a cultural center and leisure hub which creates excitement, fun, and excellent family and personal memories. In this gambling context, the gamblers often associate the gaming (CS) with fun, excitement, the winning of money, and happy memories (UCS).

In addition to principles of classical and social learning, operant conditioning has been instrumental in a player's development of gambling behavior. In operant conditioning, learning is based on the consequences of behavior (Skinner 1948). Applied to the context of gambling, a person will continue to gamble if he/she is reinforced for the behavior. The reinforcement can include winning, excitement, and social approval (Fig. 4.2).

In Australia, electronic gaming machines (EGMs) are very popular among problem gamblers. Professor Delfabbro (2008, 2014), a prominent researcher at the University of Adelaide, presents an excellent summary of how learning principles can be applied to gambling on electronic gaming machines (EGMs). The mechanism of the success of EGMs, according to Delfabbro, is that most EGMs run on the random ratio (RR) of reinforcement schedule, where the rewards, though being on fixed percentage, are given randomly. To illustrate this more clearly, one has to understand how EGMs work. In Australia, all EGMs have to pay out a certain amount of money to the gamblers. Usually, an EGM will pay out 87–92 % of all wagering it receives. Thus, the patrons on these machines will not know when they will be rewarded as the winnings are randomly administered.

Developed out of the behavioral principle of partial reinforcement extinction effect, the RR schedule is very effective in maintaining one's gambling behavior.



**Fig. 4.2** **a** Positive reinforcement in operant conditioning. **b** Negative reinforcement in operant conditioning (Source Chan et al. 2014)



This effect works in this way: When the gambler loses, he might believe a big winning is due to come. So, the longer he loses, the more consistently he would invest his wagering into the machines. Thus, the “non-reward” periods are indeed reinforcing as the gambler patiently waits for the next win.

The reinforcement that gambling presents might not be monetary. In many circumstances, the reinforcement can be avoidance or escape from personal pain. Brown (2002) reported that problem gamblers often recall a trance state during gambling. Such state might well be a form of emotional escape. Psychodynamically, the emotional escape enables the gambler to dissociate themselves from stresses and personal problems. This dissociated state serves as a safety valve and a quiet room for depressed gamblers. Thus, gambling in a noisy casino environment is a self-hypnotic induction process where they find solace and a personal comfort zone.

The proposition that gambling serves to regulate emotions was first developed by Jacobs (1986). Along this line of reasoning, Chan et al. (2014) have investigated problem gambling among vulnerable groups in Hong Kong and Macao. In one study with problem gambling among female sex workers, the researchers found that the majority of them were suffering from depression and related emotional problems. Most of them reported having multiple addictive problems, one of which was gambling. Detailed analysis of transcripts of their interviews indicated that these individuals tend to employ gambling as a means of escape and dissociating from their personal problems (Chan et al. 2012).

#### 4.4 Physiological View of Problem Gambling

The physiological view of problem gambling posits problem gambling as a biologically based disorder. This perspective argues that problem gamblers suffer from neurological or biologic problems that predispose them to gambling. These deficiencies can be due to inborn heritage or personal experiences during one's life span. Studies on gambling and family development suggest that problem gambling might have a biologic origin (Browne and Brown 1994; Gupta and Deverensky 1998a, b). In studies of problem gamblers in Hong Kong and Macao, it is common to find that the majority of them come from families that condoned or even encouraged gambling (Chan 2014). Wong (2010), in a prevalence study of young people ( $N = 1001$ ), reported that the majority of the young problem gamblers started gambling before the age of 15. Further, in the sample, there is a significant relationship between parental gambling and the development of problem gambling of youths.

Young people might develop gambling from two mediums—by observational learning or as a part of their biologic heritage. Studies on familial exposure and association of gambling have been reported by American researchers. These studies often used community and treatment samples. From a community sample of more than 1000 adults, Hraha and Lee (1995) reported that problem or at-risk gambling

was associated with exposure to childhood gambling in the family. The association between problem gambling and family heritage is even stronger in the treatment population. For instance, Walters (2002) performed a meta-analysis of family studies and reported the heritability of Level 3 gambling (problem gambling) is about 16 %. Further, more severe levels of problem gambling are more strongly correlated with parental and familial gambling. However, experts in problem gambling have argued that one's family should not be the deterministic factor in one's gambling as an individual should have free will in deciding one's behavior including gambling behavior (e.g., Blaszczynski and Tempel 2008). On the issue of family heritage and problem gambling, Petry has made an excellent remark. She proposes:

..... it (problem gambling) is a multifaceted disorder, and both familial and environmental factors are important. The consistent association of pathological gambling with substance abuse disorders may suggest that the two disorders share some genetic linkage, but more than one gene may be involved, and these genes may influence the expression of neurochemicals or result in structural or functional abnormalities. (Petry 2005b, p. 120)

Petry's argument is supported by research in neurochemical and brain studies. Viewing from the evolutionary perspective of human behavior and the structure of the brain, Edelman's (1992) theory of neuronal group selection (1992) posits that the experiential selection process of an individual's learning and behavioral patterns can strengthen neural connections within and among the numerous networking neural maps of the person. Connections that are strengthened are those networks that help the individual to adjust and adapt to the needs and the demands of the environment. Conversely, connections that are unsuccessful in helping the person are weakened and eventually phased out. The strengthened networks form schema or patterns for the individual to design and execute a particular behavior. In many circumstances, when the person has successfully implemented an adaptive behavior, the brain releases a higher level of dopamine, which would reinforce the survival-enhancing behavior. These neural networks, according to the evolutionary perspective, can be a part of a person's distinctive genetic disposition or formed and established during one's lifelong experiential and learning process. Edelman's proposition can explain why a gambler maintains his gambling behavior for a lengthy period of time.

So, why are some individuals more prone to gambling problems? Is there a genetic disposition that prepares one to gamble excessively and irresponsibly? On this issue, Blum (1996) hypothesizes that certain persons can inherit different degrees of genetic predisposition which give rise to severe gambling problems. These individuals may be suffering from an inborn genetic-based disorder known as "reward deficiency syndrome," a particular neurochemical imbalance that affects the person's behavior and emotions. By nature, these persons are more prone to depressive and other negative emotions. To alleviate the negative emotions, they may employ addictive activities such as drinking, gambling, sexual activities, and overconsumption of food as their integral defense mechanisms. From a neurological viewpoint, Blum argues that, for problem gamblers, gambling activities are reinforcing as these activities can raise the dopamine levels in the pleasure centers of their brains.

Blum's argument has been supported by researchers in brain studies. As dopamine is associated with the reward system in the brain, Shaffer (1996) and Chim (2011) argue that, among persons with disordered gambling, gambling activity might trigger an elevation of dopamine in the "pleasure circuit" in the brain. Consequently, the person has a subjective feeling of excitement and pleasure during the process of gambling.

In a related vein of thought, medications that alter the dopamine level should have a significant effect on one's gambling. Fong (2009) believes that the dopaminergic system, which influences reward, motivation, and appetitive urges have been empirically demonstrated to be related to gambling addiction. An association has been found between dopamine agonists, Parkinson's disease, and pathological gambling. Patients with Parkinson's disease need to take medications that contain dopamine agonists. Molina et al. (2000), in a sample of 250 patients with Parkinson's disease, found that 12 could be diagnosed as pathological gamblers. Ten out of these patients started to gamble after they began pharmacological treatment with the dopamine agonist levodopa.

In addition to dopamine abnormalities, serotonergic, noradrenergic, and endogenous opioids have been scientifically found to be related to problem gambling (Petry 2005b). Serotonin is responsible for aggression, suicidal behavior, and generally the initiation and inhibition of one's behavior. There are millions of serotonin receptors in the brain and the neurofunctioning of serotonin and the system is complex. Empirical studies on the relationship between serotonin and problem gambling have been reported by medical researchers. Comings et al. (2001) investigated 31 different genes involving dopamine, serotonin, norepinephrine, and GABA systems and found the following seven genes to be the most significantly related to problem gambling: the dopamine receptor genes (DRD2 and DRD4), the dopamine transporter (DAT1), the tryptophan hydroxylase (TPH), the adrenergic alpha2C receptor (ADRA2C), the NMDA receptor (NMDA1), and the presenilin 1 (PS1) genes. The dopamine, serotonin, and norepinephrine genes contributed equally to the risk for problem gambling. In a similar line of research, Perez de Castro et al. (1999) found a significant correlation between a less efficient functional polymorphism and problem gambling for men.

Recent advances in pharmacological intervention for problem gambling have lent support for the neurological perspective of problem gambling. A psychiatrist by training, Professor Timothy Fong and his research team in UCLA have been working on pharmacological intervention to treat problem gamblers. Medication with the opiate agonists naltrexone and nalmefene has been effective among gamblers in reducing thoughts and urges about gambling (Fong 2009). Problem gamblers treated on regular doses of naltrexone were found to be able to refrain from gambling. Further, a low dose of nalmefene (25 mg/day) was reported to be effective in helping gamblers stop gambling. Higher dosages (50 and 100 mg per day) might produce intolerable side effects such as nausea, insomnia, and dizziness (Grant et al. 2006). In addition to medication, changes in one's lifestyle and behavioral habits can help problem gamblers reduce their gambling problems (Tammik 2002).

The above section shows that the biologic disposition of a person can be an important factor in the development and maintenance of gambling problems. But this argument has created an ontological question at the crux of the problem: Does one's biologic disposition determine one's behavior and psychological pathology? On this issue, in a keynote address to the National Association of Gambling Studies (NAGS) in 2008, Professor Blaszczyński (Blaszczyński and Tempel 2008) argued that one's biologic disposition alone cannot totally determine and shape one's behavior. The existing literature does not render a convincing answer to the fundamental issue of the question: Does neurotransmitter dysregulation represent the cause or consequence of problem gambling? And if biological vulnerability is the most determinant factor of problem gambling, why do some people cease gambling without medical help? On this complicated theoretical issue, the authors of this writing believe that, along with physiological factors, important dimensions such as one's motivational factors, personality and cognitive patterns, and situational and contextual factors can all contribute to one's choice of gambling behavior. In the next section, we will study how cultural and social factors contribute to one's acquisition of gambling behavior.

## 4.5 Social and Cultural Construction of Problem Gambling

Aasved (2003) provides an excellent sociological perspective on problem gambling. He attempts to employ the alienation theory to explain why people engage in gambling. According to this view, gambling serves a particular function to help individuals to meet the demands of society. Devereux (1968) believes that gambling fulfills three basic functions in society, namely (a) providing a safety valve to marginalized groups, (b) giving a hope to individuals, who have lost hope in life, and (c) maintaining the status quo of a society.

The first function, commonly termed as the safety-valve perspective, can explain why the working-class and socially marginalized groups usually gamble a higher percentage of their income than more affluent individuals. In modern societies, middle-class values such as competitiveness, individualism, luxury consumption, hedonism, and a desire to accumulate personal wealth are the common goals for many people. However, not everyone can achieve these goals. For those who do not have the capacity and abilities to achieve monetary gains, gambling may serve the purposes of fulfilling the needs and wishes of the persons. Through gambling, if one is successful or "lucky," he/she can accumulate enormous wealth and enjoy the many middle-class privileges such as a comfortable home and a luxurious lifestyle.

Secondly, gambling, according to Devereaux, presents existential hopes for the economically marginalized groups in a society. Hope can be distinguished into two types, namely long-term hope and short-term hope (Ginakis and Ohtsuka 2005). One's long-term hope includes having emotional and financial support from

children and enjoying a comfortable life in one's old age. Conversely, short-term hope carries meaning for something that is immediate in one's life, i.e., monthly rents, payment for credit cards, and grocery expenses. Devereux believes that gambling offers hopes and existential meaning for those without long-term hope. A good example is a working-class laborer who works on a job that offers little security or prospects. Without long-term hope, this worker might invest a majority of his income in lottery tickets, where he finds a glimpse of hopes of riches.

Lastly, gambling helps to maintain and preserve the social system and the status quo. A jurisdiction with legalized gambling, according to Devereux, allows individuals from socially marginalized groups to pursue their hopes of riches in a lottery draw. Gambling gives them a dream, something that is beyond their reach by work. Over 50 years ago, researchers have found that working-class individuals are more likely to buy lottery tickets than people from the upper social class in the society (Friedman and Savage 1948). In other words, it is the expected utility of gambling that makes gambling functional and attractive for these individuals (Hartley and Farrell 2002). The absolute value of the rewards is not important; instead, the expected utility of gambling attracts individuals from socially disadvantaged groups to gamble. Gambling delivers an existential meaning for them, especially for the poor elderly (Ohtsuka and Chan 2014). Hence, it is reasonable to argue that legalized and commercial gambling helps to maintain the status quo and the class system in our society.

Prevalence studies in various jurisdictions have demonstrated support for the sociological propositions. It has often been found that the involvement of commercial gambling was found to be inversely related to socioeconomic status and income in Great Britain (Wardle et al. 2007), in Hong Kong (Chan 2012; The University of Hong Kong 2005), and in Macao (Fong and Ozario 2005). The relatively poorer sector of a society often invests a larger portion of their disposable income to gambling compared to the relatively affluent members of society. From a sociological perspective, gambling is functional for these individuals as gambling gives them a sense of control and meaning in their lives. Through gambling, whether it is the casino or the mahjong table, they find a psychological oasis or personal comfort zone, where they forget about their problems and difficulties.

Lastly, from the sociologist's view, gambling is a type of cultural play and fun activity. Play theorists have long taken gambling as important for play and entertainment (Abt et al. 1985; Smith and Abt 1984). In many Asian cultures, children learn gambling from their parents. In the Philippines, young children are taught the rules and betting of cricket fighting by their parents (Chiu et al. 2014). During the gambling process, not only do the children acquire the cognitive reasoning and wagering, but they also experience the emotional highs of winning and the fun in the process.

In Hong Kong and Macao, many young children learn to gamble in family gatherings during festivals. In the narrative stories of recovering gamblers in gamblers' anonymous meetings in Hong Kong, it is very common to hear the stories of learning to gamble from family members (Chan and Ohtsuka 2010; Oei and Raylu 2007). To them and many Chinese gamblers, gambling is a fun, cultural,

and family activity. The personal experiences of the first author of this writing can serve as a good example. He first learnt the rules of mahjong when he observed his family members playing the game at home. His parents often taught him the rules and strategies of winning the game. Even though he never experienced a big win in his early experiences with mahjong, he often believes (even today) that he is an excellent mahjong player.

In brief, from a sociological perspective, gambling is a functional behavior as it presents existential meaning to individuals, especially those at the lower end of society. Further, it gives them a favorite pastime and hope. And it is this hope that initiates and maintains the gambler's gambling behavior, even in the face of mounting losses.

## 4.6 Conclusion

In this section, we have traced the many perspectives that attempt to explain the etiology of one's gambling. Each paradigm represents a unique empirical basis. We believe that it is theoretically advantageous to integrate the many perspectives in a unifying theoretical paradigm. The Blaszczynski and Nower (2002) pathway model of problem and pathological gambling is a promising model as empirical validation studies of the model have demonstrated (Chan 2014; Chan and Ohtsuka 2011b; Chiu and Chan 2015; Myrseth 2011). The understanding of the etiology of problem gambling is important in the design of evidenced-based treatment for the problem gamblers. In the next chapter, we will survey the various treatment modalities for problem gamblers. In particular, we will critically examine how these treatment modalities can be applied in the cultural context of Hong Kong and Macao.

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## Chapter 5

# The Treatment of Problem Gamblers in Hong Kong and Macao

In this chapter, we will critically examine the treatment modalities in problem gambling and their applications in Hong Kong and Macao. The present review will cover the recent research developments in pharmacotherapy, behavioral approach, the cognitive behavioral approach, and group counseling for problem gamblers. Among these treatment perspectives, the more commonly employed treatment modality in Hong Kong and Macao is the group counseling approach, while the pharmacotherapy, popular among American treatment specialists, has been ignored as a treatment of choice by counselors and helping professionals. We will begin with the pharmacotherapy approach in our discussion.

### 5.1 Pharmacotherapy

In the DSM-5 (American Psychiatric Association 2013), pathological gambling is termed as gambling disorder and classified as a behavioral addiction (non-substance-related disorder). This new classification implies that gambling disorder shares a number of similarities with other types of addiction such as alcohol and amphetamine addiction. In the previous chapter, we have discussed the research foundations of problem gambling as a biologically based disorder. In this perspective, the etiology of problem gambling is due to biologic factors such as the imbalance of the neurotransmitters in the brain, problems in the impulse control functions of the prefrontal lobe and the lack of effective executive functions of the brain to inhibit the urges and craving of gambling (Chim 2011). Neurotransmitters related to problem gambling are dopamine, serotonin, and norepinephrine (noradrenaline) (Petry 2005b). Pharmacotherapy for treating problem gambling thus targets regulating these neurotransmitters in the brain. In the following paragraphs, we will introduce a range of medications including serotonin reuptake inhibitors (SRIs)/selective serotonin reuptake inhibitors (SSRIs), mood stabilizers/anticonvulsants, opioid receptor antagonists, and bupropion.

### 5.1.1 *SRI/SSRIs*

Research demonstrates that there is an imbalance of serotonin (5-HT) in the brain among problem gamblers (Petry 2005b). Thus, medications aiming at regulating the serotonin level might be useful. Two groups of drugs are often prescribed: SRI and SSRI. The mechanism of SRIs/SSRIs blocks the serotonin reuptake by regulating presynaptic 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptors, thus disinhibiting the release of serotonin at axon terminals. Relevant studies of SRIs/SSRIs began in the early 1990s. Hollander (1992) reported a single case study of prescribing a problem gambler clomipramine a SRIs, 125 mg daily for 10 weeks. To investigate the therapeutic effect of clomipramine, Hollander prescribed a carbohydrate gum (a placebo) to the same patient daily for another 10 weeks. Results showed that clomipramine could effectively improve gambling behaviors up to 90 % (compared with 25 % reduction of gambling behavior in placebo). Zimmerman et al. (2002) prescribed citalopram (the SSRI with relatively less drug interaction than others) in which the initial dosage was 10 mg daily, then slowly increased to 35 mg daily, to 15 problem gamblers for 12 weeks. The findings demonstrated that 9 of them significantly reduced gambling urges and behaviors. Another commonly used SSRI is fluvoxamine. Hollander et al. (1998, 2000, 2002) undertook three related studies on the effectiveness of fluvoxamine on reducing gambling behavior of the participants. All three studies indicated that fluvoxamine was effective in reducing gambling behavior among the participants. However, the side effects of the medication are a troubling issue. Gamblers taking fluvoxamine reported experiences of serious side effects such as nausea. More details of the above studies are available in Table 5.1. Escitalopram, another SSRI with relatively fewer side effects than paroxetine and fluvoxamine, demonstrated its effectiveness in treating gambling disorders in the study conducted by Grant et al. (2006). In this pilot study, thirteen problem gamblers with comorbidity of anxiety disorders entered the 12-week open-label trial. Participants (61.5 % of them) who showed significant reduction in gambling urges and behaviors were then entered into an 8-week period of discontinuation of medication. Three of them were able to maintain abstinence during the 8-week discontinuation period. One major criticism of this study is the small sample size. The generalizability of the treatment effects needs to be evaluated with more care and details.

However, some pharmacological studies have reported conflicting results. Grant et al. (2003) reported that patients ( $N = 26$ ) on paroxetine (12 weeks) did not improve better than participants on placebos. Also, Saiz-Ruiz et al. (2005) performed a study where 60 participants were treated with sertraline (50–150 mg) for 6 months. The findings indicated that the efficacy of sertraline, as a medication for problem gambling, did not evidence a statistical difference over placebo treatment.

**Table 5.1** The effectiveness of SRIs and SSRIs on participants with problem and/or pathological gambling (*Source* Chan et al. 2014)

Researchers (Year)	Medications (average dosage)	Number of participants/completers	Research design	Treatment duration	Results
Hollander et al. (1992)	Clomipramine (125 mg)	1/1	Double-blind, crossover	Carbohydrate gum (placebo) and clomipramine, each x 10 weeks	Clomipramine up to 90 % reduction in gambling versus placebo reduced gambling up to 25 %
Zimmerman et al. (2002)	Citalopram (33 mg)	15/9	Open label	12 weeks	87 % completers reduced gambling. No significant difference in treatment response between participants with or without depression
Blanco et al. (2002)	Fluvoxamine (200 mg)	32/13	Double-blind, randomized	Fluvoxamine or placebo, in total of 24 weeks	72 % completers reduced gambling versus 59 % placebo reduced gambling; male and younger participants showed better treatment responses

### **5.1.2 Mood Stabilizers/Anticonvulsants**

Depression and mania have been found as a comorbid disorder with problem gambling (Petry et al. 2004). As such, medications for mood disorders such as mood stabilizers or anticonvulsants would be appropriate for these groups of patients. Pallanti et al. (2002) treated 42 pathological gamblers with lithium carbonate 796 mg, a mood stabilizer or valproate (874 mg), an anticonvulsant. The duration of the treatment was 14 weeks. The majority of the patients showed improvement a few weeks after taking the drugs. This finding implied that these medications were effective in reducing gambling behaviors. Hollander et al. (2005) also provided supporting evidence by comparing the effect of lithium group ( $N = 18$ ) with control ( $N = 22$ ). Patients recruited in this study had gambling disorders as well as bipolar spectrum disorder. Results showed that patients randomly assigned to lithium group had significantly fewer severe urges and gambling behavior than control group. Despite the effectiveness of lithium toward problem gamblers with comorbidity of bipolar spectrum disorders (usually presented with mood swings), there are many intolerable side effects of lithium including psoriasis, hypothyroidism, and leukocytosis (elevated white blood cells). Other common side effects are polyuria, polydipsia, weight gain (approximately 20 %), tremors, and sedation. In addition, routine monitoring of lithium level in blood is required due to its narrow therapeutic range. One should note that lithium toxicity could be fatal. Therefore, the employment of lithium as a treatment modality of problem gambling should be handled with very careful consideration. The clinician has to evaluate the benefits and potential harms of this medication to the patient. Secondly, he/she has to consider possible treatment alternatives as well.

### **5.1.3 Opioid Receptor Antagonists**

This series of medications aim at reducing the urge and craving for gambling. Naltrexone is initially an effective opioid receptor antagonists targeting at decreasing urges and craving among alcohol abusers. The first reported investigation of naltrexone as a treatment modality for pathological gamblers was reported by Kim in 1998. In this single case study, he found the medication was effective in reducing the gambler's behavior. More recent studies have also supported the effectiveness of naltrexone as a treatment of choice for problem gamblers (Rosenberg et al. 2013). The researchers undertook a 4-year follow-up study consisting of 78 problem gamblers, who were randomly assigned to four treatment groups, each receiving one of the following medications: naltrexone, topiramate (an anticonvulsant—also used for weight reduction), bupropion, and escitalopram a SSRI, respectively. This study found naltrexone to be the most effective medication in treating problem gamblers. The superiority of naltrexone was also supported by the meta-analysis conducted by Bartley and Bloch (2013). They reviewed 14

studies by calculating the standardized mean difference (SMD) of the benefits of medications used in each study (all studies contained placebo groups). They found that only opiate antagonists (naltrexone and nalmefene) successfully demonstrated a small but significant benefit over placebo (SMD = 0.22,  $z = 2.3$ ,  $p = 0.02$ ), while other types of medications such as antidepressants, antipsychotics, and topiramate showed no significant benefits over placebo. In spite of these promising effects, naltrexone has a possible adverse effect—liver impairment, though it does not usually result in intolerable side effects (Korn and Shaffer 2004). A low dose (50 mg/day) of naltrexone has been proven to be relatively safe without altering liver function (Yen et al. 2006). More common side effects of naltrexone include abdominal pain, headache, nausea, vomiting, joint or muscle pain, and unusual tiredness. It should also be noted that taking nonsteroidal anti-inflammatory drugs (NSAIDs) concurrently with naltrexone could cause serious drug interaction such as hepatotoxicity (Kim et al. 2001). One recent, major, single-center, randomized, double-blind, placebo-controlled study has been reported by a group of researchers in Finland (Alho et al. 2015). In this investigation, participants ( $N = 101$ ) were randomly placed in groups either as-needed placebo or naltrexone (50 mg) and psychosocial support for 20 weeks. “As needed” means that the participants were instructed to take the medication (placebo or naltrexone) whenever they felt an urge to gamble. Post-treatment analysis indicated that both groups demonstrated decreases in symptoms in problem gambling and the expenditure and frequency of gambling. However, there were no significant differences in terms of problem gambling variables or reported social functioning and emotional well-being among the participants. In view of these findings, the authors argue that as-needed use of naltrexone may not be an effective additional pharmacological support for the treatment of problem gambling.

Another long-acting opioid receptor antagonist, nalmefene, also showed significant improvement in pathological gambling in a multicenter, double-blind, placebo-controlled study (Grant et al. 2010). According to the findings of this study (233 participants, 41.6 % were women), nalmefene was effective only with the dosage of 40 mg a day for at least one week. Low doses of nalmefene (20 mg) did not have any statistical difference from placebo group. High doses (>50 mg a day) might produce intolerable side effects such as nausea, dizziness, and insomnia. These findings suggest that the treatment plan needs to balance the effectiveness (dosage) with safety (side effects) in using opioid receptor antagonists.

#### **5.1.4 Bupropion**

Bupropion is a norepinephrine and dopamine reuptake inhibitor (NDRI) which is often used to treat nicotine withdrawal symptoms and urges among chronic smokers. It is also employed as an additional medication for depression. The pharmacological mechanism of bupropion is to disinhibit the release of norepinephrine and dopamine in the brain. Unlike SSRIs, bupropion has no side effect

of sexual dysfunction. Nevertheless, people who have seizures are contradicted to using bupropion due to severe side effects. Dannon et al. (2005) demonstrated that the effectiveness of bupropion in reducing gambling behaviors was comparable to naltrexone, but the sample size was small as there were only 17 and 19 participants in bupropion and naltrexone groups, respectively. Black et al. (2007) performed a 12-week double-blind study which recruited 39 subjects to compare urges and gambling behaviors between bupropion ( $N = 18$ ) and control ( $N = 21$ ). Results showed that both groups had improvements in the above outcomes, but there were no significant differences between treatment group and the placebo. Due to insufficient research, the effectiveness of bupropion toward gambling disorders remains unclear.

Pharmacotherapy is a rather new and innovative treatment modality in American treatment facilities, the efficacy of which, as an evidence-based treatment, has been questioned by researchers in gambling studies. In a qualitative review of 75 pharmacological investigations, Lupi and his colleagues in Italy (2014) have argued that the published studies demonstrated mixed evidence for serotonergic antidepressants, mood stabilizers, and opioid antagonists. Often, the reported studies were brief, contained small sample sizes, and had a high attrition rate. The fundamental problem of the pharmacological intervention is the failure to determine the direction of causality of the issue: Is neurotransmitter dysregulation the cause or the result of problem gambling? In other words, do problem gamblers gamble as they are depressed or impulsive or they gamble and become more depressed and impulsive? Secondly, if gambling disorders are the consequences of inherent biological and neurological problems, why do many problem gamblers recover without any treatment, a process termed as spontaneous recovery by gambling researchers (Hodgins et al. 2001). These issues need to be empirically explored before the tone of advocacy of medication can be fully and clinically established.

Medical treatment for problem gambling has not been well received by helping professionals in Hong Kong and Macao, where the mainstream treatment of problem gambling is cognitive behavioral therapy (CBT) with motivational interviewing (MI). In principle, pharmacotherapy can be considered as a treatment of choice if problem gamblers have comorbid mood disorders (e.g., depression) or impulsivity (Iancu et al. 2008; Petry 2005b). But up to the time of writing, there are no formally approved medications specifically used for treating gambling disorders in Hong Kong and Macao. Moreover, currently available research studies did not last long enough to observe the carryover effect after a course of medication has been completed (Labuzek et al. 2014). And the side effects of medication should be the clinicians' major concerns. Longitudinal studies are warranted to investigate how long the remission could last after ceasing the medication. Another possible research area might be proving the effectiveness of multimodal interventions in which medications are applied for short-term use and acute stage of gambling disorders, complemented by CBT as a long-term treatment. The authors of this writing sincerely hope that the medical professionals in Hong Kong and Macao should invest in more research investigations on pharmacotherapy for gambling disorders in the near future (Table 5.2).

**Table 5.2** The effectiveness of mood stabilizers/anticonvulsant and opioid receptor antagonist (*Source* Chan et al. 2014)

Researchers (years)	Medications (average dosage)	Number of participants/completers	Research design	Treatment duration	Results
Pallanti et al. (2002)	Lithium (796 mg) or Valproate (874 mg)	42/31	Single-blind	14 weeks	65 % participants completed the treatment in lithium group. 61 % of them reduced in gambling
					84 % of participants completed the treatment in lithium group. 68 % of them reduced in gambling
Kim (1998)	Naltrexone (100 mg)	1/1	Open label	36 weeks	Complete reduction in gambling behaviors and urges



## 5.2 Psychodynamic/Psychoanalytic Therapy

We have critically examined the psychodynamic position on the etiology of problem gambling in Chap. 4. Psychodynamic therapy posits that negative childhood experiences such as personal inadequacy, inferiority, and low self-esteem are related to problem gambling in adulthood. The basic premise of the psychodynamic therapy is that one's negative childhood experiences are important factors for one's adult lifestyle and pathology. Recent research on the development of problem gamblers has demonstrated that pathological gamblers experienced higher rates of maltreatment at childhood than control participants (Petry et al. 2005). Sigmund Freud (1928) theorized problem gambling was the consequence of repressed infantile sexuality. Addictive behaviors including problem gambling may originate from one's inability to successfully resolve conflicts in childhood. He argued that masturbation creates excitement as well as anxiety, centering on feelings of shame and guilt, to the young child. The repressed shame and guilt from masturbation in childhood would then be channeled to gambling behaviors in adulthood and act as a masochistic act of self-punishment. To treat problem gambling, Freud suggested that exploring the childhood experiences of the problem gamblers is an important step in the therapeutic process. Making issues and objects in the unconsciousness known to the person is crucial to one's recovery from problem gambling. In other words, insight development of the client is a focal point in the treatment.

Edmund Bergler was the first psychoanalyst who empirically chronicled the treatment and recovery of problem gamblers. From the Freudian perspective, Bergler (1957) believed that problem gamblers have an unconscious need to lose in gambling. Instead of winning money, problem gamblers want to lose money unconsciously. Bergler hypothesized that problem gamblers experience an unhappy or even traumatic childhood. When they grow up, they would attempt, rather unconsciously, to resolve their conflicts through losing money in gambling. Bergler reported the treatment of 60 pathological gamblers, with 45 (75 %) of them successfully achieving abstinence from gambling. He then wrote a book *"The Psychology of Gambling"* to share his successful experiences. However, the study was plagued by the lack of random sampling of his participants and follow-up measures. Nonetheless, Bergler's writing is the first empirical investigation employing the psychodynamic treatment with problem gamblers.

Rosenthal and Rugle (1994) have presented a comprehensive psychodynamic therapy on treating problem gamblers. The researchers believed that the therapist should be supportive for the gambler in the treatment process. Gaining insight is the first step in the therapy as the gamblers often deny the problems. Psychodynamic therapy helps the client to accept and has a better understanding of the crux of the problem. To achieve this goal, the therapist may need to employ free association and dream analysis, by which the psychoanalyst can probe into the unconsciousness of the person. If the client becomes very defensive of their problems, confrontation might be used. Thus, the goal of the therapy is to help the client to achieve self-understanding

and to accept the guilt and problems of his/her gambling. Some researchers (e.g., Kausch et al. 2006) believe free association or dream analysis may be beneficial in treating problem gamblers. For the psychoanalyst, total abstinence is the goal of the therapy.

To date, very few systematic attempts have been reported on the efficacy of the psychoanalytic therapy on problem gambling. Further, the literature on the psychodynamic therapies with problem gamblers is mostly case studies. The generalizability of the treatment effects thus might not be very strong. Though efforts have been attempted in developing a shorter (12 sessions) psychodynamically based program (Clarkson 2015), treatment duration is generally lengthy and not cost-effective for many gamblers.

### 5.3 Behavioral Therapy (BT)

Behavioral therapy on problem gambling is grounded on theories of learning (Delfabbro 2014). Early studies of the behavioral treatment on gambling were mostly derived from case studies (e.g., Kraft 1970; Goorney 1968; Seager et al. 1966). These studies often employed the application and evaluation of specified behavioral techniques in treating problem gamblers. For instance, some focused on the use of aversion therapy (Baker and Miller 1966; Seager et al. 1966); others investigated the application of multimodal behavior therapy (Cotler 1971; Rankin 1982). The majority of these investigations have demonstrated the efficacy of the concerned behavioral techniques in helping problem gamblers. A few studies (e.g., Kraft 1970) found that systematic desensitization produced no particular benefits to the patient. Notwithstanding the impressive findings of most of these studies, early investigations using behavioral therapy on problem gambling lacked randomized control groups for comparison and the generalizability of their findings might be questionable (Petry 2005b; Brewer and Potenza 2008).

Randomized controlled trials with larger sample sizes, which include random sampling and control variables, were reported from researchers in Australia (McConaghy et al. 1983, 1988; McConaghy et al. 1991). These studies attempted to compare the efficacy of various behavioral therapy techniques in treating problem gamblers. Among these techniques, imaginal desensitization was found to be most effective in terms of reducing gambling behaviors among the participants. For example, in the McConaghy et al.'s (1991) study, 79 % of participants who received imaginal desensitization ceased or reduced gambling. 33 % of participants in the aversion therapy and about half in imaginal relaxation group and in the *in vivo* exposure group showed reduction in their gambling behavior.

Imaginal desensitization (ID) rests on the McConaghy's (1980) behavior completion mechanism model. On this concept, Blaszczynski and Nower (2014) explain:

This model extended the principles underlying the physiological function of the orienting reflex postulated by the Russian neurophysiologist Sokolov (1963) by suggesting a process of cortical excitation in which repeated occurrences of a complex sequence of behaviors establish a neuronal representation or habit within the cortex. Following each repetition, the sequence of behaviors merges and results in what can be best described as a habitual pattern of behavior. Similar to Sokolov's (1963) orienting reflex model, incoming stimuli are compared against the cortical representation of the habitual sequence of behaviors and if the patterns are concordant, the drive to pursue the habit further is inhibited. However, in response to a discordant match, the behavior completion neuronal attempt to interrupt the habit results in a state of aversive physical arousal or tension, experienced as a persistent urge, drive or motivation to persist in carrying out the habit. Once successfully completed, the urge, drive or motivation is satiated and the aversive state of arousal dissipates. The positive reinforcement associated with the appetitive behavior and the negative reinforcement produced by the removal of the aversive arousal strengthens the neuronal model of behavior (Blaszczynski and Nower 2014, pp. 214–215).

The procedure of ID is simple. Firstly, the therapist has to find a quiet and peaceful room where the client can be presented with the stimuli and cues that elicit his thoughts and urges of gambling. The client is encouraged to perform a brief progressive muscle relaxation (PMR) procedure which lasts about 5 min. The individual is then asked to describe several scenes in which he or she usually gambles. These particular scenes are prioritized according to the degree to which each initiates gambling urges, anxiety, and arousal. Rather than being stimulated to gamble, the individual is told not to do so by asking him or her to relax. When he or she succeeds in feeling relaxed, the therapist asks the individual to imagine the next gambling scene until all the scenes are performed (McConaghy et al. 1991). At the beginning of the treatment session, the client is asked to follow the instructions of the therapist. A sample ID session is presented here:

Morning, Mr. Chan. Today is your payday. You have five thousand dollars in your pocket. While your wife requires you to take the entire money home, you want to go to the casino. There you are, standing in front of the Venetian in Macao's Cotai Strip. You see the great architecture and you remember it is the usual casino you visit every week. But you hesitate for a moment as you have a few bills to pay. Your wife will be very angry if you lose again. Your family needs every penny of your pay. The thoughts of fun and excitement have subdued your moral judgment and you go in. Imagine you walk through the main door. There are electronic gaming machines to your left. You walk past them as you approach your favorite baccarat tables on the second floor. You look around and make good hunches the "ways" or patterns of the outcomes of the game. After ten minutes, you have a feeling that the next round of cards should favor the "player" and you want to bet all five thousands in your pocket. Stop. Think about your family and children. They need the money for the month. Think what would happen if you lose the money in gambling. They will be devastated. You should leave now. You decide this is the right thing to do. You stand up and walk away. You walk quickly through the door as you have achieved control of your urges and impulses for gambling. Congratulations.

As the therapist narrates the scenario slowly, the client will follow the leads and imagine himself/herself in the scene. The fundamental premise of ID is to help the client develop self-efficacy in resisting the urges and cravings for gambling.

The efficacy of ID as a treatment modality for gambling disorder is supported by Grant et al. (2009). The researchers carried out a randomized trial study comparing

groups that received ID plus motivational interviewing (MI) and Gamblers Anonymous (GA) among 68 pathological gamblers (25 males, 43 females). The findings indicated that manualized IDMI was effective in reducing gambling urges and behaviors.

Another recent behavior therapy is self-exclusion program, where the client can apply to the gaming operator to self-exclude himself/herself from entering the gaming premises. Self-exclusion can also be applied to Internet gambling, where the patron can apply to self-exclude himself/herself for a specified time (Huang 2011). Self-exclusion works on the learning principle of stimulus control as the client avoids the stimuli of gambling in the gaming venue. Research on self-exclusion has mixed results. While some gamblers can benefit from the program by excluding themselves from the gaming venues, a lot of self-excluders went to other gaming operators or relapsed to gambling after a certain time period (Chan 2014).

In many treatment facilities, gambling counselors often combine behavioral therapy with cognitive therapy (CT) and CBT in their treatment protocol as the integrated treatment is more parsimonious as it would address the diverse nature of the etiology of the problem. In the next sections, we will explain these two therapeutic therapies in more detail.

## 5.4 Cognitive Therapy (CT)

In the previous chapter, we have explained how one's cognitive patterns can contribute to one's maladaptive gambling behavior. In brief, cognitive theory of problem gambling suggests that an individual's irrational thoughts (distorted thinking) constitute the formulation and maintenance of problem gambling (Walker 1992). Irrational thoughts in gambling include gamblers' fallacies (Type I and Type II), "should" statements, entrapment, illusions of control, superstitious beliefs (general superstitious beliefs and specific superstitious beliefs), attribution bias, and selective memory (memory bias). Among the many cognitive therapeutic techniques, cognitive restructuring is often used. Cognitive restructuring aims to modify a problem gambler's distorted and irrational thoughts in gambling (Korn and Shaffer 2004). The goal is to help the problem gambler to identify and change their irrational thoughts so that he/she can reduce or stop gambling.

Early reports on the application of CT on problem gambling were single case studies (Bannister 1977; Sharpe and Tarrier 1992; Tonneatto and Sobell 1990). In these investigations, the researchers would use one or integrated treatment model to help the gambler. For instance, Sharpe and Tarrier (1992) employed relaxation, imaginal and in vivo exposure, and cognitive restructuring to help the participant. The treatment was successful as the participant reduced gambling in a 10-month follow-up. Studies involving more than one participant were reported by Arribas and Martinez (1991,  $N = 4$ ), Sylvain and Ladouceur (1992,  $N = 3$ ), and Ladouceur et al. (1998,  $N = 5$ ). The methodology of these studies was very similar. Very often,

the therapists employed cognitive techniques such as cognitive restructuring, education, problem solving, response prevention, self-monitoring, and stimulus control. The majority of the participants reduced their gambling behavior in follow-up assessment. Notwithstanding the impressive nature of these investigations, case studies lack random sampling and control groups, which can only be addressed with studies with randomized trials.

Canadian researcher Robert Ladouceur (Ladouceur et al. 2001, 2003) reported two investigations that employed randomized controlled trials (RCTs) on the efficacy of cognitive restructuring and relapse prevention in treating problem gambling. The investigators randomly assigned participants to an immediate treatment group or a wait-list control. The major difference between the two studies is that treatment was given in an individual basis in the 2001 study, while participants were treated in a group format in the 2003 study. Participants in both formats reported significant reduction in gambling. Further, the positive effects of the treatment could be maintained up to two years after the treatment.

Randomized trial studies on the efficacy of cognitive therapy have also been undertaken by Echeburua et al. (1996) and Sylvain et al. (1997). Both research groups found cognitive therapeutic techniques such as cognitive restructuring, in vivo exposure, relapse prevention, stimulus control, and problem solving/social skills to be effective in reducing gambling behavior. On the basis of the above findings, it is reasonable to conclude that CT is an efficacious treatment of program gambling. However, empirical studies have yet to discover the fundamental change mechanism that cognitive therapy offers. On this issue, prominent gambling researchers Professor Blaszczyński and Professor Nower write:

It is important to understand that the mechanism or processes contributing to recovery in cognitive therapy, however defined, is not yet fully understood, despite the demonstrated effectiveness of the modality. Most outcome studies assess baseline gambling behavior expressed in terms of expenditure, strength of urges, and characteristic cognitive beliefs and distortions, but utilize changes in behaviors and expenditure as the proxy index of success outcome following treatment. No studies to date have targeted specific cognitive distortions at baseline and tracked the relationship between changes to such cognition and behavioral outcomes, nor evaluated any dose-dependent relationship between the two. Nevertheless, the literature reveals two core components that can be considered as forming the fundamental foundation for achieving successful outcomes. These are (a) correction of erroneous and irrational cognitions and misunderstanding of randomness, probability theory and concepts of mutual independence of chance events, and (b) reduction in arousal and the positive and negative contingencies of reinforcement associated with operant and classical conditioning (Blaszczyński and Nower 2014, p. 204).

Similar to behavior therapy, CT is seldom employed as the only treatment modality in treating programs. It is more common to combine it with behavior therapy and cognitive behavioral therapy, which we will discuss in the next section.

## 5.5 Cognitive Behavior Therapy (CBT)

CBT is perhaps the most extensively used therapeutic modality for problem gambling. Blaszczynski and Nower (2014) have made an excellent outline of how to translate the cognitive behavioral therapy into clinical practices. A good treatment should begin with a thorough assessment of the etiology and the symptoms of the problem gambler. The design and the implementation of the treatment program have to take into consideration the heterogeneity of the characteristics of the problem gambler. A seasoned therapist will begin by assessing the pathway development of the gambler. One appropriate means to understand the motivation and the developmental history of the individual is with the Blaszczynski and Nower (2002) model of problem gambling. To start the assessment process, the therapist has to investigate the details and the background of the person. This process is crucial for making an accurate diagnosis of the problems of the person before a treatment plan can be made. The plan should be geared to the specific cognitive patterns and behavior of the client. Average treatment sessions of CBT are about eight to twelve. In Chap. 6, we will present a critical review of CBT and propose a theoretical model for treating problem gamblers in Hong Kong and Macau. Now, we will turn to other therapeutic perspectives.

## 5.6 Mindfulness-based Practice

Mindfulness-based practice finds its origins from Buddhist and Hindu traditions. Professionals with this theoretical orientation stress the employment of focused attention, meditation and programmed relaxation in treating clients with psychological problems. Among the first pioneers in mindfulness, Jon Kabat-Zinn opened a mindfulness clinic in University of Massachusetts Medical School in 1979, providing stress management to patients with psychosomatic problems. One of the newest developments in mindfulness practice and therapy is the integration of the more traditional psychological therapy into the treatment protocol. Mindfulness-based cognitive therapy (MBCT) is initially designed to reduce relapse among patients with major depression (Segal et al. 2002, 2013). Theoretically, MBCT combines cognitive therapy with mindfulness training. The participants in this therapy are taught techniques of focused attention in the present moment and non-judgmentally to the unfolding of experience moment by moment (Kabat-Zinn 1990). Usually, a treatment program with MBCT is structured with eight-weekly group sessions, with each session being 2–2.5 h in length. A group format is the usual norm with 10–15 people in each class. To extend the treatment effects, participants are encouraged to have mindfulness practice every day at home.

Applied in the context of gambling disorders, mindfulness therapy helps the participants focus their attention on their urges, cravings, and the internal cognitive decisions and patterns. Urge surfing is a mindfulness technique, where the gambler

is trained not to fight the cravings and urges of gambling; rather, he/she is trained to “ride” and subjectively experience such urges. With the passage of time and focused efforts, the cravings should subside and disappear. The success of mindfulness on treating problem gambling rests on the common research findings that gamblers often experience a trance state while gambling (Brown 2002). Such a trance state might be a form of emotional escape, where the gambler gambles and places his/her bets outside of his/her consciousness. Thus, mindfulness training helps the patient to accurately appraise and appreciate the subjective feelings and concerns. The training is not limited to treating gambling and addictive disorders; it is also a therapy for personal growth and development.

Outcome studies of the effectiveness of mindfulness as a treatment modality for problem gambling are not many. In Canada, Chen et al. (2014) evaluated an 8-week mindfulness group program in the Problem Gambling Institute of Ontario at the Center for Addiction and Mental Health. There were 17 participants ( $M = 15$ ,  $F = 2$ ) in the program. Prior to the beginning of the program, all participants completed the Mindfulness Attention Awareness Scale (MAAS) (Brown and Ryan 2003), which assesses their level and ability to mindfully attend to their subjective world and their environment. Then, the participants joined an eight-week mindfulness training program. At the close of the program, the participants were assessed again on the MAAS. Significant improvement in mindfulness (from 3.65 in pretest to 4.40 in post-test;  $t = 4.9$ ,  $p < 0.001$ ) among the participants was shown. Qualitative analysis on the responses of the participants indicated that they demonstrated increased awareness of triggers and ability to cope, feeling calmer, more relaxed, with better interpersonal skills and more patient, improved self-discipline, control over gambling, and positive experiences in their lives. However, there are several limitations in this study. Firstly, there was no control group. Secondly, the study did not assess the participants’ gambling severity. Thus, the increase of mindfulness may not translate to a reduction of gambling behavior in an actual gambling setting. Future investigations are warranted to look into this aspect.

Since 1997, mindfulness-based therapy has been promoted in hospitals, community centers, and family centers in Hong Kong and Macao. But to date, few gambling treatment specialists have employed this treatment in helping problem gamblers.

## 5.7 Gamblers Anonymous

Gamblers Anonymous (GA) was founded as a self-help fellowship in the USA in 1957. It began when two gamblers, both males and each carrying a history of troubles and problems in excessive gambling, decided to help each other through mutual support. They met regularly and through mutual encouragement, neither returned to gambling again. In the absence of professional guidance, the two men helped each other through their will power and character changes (Bellringer 1999). Three fundamental elements of this special “self-help” friendship have become the



backbone of GA groups: sharing and mutual support in a group, brotherhood in a closed fellowship, and the absence of professional counselors (Chan and Ohtsuka 2010).

The success story of the two has attracted popular media attention. The first meeting of Gamblers Anonymous was held in Los Angeles, California, September 13, 1957. At that meeting, there were thirteen participants. Among them, there were problem gamblers, housewives, and individuals with alcohol problems who did not have any gambling problems. During the meeting, they shared their experiences and stories in gambling and through mutual support and they helped each other develop personal control on their gambling.

Ferentzy et al. (2006, 2009, 2010, 2014) have presented a number of papers on GA. Compared to Alcoholics Anonymous (AA), GA is less theocratic in spirituality. In other words, GA does not require the participants to follow a Christian fellowship as a requirement in the treatment. Many GA groups are not affiliated with any Christian groups. The only requirement for continued membership is the desire to stop gambling behavior. Financially, there are no statutory fees for membership. As most GAs do not receive any financial support from government, members support their organization through voluntary contributions.

In Hong Kong and Macao, GA groups share most of the fundamental characteristics of GAs in the USA: sharing of life stories and experiences as the focal part of the meeting, the absence of professional helpers, and fellowship and brotherhood among members (Chan 2014). Some GA chapters are operating with the support of the Christian church, while a few, e.g., the Even Centre, receive funding from the Hong Kong Jockey Club.

Very often, GA groups in Hong Kong and Macao help gamblers through three channels: 24-h helpline, small group meetings, and individual counseling. The helpline is often staffed by members of the GA group. Callers are given brief counseling over the phone. They are then invited to attend a meeting at night. The meetings are often modeled on the 12-step approach. Outside the area of gambling, the group leaders can help newcomers deal with financial crises. GA groups never loan money to the problem gamblers. But they will help the participants manage their financial issues.

GA is a neglected area of research among gambling researchers in Hong Kong and Macao. To date, only a few empirical investigations have been published. Chan and Ohtsuka (2011a, b), for example, have investigated into the pathway development of 17 gamblers in a GA in Hong Kong. The researchers employed the Blaszczynski and Nower (2002) model. The researchers found that the majority of the problem gamblers could be classified as behaviorally conditioned gamblers. These individuals usually came from a family that condoned or even encouraged gambling activities. Their gambling started in childhood, and some suggested that gambling was their best pastime. Very often, they did not experience any significant psychological problems prior to the development of gambling problems. Their psychological problems were often the consequences of their excessive gambling. Compared to emotionally vulnerable gamblers and antisocial/impulsivist gamblers, behaviorally conditioned gamblers are more positive toward psychological treatment.



### ***5.7.1 The Twelve-step Recovery Program***

The twelve-step recovery program forms the basis of how GA works. Modeled on the Alcoholics Anonymous (AA) in the USA, the 12-step program intends to help the members make commitment and personal changes and development through a step-by-step program.

The following is the list of the twelve steps (Gamblers Anonymous International Service Office, GAISO 1999)

- |             |   |
|-------------|---|
| Step One    | We admitted we were powerless over gambling—that our lives had become unmanageable.   |
| Step Two    | Came to believe that a Power greater than ourselves could restore us to a normal way of thinking and living.  |
| Step Three  | Made a decision to turn our will and our lives over to the care of this Power of our own understanding.   |
| Step Four   | Made a searching and fearless moral and financial inventory of ourselves.   |
| Step Five   | Admitted to ourselves and to another human being the exact nature of our wrongs.  |
| Step Six    | Were entirely ready to have these defects of character removed.   |
| Step Seven  | Humbly asked God (of our understanding) to remove our shortcomings.   |
| Step Eight  | Made a list of all persons we had harmed and become willing to make amends to them all.   |
| Step Nine   | Made direct amends to such people wherever possible, except when to do so would injure them or others.  |
| Step Ten    | Continued to take personal inventory and when we were wrong, promptly admitted it.  |
| Step Eleven | Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of his will for us and the power to carry that out. |
| Step Twelve | Having made an effort to practice these principles in all our affairs, we tried to carry this message to other compulsive gamblers.   |

The twelve steps represent the phases of recovery of a problem gambler. The first phase of recovery is to admit personal guilt and problems in gambling. Then, the gambler has to surrender his/her life to God or a higher order and make significant changes in his/her lifestyles and behaviors. The participants' recovery process is a lifelong process, where the gambler has to continually seek God's guidance in their lives and help other gamblers with similar problems.

### ***5.7.2 Effectiveness of the Twelve-step Program***

There have been several empirical attempts to validate the usefulness of GA as a treatment modality (e.g., Petry 2002; Potenza 2002; Steward and Brown 1988). Johnson and Nora (1992) found that 20 out of 44 gamblers whose spouses were present at meetings stopped gambling for at least four years, compared with 13 out of 46 gamblers whose spouses did not participate. Although this finding was not statistically significant, it demonstrates, nonetheless, the impact of GA together with the support of significant others. Among all evaluation studies, the most cited one in the support of the effectiveness of GA is Stewart and Brown (1988). The researchers reported that among 232 attendees in a GA, the total abstinence rate was 8 % after one year of their first attendance and 7 % after two years. The low rate of success might be due to the lack of professional helpers in the meeting and the high dropout rate. More recently, in an excellent review on the effectiveness of GA, Ferentzy et al. (2014) write:

The most prudent position to take is that GA is arguably helpful to many, but arguably incomplete and thus best used in conjunction with - or as an adjunct to - other interventions..... (Ferentzy et al. 2014, p. 253).

### ***5.7.3 Group Counseling and GA in Hong Kong and Macao***

Group counseling is the treatment of choice in problem gambling treatment centers in Hong Kong and Macao. As of 2015, there are less than twenty registered non-profit agencies that provide treatment for problem gamblers in Hong Kong and Macao (the addresses and Web sites of the majority of these agencies are listed in Appendix A and Appendix B). Among these centers, some agencies are associated and supported by Christian groups. Examples are the Industrial Evangelistic Fellowship and the Kei Yam Family Services Centre. Grounded on the Christian perspective, these two groups provide group counseling to problem gamblers. The authors of this book have visited these centers on numerous occasions. The group counseling is usually held on a weeknight. There are usually 40–50 participants. The leaders in this group meeting are the pastors, who have little academic qualifications in psychology and counseling. Very often, they would employ the spiritual intervention (Christianity in nature) approach as their main treatment modality. In this approach, the pastor frequently prays with the problem gamblers and helps them to establish a Christian way of living. The reduction of gambling behavior is secondary to being saved by the grace of God and becoming a Christian (Pastor Siu, personal communication with the second author, 28 March, 2015). To Pastor Siu and the majority, if not all, of the Christian churches, problem gambling is a sin. It is only through the grace and help of God that the problem gamblers can recover. In these groups, the emphasis is on spiritual development rather than intensive psychotherapy.

In July 2014, Chan and his psychology students from Upper Iowa University (Hong Kong Campus) presented a paper assessing the methodology and effectiveness of two Christian treatment groups in Hong Kong in the International Conference on Gaming, Leisure and Entertainment held in Macao Polytechnic Institute (Ho et al. 2014). Employing a qualitative research method, the researchers compared the twelve-step recovery program of Problem Gambling Prevention and Treatment Association (PGP) and the spiritual intervention approach of Kei Yam Family Services Centre (KY). The purpose of their study was to analyze the treatment techniques and compared the effectiveness of these two service centers. KY is a family social services center. It receives funding from the church, and the leader of the church is the head of the agency. PGP, however, is an independent self-help group. It depends on the voluntary contribution of the members. Both of them hold fellowship or peer group meetings once a week in the evening. The meetings usually start at seven o'clock in the evening and end at half past ten. KY has group counseling meetings in the format of fellowship every Thursday evening. The content of the fellowship includes prayers and worship in the first hour of the fellowship, individual sharing sessions and Bible teaching by the pastor in the second hour, and small group sharing in the last hour of the gathering. During the group sharing sessions, the pastor would ask their members to share their life experiences.

In contrast, PGP utilized a modified version of the twelve-step recovery program (Table 5.3). Compared with the traditional version of the twelve-step recovery program, the modified one displayed some distinct features which were more user-friendly to problem gamblers in Hong Kong (Table 5.4). The size of PGP was relatively smaller than that of KY, mainly consisting of 8–10 members (all were problem gamblers). The group leader is Daniel Cheung, a recovered problem gambler (Figs. 5.1, 5.2).

**Table 5.3** Modified version of the twelve-step recovery program (*Source* Yeung et al. 2014, July)

Step 1	Facing and admitting the gambling problems honestly
Step 2	Making promise to quit gambling in front of all group members to enhance confidence
Step 3	Moving forward by opening your heart to others and be ready to change your behaviors
Step 4	Reviewing relationships and taking up responsibility
Step 5	Overcoming problems in life and being accepted by all group members
Step 6	Setting goals and getting ready to change
Step 7	Restructuring your thoughts and modifying your behaviors
Step 8	Listing harms to others and reflecting on yourself
Step 9	Repairing or compensating to others, planning for future
Step 10	Monitoring progress and always alert of your problems
Step 11	Building up your ego strength to overcome gambling urges
Step 12	Helping others when you have overcome gambling problems

**Table 5.4** Comparison of the traditional and modified versions of the twelve-step recovery program in Hong Kong

Spiritual invention (KY)	Modified 12-step program (PGP)
Based on Christianity	No particular religious background
Emphasize religious and spiritual aspects	Emphasize education and knowledge
Sharing past experiences	Sharing past experiences
Prayer is a must	Group activity is the central component

**Fig. 5.1** Pamphlets (in Chinese) telling people not to gamble (*Source* Kei Yam Family Services Centre, Hong Kong). (Photo by Li Wai Lim on March 15, 2015)



**Fig. 5.2** Books (in Chinese) on actual stories of gamblers and their recovery (*Source* Kei Yam Families Services Centre, Hong Kong). (Photo by Li Wai Lim on March 15, 2015)



In the paper, Chan and his students interviewed thirty-five participants, including 20 males from PGP and 15 participants (11 males, 4 females) from KY. Participants’ ages ranged from 20 to 65, the majority of whom gambled less than 5 years. During the interviews with the researchers, the participants shared their individual and family problems with the researchers. The following table lists out the similarities and differences between the two institutions in terms of motivational interviewing (MI), cognitive restructuring (CS), family therapy, and lifestyle modification.

**Table 5.5** Comparison of the two treatment centers (*Source* Yeung, Wu, Wong, Ho, & Chan (2014, July))

	Kei Yam Family Services Centre	PGP
Clients	Problem gamblers and their family members	Mainly problem gamblers
Similarity	1. Adding spiritual/religious elements to enhance treatment effects	
	2. Setting unique and concrete goals to help the participants establish healthy lifestyles	
Difference	Christian-based institution	Non-Christian-based institution

Findings of the present study indicate that the two institutions help problem gamblers with a number of treatment approaches. These are as follows:

1. Motivational interviewing (MI): Both centers emphasize this in the initial stage of intervention. Both postulate that problem gamblers should be responsible for their own gambling behaviors. They have to actively participate in the fellowship/peer group in order to resume a healthy individual lifestyle without gambling.
2. Cognitive restructuring (CR): PGP employs a modified version of the twelve-step recovery program to help problem gamblers, while KY uses manuals of their own design (including brochures, course notes, and prayers) to help problem gamblers. Both institutions share the same concept that the treatment on gambling is a lifelong process.
3. Family therapy: Both emphasize the importance of family support in the rehabilitation of problem gamblers.
4. Lifestyle modification: Both institutions stress changing the problem gamblers’ lifestyles. According to Lai (2008), environmental factors and peer influence are the two most significant factors in determining the gambling behaviors and the recovery process of problem gamblers. Along this aspect, the two institutions put much effort to (1) help gamblers avoid high-risk situations where they were likely to relapse; (2) expand their social and interpersonal networks by inviting them to participate in social activities; and (3) build up their rapport with other group members (Table 5.5).

5.7.4 Gam-Anon

Alongside many Gamblers Anonymous groups, Gam-Anon is a meeting for partners, parents, family, and friends of problem gamblers. These meetings normally take place on the same day, place, and time as the Gamblers Anonymous meeting, but in a separate room. It provides an opportunity for the family members to examine and adjust to his/her spouse’s problems (Belleringer 1999; Ferentzy et al. 2010).

There are three basic values to the Gam-Anon group. These are to help members to (1) understand they are addicted to gambling and how it affects both the gambler and themselves; (2) think and act constructively by sharing personal experiences; and (3) regain self-respect and confidence and develop an assertive approach to their own lives. However, research targeting spouses or family members of problem gamblers are limited. At the time of writing, there are no Gam-Anon in Hong Kong and Macao. One possible reason is the difficulties of inviting family members to attend.

In conclusion, problem gambling is a biopsychosocial disorder which needs multimodal treatment approaches to intervene. In the current practice of problem gambling treatment in Hong Kong and Macao where pharmacotherapy is not actively prescribed by local psychiatrists, the treatment of choice is CBT with GA as an adjunct therapeutic option. In the next chapter, we will present a systematic review on CBT and propose a multimodal treatment approach for Chinese problem gamblers.

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## Chapter 6

# The Review on CBT and a Multimodal Treatment Model for Problem Gamblers

Cognitive behavioral therapy (CBT) is currently the most accepted and widely used psychological treatment modality for gambling disorders. Conceptually, CBT consists of two components: behavioral therapy and cognitive formulations. In the behavioral perspective, the therapist applies learning principles in changing the gambler's behavioral patterns. Commonly employed behavioral techniques include punishing gambling behavior by use of aversive stimulus, substitution of gambling behaviors with pleasant and healthy behaviors, financial planning and limit-setting, stimulus control, imaginal desensitization, in vivo-exposure and response prevention and relapse prevention training, and teaching coping skills and assertiveness and refusal skills for gambling. In the cognitive part of the therapy, CBT aims at helping the client identify his/her distorted thinking and cognitive biases. Treatment techniques include problem-solving, cognitive restructuring techniques that intend to modify the distorted thinking and biases.

In the following paragraphs, we will discuss the effectiveness of the various CBT techniques on the treatment of problem gambling. Special relevance will be emphasized on their application to Chinese gamblers.

### 6.1 CBT Studies: Early Years

The earliest studies were mostly reported as single case studies. Bannister (1977) undertook a single case study and found that CBT was effective in reducing the intensity, frequency, and urge of gambling in a compulsive gambler. The study employed a simple ABA design, where the gambler was given a CBT treatment. Bujold et al. (1994) recruited three pathological gamblers (aged 26–42 years) and treated them with a 4-week CBT program. The CBT program included cognitive interventions, problem solving, and relapse prevention. After 4 weeks, all of them stopped gambling behaviors. Treatment effects were maintained 9 months after cessation of the program. Arribas and Martinez (1991) presented a case report of

four pathological gamblers (one male and three females), who were treated with CBT and family therapy in a mental health center in Spain. Post-treatment analysis showed that all of them reduced their gambling. However, the study did not report any follow-up for the participants. There are a number of limitations in the early studies employing CBT as a treatment modality. These studies mostly recruited a single subject or a few samples without control groups. Thus, the external validity of these case report studies is not strong.

## 6.2 Recent CBT Research Studies

Compared with the abundant treatment evidence of CBT on substance abuse (such as use of alcohol) and nicotine dependence, evaluation of CBT for problem gambling has fallen behind due to lack of methodological rigor of research studies (Gooding and Tarrier 2009). There are only a small number of randomized controlled trials (RCTs) on CBT with problem gambling, especially in Hong Kong and Macao (Wong et al. 2014). Studies employing RCT demonstrate more internal validity than case studies because of its research design, methodological rigor, effect sizes, and generalizability of findings. Most of the reported RCTs supported the effectiveness of CBT in treating problem gambling using different modalities of CBT techniques (Raylu et al. 2013). The following is a list of empirical studies on the effectiveness of CBT on problem gambling.

Echeburúa et al. (1996) compared the treatment effectiveness of three CBT modalities including: (1) individual stimulus control and exposure with response prevention; (2) group cognitive restructuring; and (3) combined treatment modalities 1 and 2, toward 64 pathological gamblers (mean age: 35) who were addicted to playing slot machines. A waiting-list control was used to compare treatment effects of CBT. Repeated measures were recorded at pretreatment, immediately post-treatment, at 1, 3, 6, and 12-month follow-ups. Results showed that the group employing the techniques of stimulus control and exposure with response prevention had a higher success rate of giving up gambling as compared to the groups using cognitive restructuring, combined treatment modalities, and the control groups. At 6-month follow-up, the difference between the success rate of the individual stimulus control and exposure with response prevention (75.0 %) and the cognitive restructuring group (62.5 %) does not demonstrate statistically significant difference.

Ladouceur et al. (2001) reported a validation study with 66 pathological gamblers who were randomly assigned to treatment or wait-list control conditions. The treatment group was taught cognitive techniques on cognitive errors and randomness in gambling. Relapse prevention was then employed on the treatment group. Outcome measures were their responses on the South Oaks Gambling Screen (SOGS) (Leisuer and Blume 1987), the number of DSM-IV criteria for pathological gambling endorsed by participants, and the gamblers' perception of control, frequency of gambling, perceived self-efficacy, and the desire to gamble. Post-test results indicated the treatment group had overall significantly better

outcomes than the control group. The therapeutic effects could be maintained at 6- and 12-month follow-ups. Two years later, Ladouceur et al. (2003) recruited 58 pathological gamblers. 34 of them were randomly assigned to the group of cognitive treatment while 24 were sent to the control group. Cognitive correction techniques targeting erroneous perception on randomness and relapse prevention were employed as treatment techniques. Post-treatment assessment showed that 88 % of the participants in the treatment group no longer met the DSM-IV criteria for pathological gambling while only 20 % in the control group remitted from pathological gambling. Changes were observed on all outcome measures. Again, the therapeutic effects were sustained at 6-, 12- and 24-month follow-ups. Summing up, the findings of these three studies indicated that CBT is an efficacious treatment modality for problem gambling.

Gooding and Tarrier (2009) selected 25 high-quality CBT studies for systematic review. All of these 25 studies had substantial component of cognitive behavioral techniques and had control groups. Gooding and Tarrier used the Clinical Trials Assessment Measure (CTAM) (Moher et al. 1995, 2001) to assess the methodological quality of these 25 research studies, with higher CTAM scores reflecting more rigorous research methodology (better quality) and larger effect size (Tarrier and Wykes 2004). Research studies having the highest CTAM scores were Hodgins et al. (2001); Petry et al. (2006, 2008), with their scores being 48, 67, and 84, respectively. CTAM scores among 25 included research studies ranged from 9 to 84, with the mean and the median being 41.6 and 43, respectively.

Hodgins et al. (2001) recruited 102 participants in rural and urban areas in province of Alberta, Canada. 35 of them were assigned to the group of self-help workbook (Group 1). 32 participants were allocated to receiving a motivational enhancement telephone intervention and a self-help workbook (Group 2). The remaining 35 volunteers were placed in wait-list control (Group 3). Results demonstrated that 84 % of participants reported a significant reduction in number of days involved, money used, and salary spent in gambling over a 12-month follow-up period, with the participants receiving brief motivational enhancement and self-help workbook performing better than the group with self-help workbook only at post-treatment, 3-, 6-, and 12- month follow-up periods. At the 12-month follow-up, the abstinence rates of group 2 versus group 1 were 29.6 and 21.4 %, respectively. Among the treatment methods the researchers selected, motivational enhancement and self-help workbook group had a better outcome than self-help workbook group for those with less severe gambling problems only. The findings support the effectiveness of a brief treatment as an option for gamblers with less severe problems.

Petry and her colleagues undertook two studies of CBT in 2006 and 2008. In 2006, Petry and her colleagues investigated the efficacy of individual CBT and Gamblers' Anonymous (GA) for pathological gambling. They randomized 231 pathological gamblers into (a) GA referral treatment ( $N = 63$ ), (b) GA referral plus a cognitive behavioral workbook treatment ( $N = 84$ ), or (c) GA referral plus 8 sessions of individual CBT ( $N = 84$ ). The individual CBT was held one hour per week for eight weeks, with specific topics in each session such as discovering triggers of gambling (week 1), functional analysis of gambling (week 2),

self-management planning (week 4), teaching refusal skills and assertiveness (week 6). Outcomes included the participants' scores on the SOGS (Leiseur and Blum 1987) and the Addiction Severity Index (ASI) (McLellan et al. 1988), number of gambling days, and money spent in gambling. The assessment was taken at baseline, post-treatment, and at 6- and 12-month follow-ups. Results indicated that GA referral plus individual CBT illustrated a significantly better abstinence percentage (about 45 %) than GA referral plus CBT workbook (about 30 %) and GA referral alone (about 25 %) in the past 30 days at the post-treatment evaluation, with some therapeutic effects sustained throughout 12-month follow-up period. Individual CBT with adjunct GA attendance yielded a significantly better abstinence rate than those who did not attend GA. Further, attendance at GA and the number of CBT sessions or workbook chapters completed were associated with gambling abstinence at 12-month follow-up. Petry's study suggested the efficacy of a brief CBT (eight sessions) approach with attendance of GA as an adjunctive treatment in reducing pathological gambling.

Petry and her colleagues reported another CBT study in 2008. They randomly divided 180 participants with problem gambling into (a) control group ( $n = 48$ , for assessment only), (b) 10-min brief advice on the risk factors and development of problem gambling as well as brief strategies in reducing gambling ( $N = 37$ ), (c) one 50-min session on motivational enhancement therapy (MET) after the initial assessment was done ( $N = 55$ ), and (d) 1 session of MET plus 3 sessions of CBT held in the subsequent weeks after receiving MET ( $N = 40$ ). Measurements were gathered at initial stage (pretreatment), at week 6, and at 9-month post-treatment. The participants' scores on the ASI (McLellan et al. 1988) and dollars spent in gambling were the two outcomes from this study. Results showed that a 10-min brief advice group significantly reduced gambling at week 6 (indicated by lower ASI scores and less money spent in gambling) compared to the control, MET, and CBT plus MET groups. The brief 10-min advice group was also significantly associated with gambling reduction at 9-month post-treatment. However, CBT plus MET significantly reduced gambling on ASI scores and had a significantly better therapeutic effect in gambling reduction compared with the control, brief advice, and MET conditions at 9-month. Petry concluded that a very brief intervention may have a therapeutic effect of reduction in problem or pathological gambling among those who were less likely to seek treatment. In addition, the combined MET and CBT had a longer treatment carryover effect than solely brief advice or a single session of MET only.

### **6.3 Comparisons of CBT with Other Relevant Interventions**

The literature on treatment of problem gambling indicates the effectiveness of CBT on problem gambling. Is individual CBT or group format CBT more effective? And if CBT is accompanied by other treatment modalities, is there any additional therapeutic effect? The following section is a summary of current findings on these two issues.

### **6.3.1 Individual CBT Versus Group Format CBT**

In 2010, Raylu and Oei published the book, “*A Cognitive Behavioral Therapy Program for Problem Gambling*,” which provides a protocol for outpatient treatment of problem gambling. The treatment protocol comprises ten core and three elective sessions. As with other CBT manuals, the initial core session is the assessment of the participant’s problems and the second core session is psychoeducation. The third to tenth core sessions cover cognitive and behavioral strategies, relaxation, imaginal exposure, problem-solving skills, management of negative emotions, and relapse prevention. The three elective sessions emphasize teaching assertiveness skills, debt management, and helping significant others of problem gamblers (e.g., spouses) cope with situations or difficulties caused by gambling problems. Raylu and Oei reported that both individual and group CBT had better treatment outcomes compared to controls. There were no statistical differences between the effectiveness of individual and group CBT.

Oei et al. (2010) performed an RCT to compare the effectiveness of group and individual CBT program and motivational interviewing (MI) for problem gambling. The investigators recruited 102 problem gamblers living in Brisbane, Australia, and randomly assigned them into: (a) individual CBT plus MI ( $N = 35$ ); (b) group CBT plus MI ( $N = 29$ ); and (c) a 6-week wait-list condition ( $N = 28$ ). Outcome measures included participants’ gambling cognitions, psychological states, life satisfaction, average amount of money gambled per day, and frequency of gambling, which were measured at pre-treatment, post-treatment, and 9-months after cessation of the program. The results showed that participants in the individual and group CBT plus MI programs had more significant improvement than wait-list group in all aspects of outcome measures. The therapeutic effects could be maintained up to 6-month follow-up period. 71–93 % participants in the individual CBT program and 68–93 % in the group CBT program demonstrated significant improvement for all outcome measurements at post-treatment period. However, no significant statistical differences in outcome measures were found between the individual and the group CBT program except that participants in the group CBT spent more money on gambling per day.

To date, most of the validation studies concluded that CBT, either in an individual or group format, out-performs wait-list control in helping participants with gambling problems and the carryover effects could be maintained at least 6 months after the CBT program is completed.

### **6.3.2 CBT Plus GA Versus GA Alone**

While CBT is supported by plenty of empirical evidence on its effectiveness in treating problem gambling, Gamblers Anonymous (GA) lacks substantial research evaluation as an efficacious treatment for problem gambling (Ferensky et al. 2014).



Recently, a few research studies focused on comparison of CBT and GA in the treatment of problem gambling have been reported. Toneatto and Dragonetti (2008) examined the theoretical foundation of the twelve steps of GA and compared its intention and strategies with CBT. They argued that the conceptualization of twelve-step program in GA largely resembles CBT programs. Thus, it is appropriate to integrate the two treatments in helping gamblers.

Petry et al. (2007) compared the treatment effects of CBT plus GA group and GA group alone among 127 pathological gamblers in an outpatient setting. The measured outcomes of the treatment effects included the participants' scores on the Coping Strategies Scale (CSS) (Prochaska et al. 1988), days gambled and dollars spent in the previous month. The assessment was taken at pre-treatment, 2 and 12 months later. In general, coping skills of both groups (as measured by CSS scores) improved in short-term but the overall level of coping skills of participants in CBT plus GA group were significantly better than those in GA alone. CBT plus GA had more short-term benefits in reducing gambling behaviors and altering coping skills than GA alone, but the beneficial effects could not be maintained over the long-term. However, another study found no significant difference between CBT and GA in the frequency of gambling, the amount of money spent in gambling, and the abstinence rates at 12-months after completing the treatment interventions (Toneatto and Dragonetti 2008).

In conclusion, it is fair to argue that CBT teamed with GA is more effective in reducing gambling behaviors and helps problem gamblers improve their coping skills in a short-term period. It is advisable that the treatment manual starts with a two-week program of motivation enhancement, followed by eight weeks of CBT intervention. After this intensive individual program, problem gamblers should then continue to maintain the treatment effects by participating in GA weekly.

### **6.3.3 CBT Plus Pharmacotherapy**

To date, there have been only a few studies that combine CBT with pharmacotherapy (e.g., Myrseth 2011). Ravindran et al. (2006) reported that the combined use of CBT and paroxetine, a short half-life selective serotonin reuptake inhibitor (SSRI) employed to treat depression, were effective for treating problem gambling. The researchers randomly assigned 34 problem gamblers in a 16-week study into one of the following groups: the paroxetine group ( $N = 12$ ); individual CBT plus placebo group ( $N = 12$ ) or a combined individual CBT plus paroxetine group ( $N = 10$ ). Outcome measures included the Yale Brown Obsessive Compulsive Scale for Pathological Gambling (PG-YBOCS) (Pallanti et al. 2005) and the Gambling Symptoms Assessment Scale (G-SAS) (Kim et al. 2007). CBT plus placebo group and combined individual CBT plus paroxetine group produced significantly better outcomes than paroxetine alone at eight weeks of the study. Although there was no statistically significant difference among the three treatment groups in PG-YBOCS at the end of the study (at week 16), the combined individual



CBT plus paroxetine group had the most rapid reduction in G-SAS. The remission rate reached 83 % in the combined individual CBT plus paroxetine group, compared with 69 % in the individual CBT plus placebo group and 37 % in paroxetine alone group. Limitations of this study were small sample sizes and high dropout rate (44 %) as only 19 subjects completed the study. Nevertheless, the addition of pharmacological treatment to traditional CBT very likely increases the efficacy of treatment for problem gambling.

### **6.3.4 *Meta-Analysis of CBT RCTs***

Pallesen et al. (2005) reported a meta-analysis including 22 RCTs published between 1968 and 2004, concluding that psychological treatments were more effective than having no treatment at both post-treatment and 17 months (on average) follow-up. Another meta-analysis was performed by Gooding and Tarrier (2009), who found that CBT is an efficacious treatment strategy and positive outcomes of the treatment can last up to 24-month at follow-up. In general, different modes of therapy (individual, group format, and self-directed) were found to be beneficial for problem gambling. Nevertheless, the meta-analysis left a few questions to be resolved. For example, the best parameters (e.g., frequency and duration of CBT) and the form of CBT (traditional or modified) are yet to be determined. Another concern is the application of CBT to Chinese gamblers as CBT was originally developed and formulated in Western countries.

### **6.3.5 *CBT Studies in Hong Kong and Macao***

In Hong Kong and Macao, there have been few reports of CBT studies on problem gambling. Recently, Wong et al. (2014) reported an RCT on the effectiveness of a “culturally attuned” program for Chinese problem gamblers in Hong Kong. In this innovative treatment program, 38 problem gamblers, all males, were randomly assigned to a treatment group ( $N = 18$ ) and a control group ( $N = 20$ ). The experimental group joined 10 weekly sessions of group CBT and individual counseling sessions. The CBT treatment group received motivational enhancement, identification of triggers for gambling, understanding of the cognitive biases in gambling, learning of behavioral and cognitive strategies for change and relapse prevention. The control group participants received individual counseling which included debt counseling, grief counseling for loss, family and marital counseling, and crises intervention. The authors termed this program of counseling as “routine individual counseling.” The researchers reported that the treatment group benefited more as they reduced their gambling significantly after the treatment. The limitation of this study lies in the construct validity of the treatment measures. In the paper, the authors do not clearly explain the details of the proposed “culturally attuned”

program and its basic differences with the “routine treatment.” Detailed examination of the report indicates that the “culturally attuned” program bears a number of similarities with Petry’s (2005b) proposed program. There is not a single statement in the report on how this CBT treatment was “culturally attuned” to the needs of the Chinese clientele. Secondly, the researchers argue that the decrease of distorted gambling beliefs of the experimental group was associated with the decreases in gambling urges and severity. This conclusion may be inflated or even biased as the number of participants in the experimental group ( $N = 18$ , all males) is too small to support a valid regression analysis and conclusion. As there are significant cultural differences between Chinese and Western countries, more caution is called for in the design of CBT treatment programs.

## **6.4 Intervening Chinese Problem Gamblers with CBT: Some Thoughts and Considerations**

### ***6.4.1 Collectivism in Chinese Society***

When compared to Western countries, the Chinese society is basically a collectivist culture (Lam 2014). Researchers have made some excellent observation on Chinese culture and Chinese gambling (Chan 2014; Loo et al. 2008; Oei and Raylu 2007). Chan (2014), in his keynote to the medical association in Macao, has highlighted on the cultural differences in the attitudes between Chinese and Westerners on issues of gambling. The Chinese culture emphasizes the family as the fundamental pillar of the community. The strong father figure is most important in maintaining the integrity of the family and the stability of society. As the patriarch of the family, the father is often depicted as a brave and strong character. He is responsible for all the important decisions, especially on financial and moral issues, of the family. As a leader, he is not expected to show his negative emotions in front of his family. Saving face is a pertinent issue. Thus, it is very difficult, if not impossible, for the father to admit that he is a problem gambler in front of his family as Chinese often see problem gambling as a social disgrace and taboo. The gambling fathers might even deny that they have gambling disorders. Thus, family therapy, in which all family members should participate, is often not the treatment of choice among Chinese problem gamblers. Instead, the individualized CBT is often more preferred as the treatment take into the account of the issues of embarrassment and shame for Chinese problem gamblers (Lin 2002). Helping the client to alleviate his guilt and shame should thus be an integral part of the therapeutic modality in a collective society.

Recent research on treatment for gamblers in Japan can demonstrate how individuals from a collectivist community can benefit from therapy focused on relieving guilt and shame. The most popularly games in Japan are Pachinko and slot machines. Game centers featuring the most sophisticated slot machines are highly accessible and available in the community. Higuchi (2008) reported that the

prevalence rate for pathological gambling was 5.5 % among Japanese adults. The second author of this writing visited Shinjuku in 2014 and was amazed to discover that Pachinko centers are in every street corner in this commercial and tourist district. There were a good number of office workers, mostly males, who would play Pachinko after work. Some would stay till midnight. To them, and perhaps a lot of Japanese adults, playing Pachinko is like having a martini or beer after work. Game centers are venues where they can relax and enjoy after a day in the office.

Naikan therapy and CBT are frequently employed for the treatment of problem gamblers in Japan. Naikan therapy is based on self-reflection and insight development where the patients are led to develop guilty feelings toward themselves and their beloved ones and learned to forgive their own behaviors (Chervenkova 2014). Komoto (2015) reported a single case study of a 66-year-old female problem gambler. She has an unhappy childhood as she was abused by her violent and alcoholic father. At aged 37, she began to gamble on Pachinko. In her early 40s, she sent her mother to elderly home as she gambled more frequently. The woman started to gamble excessively after the death of her mother. In the treatment, she received three brief sessions of Naikan therapy plus three sessions of CBT (each for 1 h). Through Naikan therapy, the woman learned to forgive herself and her alcoholic father. When her emotional concerns were addressed, she was able to abstain from gambling. This successful case indicates that in a traditional collective society like Japan and China, the treatment specialists need to address the guilt and emotional problems of the gamblers in order to help them. In this regard, CBT together with Naikan therapy will be the appropriate package for this clientele.

### **6.4.2 *Somatization of Emotional Problems***

Problem gambling is often viewed as a stigma of shame in the Chinese society (Oei and Raylu 2007). Very often, Chinese problem gamblers do not actively seek psychological treatment. For those who come for counseling, they often mask their psychological problems, rather unconsciously, by either under-reporting their problems or converting their psychological problems into somatic complaints (e.g., loss of appetite, fatigue, heightened state of arousal, and insomnia). It is especially common for those who are emotionally vulnerable problem gamblers (Pathway 2 of the Blaszczynski and Nower Model 2002). Thus, therapists need to pay particular concern to their somatic presentation with an accepting tone rather than challenging them (Sue 1997). Their somatic complaints have to be treated with CBT and pharmacologically. In addition to the symptomatic relief, therapists or counselors would need to explore the clients' underlying problems (i.e., their gambling problems), but this should be based on a trusted therapeutic alliance between the helping professional and the client.

### **6.4.3 Medicalization of Psychological Problems**

In the Chinese culture, medical treatment is often the more preferred choice of treatment for psychological problems. As mentioned above, many Chinese people are likely to transfer their psychological concerns into somatic problems. The first author of this book has served as a psychologist in Hong Kong and Macao for more than twenty years. In his clinical experiences, he often finds individuals with depression reporting somatic complaints of insomnia and chest pain. Instead of seeking psychological counseling, they often ask for referrals to medical doctors for pharmacological prescriptions. For these clients, they would perceive problem gambling as a biologically based disorder. Consequently, Chinese people are more likely to ask for medical treatment rather than psychotherapy. Further, Chinese patients prefer medical treatment for their problems as they usually expect a quick fix or even immediate treatment effects for their problems. Thus, they would not be willing to participate in psychotherapy which often requires ten weekly sessions. For the majority of traditional Chinese people, the time necessary for therapeutic effect significantly affects their treatment adherence and willingness to continue the particular treatment modality (Iwamasa et al. 2006). Thus, it may thus be beneficial to combine pharmacotherapy and CBT. Also, we need to modify the traditional CBT programs to cater to the specific needs and concerns of Chinese problem gamblers. Based on our experiences of working with problem gamblers, we bring up the following recommendations.

## **6.5 Recommendations**

### **6.5.1 Motivational Interviewing Combined with CBT for Problem Gambling**

Prochaska and DiClemente (1983) proposed the trans-theoretical model for behavioral change. Based on the premise that clients need to be motivated for treatment to be effective, the model construes the process of change in a six stage model. These six stages are precontemplation, contemplation, preparation, action, relapse, and maintenance. The first stage is the precontemplative stage where the person lacks insight into their problems. Thus, he/she would continue or even persist in the behavior. Without help from others, the gambler can stay in this stage for years. The major factor for proceeding from this stage is the development of insight into his/her problems. Such insight might come from personal crisis. For instance, the problem gambler suffers from severe monetary losses and has to borrow from others to cover his/her debts. The next stage is the contemplation stage. Here, the gambler starts to develop insight for his/her problems in gambling. He/she might think positively of seeking treatment. In the first two stages, strategies of motivational enhancement should include exercise in understanding the harm

that excessive gambling has given them and their loved ones. Petry (2005a) outlined a number of MI strategies for gamblers at this stage. One strategy is to ask the gambler to list the benefits and pains and problems associated with gambling (decisional balance). Or the client is asked to list the possibilities he has not participated due to his preoccupation of gambling. These “what if?” strategies would help the client develop his motivation for change. Recent empirical research indicates that a treatment combining MI and CBT was effective in improving problem gambling in either an individual or a group format (Oei et al. 2010). Research studies also showed that combined brief MI with CBT significantly decreased dropout rates than CBT alone (Milton et al. 2002; Wulfert et al. 2006).

### ***6.5.2 Adding CBT Self-help Workbook into GA***

Using CBT self-help workbook is a viable treatment modality for individuals with problem gambling. Hodgins et al. (2004) reported that participants receiving CBT self-help workbook had a comparable therapeutic effect to those receiving CBT self-help workbook plus prior motivational enhancement telephone treatment at 2-year follow-up period. It can be viewed as an alternative treatment where face-to-face counseling is not a preferred treatment of choice for those clients who see counseling sessions as shameful experiences. For this type of clientele, self-help books fill in this treatment gap. It is appropriate to integrate workbook exercises into the traditional GA meetings. The content of the twelve-step approach needs to be modified as some Chinese problem gamblers find the Christian approach to be confrontational (Fong and Tsuang 2007). Since 2011, the first author of this book has carried out a series of research projects in the GAs of Hong Kong (Chan and Ohtsuka 2011a, b). He and his students have recently written a group counseling manual for the GA in Hong Kong (Yeung et al. 2014). This eight-week program manual, structured on CBT, emphasizes the following topics and issues: motivational enhancement, psychoeducation on problem gambling, learning about the functional analysis and triggers of gambling, developing self-control, assertiveness training, and learning to follow a healthy lifestyle away from gambling. At the time of this writing, the authors have employed this manual in their GA meetings in Hong Kong. To determine the effectiveness of this manual, a long-term follow-up is planned in 2017.

## **6.6 Current Problem Gambling Treatment Services in Hong Kong**

When compared to Western countries, the development of treatment for problem gambling in Hong Kong is at the infancy stage. At present, treatment is mostly provided by non-government organizations (NGOs). Very often, these agencies are

commissioned by the Home Affairs Bureau (民政事務局) of the Hong Kong Government and receive funding from the Ping Wo Fund (平和基金). The Ping Wo Fund is a charity fund endowed by the Hong Kong Jockey Club. The four major counseling and treatment centers are Caritas Addicted Gamblers Counseling Centre (the major Catholic social services provider in Hong Kong), Tung Wah Group of Hospitals Even Centre (a social service agency of the Tung Wah Hospitals, a group of non-profit hospitals in Hong Kong), Zion Social Service Yuk Lai Hin Counseling Centre, and Hong Kong Sunshine Lutheran Centre. These four centers provide free individual counseling services, group counseling sessions, peer support group, couple groups, public education, and telephone hotlines. They also conduct surveys and research studies on problem gamblers and their family members. Among the four centers, the Tung Wah Group of Hospitals Even Centre was the first major gambling treatment center in Hong Kong. Established in 2003, it offers the most comprehensive treatment for problem gamblers in Hong Kong. In these centers, counselors often employ CBT in their treatment protocols. Clients receive treatment on a weekly basis and each session usually lasts about an hour. Caritas Addicted Gamblers Counseling Centre and Tung Wah Group of Hospitals Even Centre also provide practicum for counselor training for students who are involved in the certified gambling counselor (CGC) programs.

In addition to the four government-funded services, there are several organizations providing counseling services to problem gamblers. These groups are often run by recovered gamblers who offer free peer support to fellow gamblers. The sessions can be either in an individual or group format. Some of these groups follow the twelve-step GA approach while other groups, mostly belonging to the Christian evangelical tradition, employ spiritual intervention. In these groups, there is an absence of trained professional helpers. Instead, the focus of the treatment is on Christian conversion, prayers, and development of self-control through divine help (Rev. Yu Fat Siu, personal communication with the first author, 15th August, 2013). Rev. Sui is the senior pastor from Kei Yam Alliance Church in Hong Kong (We have described their programs in detail in the previous chapter). This Christian church offers free counseling services to clients. The financial support for this group comes mainly from donations.

To date, there have been only a few outcome studies evaluating the effectiveness of treatment facilities in Hong Kong. A research group from the Hong Kong Polytechnic University, commissioned by the Hong Kong Government, reported outcome studies on the effectiveness of the Tung Wah Even Centre and the Caritas Addicted Gamblers Counseling Centre (The Hong Kong Polytechnic University 2006). The researchers did not interview the clients who had received treatment in the two centers. Instead, they collected their assessment data on the evaluation reports given by the two centers. The team concluded that the two centers were successful in providing cost-effective treatment for problem gamblers. This analysis can be biased and overly subjective. An effective assessment should perform follow-up assessment on the clients who participated in the treatment programs. Secondly, the report makes an erroneous argument that “Total abstinence from gambling is not possible (The Hong Kong Polytechnic University 2006, p. xi).”

This statement contradicts the consistent finding that problem gamblers can fully recover from their problems (Blaszczynski and Nower 2014; Chan and Ohtsuka 2011a, b; Raylu et al. 2013).

## **6.7 Implications and Suggestions of Problem Gambling Interventions in Hong Kong and Macao—A Proposed Multimodal Treatment Model**

Multimodal therapeutic approach has a long history in the treatment of problem gambling. Table 6.1 presents a list of early research studies using multimodal approaches.

A more recent research study using multimodal approach on problem gambling was reported by Myrseth (2011) in the University of Bergen, Norway. In her doctoral thesis, she compared the efficacy of CBT, pharmacological intervention (escitalopram, the SSRI which was originally prescribed for anxiety disorders, depression, and panic disorder, and found to have relatively fewer side effects than other SSRIs), and combined treatment modalities. Fifteen participants were randomized into a group of 8-week individual CBT program while another 15 participants were randomized to treatment of escitalopram for 8 weeks. After completing the 8-week pharmacological intervention, these participants would then receive another 8-week treatment of escitalopram plus 8-week CBT (combined treatment). The participants in this group continued receiving treatment of escitalopram until 6 months after starting treatment. Both treatment groups would have follow-up up to 6 months. Gambling severity, symptoms, craving, frequency, net loss due to gambling, and the severity of depression were measured in pre-treatment, 8-weeks post-treatment (compared CBT and escitalopram treatment groups), 16-weeks post-treatment (compared CBT and combined CBT and escitalopram groups), and at 3-month and 6-month follow-up. There were significant within-group effects among both treatment groups at post-treatment as well as at follow-up assessment in most of the treatment outcomes. Within-group effect sizes were maintained at moderate to high at 6-month follow-up period. Although the combined pharmacological treatment and CBT did no better than single treatment, adding pharmacotherapy into traditional psychotherapy could potentially reduce the relapse rates and accelerate treatment effects.

By comparing the literature in these studies, we can draw some conclusions on the multimodal approaches: (1) Multimodal treatments with GA yielded better abstinence rate than those that did not; (2) group psychotherapy was the most favorite type of treatment in many multimodal treatments; and (3) multimodal treatment is more effective with inpatient settings than outpatient facilities. Further investigations are needed to explore the effectiveness of multimodal approaches in treating problem gambling in community settings. Looking forward to the near future, we would like to see multimodal treatment packages which combine

**Table 6.1** Early research studies on multimodal approaches on problem gambling

Authors (years)	Number of participants	Contents of multimodal therapy	Year(s) of follow-up	Success rate (total abstinence)
Russo et al. (1984)	60, inpatient	Group therapy, education, GA, discharge plan	1-year follow-up	55 %
Taber et al. (1987)	57, inpatient	Group therapy, education, GA, discharge planning	Half year follow-up	56 %
Hudak et al. (1989)	99, inpatient	Education, individual, family and group therapy communication skills training, and discharge planning	4-year follow-up (by phone)	31 % (only 26 participants were contacted; 8 of them were abstinent)
Lesieur and Blume (1991)	72, inpatient	Individual and group psychotherapy, lectures, films, psychodrama, education, self-help groups, family counseling	6–14 month follow-up	64 %
Schwarz and Lindner (1992)	58, inpatient	Medical, group, individual, occupational, and family therapies	1-year and 2-year follow-up	1-year follow-up: 71 %; 2-year follow-up: 62 %
Saiz-Ruiz et al. (1992)	46, inpatient	Individualized treatment and discussion groups	2-year follow-up	46 %
Blackman et al. (1989)	88, outpatient	Individual treatment, family–marital and group therapy, chemotherapy, and GA	At the end of the treatment	51 % minimally preoccupied with gambling

pharmacology and CBT. Such treatment packages could additionally benefit from weekly group sessions of GA as the past literature indicated extra-therapeutic benefits of GA when the problem gamblers attended the meetings regularly (Ferensky et al. 2014; López Viets and Miller 1997).

To date, there has been a lack of studies on the multimodal therapeutic approach with problem gamblers in Hong Kong and Macao. William Li, the second author of this book, is carrying out his master thesis entitled “*Adding cognitive behavior therapy to gamblers’ anonymous: A pilot study using within-subject design.*” The participants are problem gamblers who are currently attending weekly GA regularly in a self-help group named Prevention and Rehabilitation of Pathological Gambling Association (PAROPGA), a non-government subsidized organization. The meetings, usually held every Tuesday night, are structured on a modified 12 step



approach, developed by Chan and his students (Yeung et al. 2014). Similar to most GAs in the USA, the meetings are led by recovered problem gamblers. The objective of the present study is to compare the treatment effectiveness of adding group CBT sessions to GA participants (CBT + GA) and GA alone, using a within-subject design. Weekly group CBT sessions are held for 8 weeks (a total of 8 sessions, each session lasting 45–60 min). The 8-week group CBT sessions include MI, psychoeducation, stimulus control, dealing with craving and urging, assertiveness and refusal skills training, cognitive restructuring, and relapse prevention. This study is expected to finish in June, 2016.

## 6.8 Conclusion

We have reviewed the various treatment modalities for problem gambling in this chapter. Available research has indicated that a multimodal therapeutic model is beneficial for the treatment and rehabilitation of problem gamblers. This approach can be based on cognitive behavioral therapy augmented with participation in meetings of GA. Elements of CBT that are proven to be efficacious are MI techniques, psychoeducation on problem gambling, learning about one's functional analysis of gambling, development of self-control through stimulus control and stimulus substitution, assertiveness and refusal skills training, relapse prevention, and the adoption of a healthy lifestyle. We believe that researchers should develop a standardized multimodal treatment manual based on these therapeutic techniques for problem gamblers in Hong Kong and Macao.

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## **Chapter 7**

# **The Challenges and the Future for Problem Gambling in Hong Kong and Macao**

### **7.1 Issues and Challenges of Problem Gambling in Hong Kong: The Story of the Hong Kong Jockey Club**

In Chap. 1, we have outlined the history of gambling in Hong Kong. Unlike Macao, where the development of gambling is shaped by the rise and fall of gambling tycoons, the history of gambling in Hong Kong is shaped by the development of the Hong Kong Jockey Club (HKJC). Established in 1884, the HKJC is the only government-sanctioned and not-for-profit gaming operator in Hong Kong. It is licensed to operate horse racing, Mark Six, and football betting. The management of the club is governed by a twelve-member Board of Stewards, headed by a chairman. The stewards do not receive any salary from the club. Under the direction of this board, the chief executive officer oversees the daily operations and management of the club.

In the history of gambling of Hong Kong, as we highlighted in Chap. 1, the British Colonial government has never actively promoted gambling activities. This decision might be related to the moral and religious values of the British government in the nineteenth century. In the early years of the new colony, the laws on gaming were mostly attempts to address the pressing needs of the community. For instance, as we have pointed out, the main reason for the Hong Kong Colonial government's first laws licensing the mahjong establishments was to regulate their numbers and locations of business. In a similar vein of thought, the establishment of the Mark Six in the 1970s was a strategy against the widespread betting on the game "Word Flowers," a game controlled by the underground society at that time. In this game, the gambler chooses a number out of thirty-six numbers. Unlike Mark Six, which is a fair and open game, the results of "Word Flower" were fixed by the gambling house. Likewise, the setting up of off-course betting centers all over Hong Kong was an attempt to stop the widespread illegal off-course betting in the early 1970s. A great majority of these official off-course centers are located in residential areas, where people can place bets on horse races near to their homes. Lastly, in 2003, as a

response to the drastic increase of illegal football betting on the World Cup of 2002, the Hong Kong government licensed the HKJC to operate football betting.

Why does the government rely on a single operator for all gambling products and services? Why does the HKJC seldom advertise on the popular cultural media about its services and gaming products like the majority of the integrated resorts in Macao have been engaging in? What are the motivational perspectives underlying the gambling policies in Hong Kong? The answers to these questions lie in the fundamental principles on which Hong Kong gambling policies are based. Starting from the early years of the British colonization, the newly established government never advocated the expansion of gambling as gambling ran contrary to the moral and religious values of Christianity. Consequently, the government's policies on gambling aimed mainly at the regulation rather than the promotion of the gaming industry. In the traditional Confucian perspective, gambling is one of the four social sins. The other three are drinking, smoking opium, and visiting prostitutes. In the traditional Chinese community, a good man should not be involved in these social sins. Even today, few people would elect an official in the Legislative Council if he would commit these moral sins.

In the Hong Kong government, the Home Affairs Bureau is responsible for formulating gambling policy and monitoring its implementation. The basic underlying principle of the government's policy is to restrict gambling opportunities to a limited number of authorized and regulated outlets. The majority of these outlets are the gambling facilities of the HKJC, which include the Shatin and Happy Valley Race-courses and the many off-course betting units. The remaining minority are the mahjong schools and parlors, which received licenses from the colonial government many years ago. At present, the government does not grant any licenses to new gaming operators.

The rationale for this policy is to compromise the substantial gaming needs of the public and the moral and social concerns of the community. Hong Kong government has never considered increasing gambling revenues as its major source of income despite the fact that HKJC is the largest tax-paying organization in Hong Kong. Secondly, unlike Macao, which depends on gambling revenues as her major source of income, Hong Kong is an international business center. The most important sector is business and finance. The gaming industry is often given a lesser role in Hong Kong's overall development.

All these factors can explain why the Hong Kong government has taken a non-proactive role in promoting the gaming industries. But as Chinese people love gambling (Chan et al. 2014; Ohtsuka and Chan 2010), the government needs to strike a balance between Christian and Confucian morality and public interests and concerns. The HKJC can nicely fit into this role. As a non-governmental and not-for-profit organization, the HKJC can take an active role in managing and promoting gaming. At the same time, it channels much of the gaming profits to tax revenue for the government and social charity for the public. Further, the HKJC has long promoted responsible gambling as its major strategy in the development of her business. In 2014, the HKJC was awarded the highest level (Level 4) of accreditation under the Responsible Gambling Framework of the World Lottery

Association (WLA). The WLA requires gaming operators to adhere to ten responsible principles, which include game design, employee training and development, stakeholder engagement, public education, treatment of problem gamblers, and the development and monitoring of responsible gambling strategies.

We believe that the future of gambling lies with the decisions and strategies of the HKJC. Chan has critically evaluated issues and treatment of problem gamblers in Hong Kong (Chan 2014). When compared with the integrated resorts in Macao, the HKJC has a number of effective responsible gambling measures. These include the following:

1. The presence of reality checks: installation of clocks in gaming halls and the use of glass windows (instead of curtains or walls in the Macao casinos) in the off-course betting centers so that the patrons can see the world outside.
2. Insistence on using cash or account deposits in wagering. Patrons cannot bet with their credit cards.
3. Strict laws on illegal loan sharks.
4. Time-out period in all gaming outlets (all off-course betting centers close the doors during non-business hours).
5. The absence of toilets and dining facilities in all off-course betting shops (the purpose is to “force” the patrons to return home for meals and toilet needs).
6. The availability of responsible gambling posters and pamphlets in all gaming facilities.
7. Staff members in HKJC are prohibited from giving gaming tips to patrons.
8. The allocation of funds to support the Ping Wo Fund for research and treatment for problem gamblers and for the development of preventive education, especially for young people.

Notwithstanding these measures, there are a number of issues and challenges that HKJC would need to address. These are as follows:

1. The need to provide more effective treatment for problem gamblers. At present, there are only four centers supported by the Ping Wo Fund. They are Caritas, the Tung Wah Group of Hospitals, Zion Social Service Limited, and Hong Kong Lutheran Social Service. The services might not cover the needs of the growing population and needs of the Hong Kong community (at present, there are 7.1 million residents in Hong Kong). HKJC would need to allocate more funding for setting up treatment facilities for problem gamblers.
2. The need to undertake research studies on non-traditional means of gambling. One non-traditional means of gambling is speculative trading. Research into this area has been lacking (Arthur et al. 2015). Chan and his students (Lo et al. 2012) have reported a qualitative study of day traders in Hong Kong. They found that 5.5 % of the participants can be classified as pathological gamblers. However, most of the participants do not regard themselves as gamblers; rather, they see themselves as shrewd investors.
3. In the last ten years, there have been drastic increases of gambling using Internet as a medium (Gainsbury 2012). There is an urgent need for the Hong Kong



government and the HKJC to develop and propose more laws and research on Internet gambling.

4. The need to provide specific training programs for staff working in HKJC. At present, there are very few specific preventive and treatments for these workers, who run a higher risk of developing excessive gambling behavior.
5. The need to balance the increasing gaming needs of the public while adhering to the principle of responsible gambling. Should we develop integrated resorts like Macao? Should HKJC expand the scope of gaming products that cover all spectrums of sporting activities? These are the issues the management of HKJC needs to address now.

The story of the HKJC marks the history and the future of gambling in Hong Kong. In the 150-year history of gambling in this small enclave in the southern tip of China, the HKJC has evolved from a small private club hosting horse racing to the present multibillionaire non-profit organization. We sincerely hope that HKJC can continue the tradition of non-proactive role in the gaming sector while advancing its role as a major charity organization in Hong Kong. The allocation of more research efforts and treatment centers for problem gamblers should be its next major concern.

## **7.2 The Challenges and Future of Problem Gambling in Macao**

In Chap. 1, we have reviewed the history of Macao's gaming industry. With the influx of foreign capital and the building of Western-styled casinos in 2002, Macao's economy has been expanding rapidly. In the past few years, the gaming income of the "Monte Carlo of the Orient" has exceeded that of Las Vegas. However, despite the brilliant development of Macao's economy, there is a growing concern over the predominance of the gaming industry in Macao's economy. At present, Macao's economy is becoming overly reliant on revenues from gaming. Tables 7.1 and 7.2 show that the total government revenues are dependent on tax revenues from the gaming industry.

### ***7.2.1 Challenges to the Current State of Gambling***

Since the third quarter of 2014, gross revenues from games of fortune began to drop. The decreasing trend continued for the rest of 2014 and in the first ten months of 2015. At the time of writing (October 2015), it is predicted that the gross revenue from the gaming industry will continue to tumble till the end of 2015 or even the first half of the year 2016. The main reason for the dramatic slump in Macao's gaming industry is the active anti-corruption policy promulgated by President Xi



**Table 7.1** Annual gross revenue from games of fortune and its weighing in Macao's GDP

Year	Gross revenue from game of fortune (million MOP)	GDP (million MOP)	Weighing of gross revenue from game of fortune in GDP (%)
2002	23,496.0	56,298.4	41.73
2003	30,315.1	63,579.3	47.68
2004	43,510.9	82,294.1	52.87
2003	47,133.7	94,471.0	49.89
2006	57,521.3	116,570.5	49.34
2007	83,846.8	145,084.8	57.79
2008	109,826.3	166,265.0	66.05
2009	120,383.0	170,171.4	70.74
2010	189,587.8	226,941.4	83.54
2011	269,058.3	293,745.0	91.60
2012	305,234.9	343,416.3	88.88
2013	361,866.3	413,470.9	87.52
2014	351,521.0	443,298.0	79.30
2015 (up to August)	158,882.0		

Source Government of Macau Special Administrative Region Statistics and Census Service (2015)

**Table 7.2** The percentage of tax revenue from gaming in total Macao SAR revenues

Year	Tax revenue from gaming (MOP)	Total government revenue (MOP)	Weighing of tax revenue from gaming in total government revenue (%)
2002	7,765,800,000.00	15,226,922,000.00	51.00
2003	10,579,000,000.00	18,370,626,000.00	57.59
2004	15,236,600,000.00	23,863,539,000.00	63.85
2005	17,318,600,000.00	28,200,823,000.00	61.41
2006	20,747,600,000.00	37,188,518,000.00	55.79
2007	31,919,600,000.00	53,710,495,000.00	59.43
2008	43,207,500,000.00	62,259,343,000.00	69.40
2009	45,697,500,000.00	69,870,878,000.00	65.40
2010	68,776,100,000.00	88,488,054,000.00	77.72
2011	99,656,400,000.00	122,972,322,000.00	81.04
2012	113,377,700,000.00	144,994,543,000.00	78.19
2013	134,382,500,000.00	155,512,060,000.00	86.41
2014	136,710,000,000.00	156,070,000,000.00	87.60
2015 (1st quarter)	25,380,000,000.00	28,570,000,000.00	88.83

Source Government of Macau Special Administrative Region Statistics and Census Service (2015)

**Table 7.3** Number of visitors from mainland China and Hong Kong in Macao

Year	Total number of visitors	Number of visitors from mainland China (weighing, %)	Number of visitors from Hong Kong (weighing, %)
2004	16,672,556	9,529,739(57.16 %)	5,051,059(30.30 %)
2005	18,711,187	10,462,966(55.92 %)	5,614,892(30.01 %).
2006	21,998,122	11,985,617(54.48 %)	6,940,656(31.55 %).
2007	27,003,370	14,873,490(55.08 %)	8,176,964(30.28 %).
2008	22,933,185	11,613,171(50.64 %)	7,016,479(30.60 %).
2009	21,752,751	10,989,533(50.50 %)	6,727,822(30.90 %).
2010	24,965,411	13,229,058(53.00 %)	7,466,139(29.90 %).
2011	28,002,279	16,162,747(57.70 %)	7,582,923(27.1 %).
2012	28,082,292	16,902,499(60.20 %)	7,081,153(25.2 %).
2013	29,324,822	18,632,207(63.50 %)	6,766,044(23.1 %).
2014	31,525,632	21,252,410(67.40 %)	6,426,608 (20.4 %).
2015 (up to 2nd quarter)	14,756,449	9,784,792(66.30 %)	3,155,152(21.40 %).

Source Government of Macau Special Administrative Region Statistics and Census Service (2015)

Jin Ping of the People's Republic of China (PRC). In the past ten years, more than 60 % of Macao visitors came from mainland China. Hong Kong visitors comprised another 20 % (Table 7.3). In the last decade, the major income of Macao's gaming industry has been significantly related to the increase of patrons from mainland China. Among these mainland China casino customers, a major portion of them were high rollers and corrupt government officials from PRC. Many of these patrons were the targets of President Xi's anticorruption campaign in 2014. These types of higher-spending casino customers used to gamble in casinos' VIP rooms run by junket operators. According to Wong (2015), junket operators arrange trips, luxurious private venues for gambling, and provide credit for high rollers, who accounted for more than 60 % of Macao's casino revenue in 2014. Xi's policies aimed at clamping down on government officials' corruption and spending extravagance have drastically reduced the numbers of these high-end Chinese casino customers. Moreover, Macao had previously tightened the regulation which reduced the period of visitors from mainland China to stay in Macao (though subsequently the SAR government relaxed the restriction again to allow visitors possessing Chinese visas to stay in Macao for a maximum of 7 days in July 2015). Recently, David Group, one of the major Macao junket operators serving higher-spending casino customers, has closed some VIP rooms in Sands China and Wynn Macao due to the recession in the gaming industry.

The decline of the gaming industry could also be demonstrated by the second quarter business performance of Wynn Macao. Compared with the same period last year, the net profit in second quarter 2015 dropped by 35.8 %. The most seriously "hit area" was in the VIP rooms, sliding 41.1 % compared with April to June in 2014. Gambling tables in VIP rooms (on average) shrank from 263 to 247. There was a

16.5 % reduction and 29.5 % decrease in total betting from non-VIP gaming tables and slot machines recorded, respectively, during the period of April to June 2015. Profits from non-gambling sectors were also inevitably affected—down 22.3 % compared to that of the same period last year. However, the accommodation rate was steadily maintained at more than 95 % (Journal San Wa Ou, August 5, 2015).

A more in-depth exploration of the economic infrastructure of Macao can offer more insight on the crux of the problems. Firstly, Macao's economy has relied heavily on revenues from patrons of games of fortune, in particular those from the PRC. Table 7.3 illustrates that over 60 % of visitors have been from mainland China since 2012. According to Lo et al. (2014), most of the visitors coming to Macao belong to "gaming tourism." Secondly, Macao's special administrative region (SAR) government enforced a series of policies to regulate the gaming industry. One example is the prohibition of smoking in non-VIP casino areas. Though smoking rooms have been provided since October 2014, the no smoking policy might have deterred some heavy smokers from gambling in the casinos. Another example is the restriction on the use of UnionPay (credit cards issued by China UnionPay) for gambling since March 2014. In June 2014, the Monetary Authority of Macao also requested the removal of UnionPay credit card terminals in pawnbroker and jewelry shops inside casinos. Restricting the use of Chinese credit cards was undoubtedly a policy that went in line with the anticorruption policies imposed by President Xi. Though aimed mainly to combat money laundering of the mainland officials, these measures have drastically reduced the number of wealthy Chinese patrons coming to the casinos in Macao.

### 7.2.2 *The Impact of Gambling on Macao's Culture*

Gaming industries have a number of significant impacts on the culture of Macao. Firstly, the rapid growth of the industries and the building of the many infrastructures require a large number of laborers. At present, there are over 100,000 foreign laborers in a community of 640,000. The influx of foreign laborers has transformed the small Chinese community into an international city.

According to Ha (2014), the traditional culture of Macao has been drastically changed since the partial liberalization of gaming industry and the building of Western-styled casino resorts in 2002. The present Macao carries the image of a "melting pot," an American term for cities with diverse cultural perspectives. The majority of the foreign workers come from mainland China, the Philippines, and Vietnam. The rapid increase in population has created housing problems for many. Rent for a small apartment has soared threefolds in the last decade. The personal experience of the first author of this writing can serve as a good example. He started teaching in a small college in Macao in 1998. At that time, the rent of a small one-bedroom apartment was MOP 3000 or USD 375 per month. As of 2016, the same apartment would probably cost MOP 9000 or over USD 1100.

Secondly, Fong et al. (2011) estimated that the social costs of the expansion of casino gambling increased by 163 % between 2003 and 2007. Huang (2011) has argued that this is a very conservative estimate as it only takes into the consideration of the monetary costs of treatment for gamblers. Further, the increase of family disputes and spousal abuses of problem gamblers has caused serious concerns among policy makers in the small community (Chan 2012). The continuous development of integrated resorts has created a generation of young people who grow up in a city where casinos, Internet gambling, and soccer betting are easily accessible. With more accessibility, availability, and general acceptability of gambling as a leisure activity, we anticipate the prevalence of problem gambling among the younger generation to increase in the next decade.<sup>1</sup>

### ***7.2.3 Challenges and Opportunities***

There have been voices advocating changing the current reliance on visitors from mainland China as the main source of patrons in the casinos. Gu and Gao (2006) suggested that the casinos in Macao should incorporate new gaming products and increase the revenues from non-gambling sectors. Most important of all, efforts should be made to attract visitors from Southeast Asia and Western countries.

#### **7.2.3.1 Expanding the Source of Visitors—The Development of Cultural Tourism**

Table 7.3 shows that over 60 % of visitors have come from mainland China in recent years, while visitors of other countries have demonstrated a downward trend. Lo et al. (2014) strongly argue that cultural tourism in Macao has been under-developed. In 2014, Asian tourists (other than mainland China, Hong Kong, and Taiwan) comprised 7.4 % of the total number of tourists. Only 1.0 and 0.8 % tourists came from America (including North and South America) and Europe, respectively. Australian tourists made up another 0.4 % of the tourist population. Efforts should be made by the Macao government to promote tourism to these non-Asian countries.

The personal experience of the second author can illustrate how active and planned governmental intervention can help develop cultural tourism in a rural village in Hong Kong. William has five years of working experiences in Tai O (大澳), a small rural fishing village on Lantau Island, Hong Kong. Due to its distant location, Tai O is a quiet and peaceful fishing village secluded from the rest of Hong Kong. Unemployment was high in the early 2000s. Many young people left

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<sup>1</sup>Assembleia Legislativa da RAEM passed the bill that completely prohibited smoking inside casinos on July 10, 2015, but the law is expected to be enforced no sooner than the second half of the year 2016 due to the downturn in the gaming industry.

the village to seek for a better life in the city. Only retired and elderly people lived there. About ten years ago, the Hong Kong SAR government began to develop Tai O as an international cultural tourist attraction. A number of renovations were made to restore the image of the traditional fishing village. For example, a magnificent waterfront promenade overlooking the village, a small museum on the history of the village, and a boutique hotel were built. Traditional cultural heritage such as the stilt houses (fisherman houses built over water) was renovated. Visitors from America and Europe may find the village intriguing as they discover the water canals and the many wooden houses built over the water. The many tourist attractions are connected by traditional small boats, locally called Gaet-Bae (橫水渡). Restaurants offering featured special seafood and Western-styled cafés targeted at young visitors were also opened alongside the creek. The Dragon Boat Festival in Tai O was successfully promoted as an intangible cultural heritage. All these efforts have contributed to the revitalization of this small and old fishing village into a famous tourist attraction (Figs. 7.1, 7.2, 7.3, 7.4, 7.5, 7.6).

**Fig. 7.1** Tai O-traditional Chinese opera held on a temporary bamboo stage (Photographs by Li Wai Lim on June 19, 2007)



**Fig. 7.2** Tai O-boat dwellers offer their thanks to the gods (Photographs by Li Wai Lim on June 19, 2007)



**Fig. 7.3** Tai O-stilt houses  
(Photographs by Li Wai Lim  
on June 19, 2007)



**Fig. 7.4** Tai O-stilt houses  
(Photographs by Li Wai Lim  
on June 19, 2007)



**Fig. 7.5** Tai O-dragon boat  
competition (Photographs by  
Li Wai Lim on June 19, 2007)





**Fig. 7.6** Tai O-dragon boat race (Photographs by Li Wai Lim on June 19, 2007)



The successful experience from Tai O indicates that an excellent tourist attraction has to be renewed and accommodate cultural features to attract new customers. We hope that the Macao SAR government could dedicate more efforts to promote cultural attractions in addition to developing gaming-integrated resorts.

### 7.2.3.2 The Modification of the Gaming Products

Market diversification could be one of the solutions to circumvent the current overdependence on mainland Chinese gamblers as the main source of incomes (Gao 2014). Beginning in 2014, there has been a drastic drop in revenues from VIP table games, probably due to the economic downturn and anticorruption campaigns in China. The central problem of gaming revenues in Macao is that over 70 % of revenues were derived from VIP table games in the past few years (Wang et al. 2015). VIP tables are venues where high rollers, mainly from China, gamble. Some believe that putting in more slot machines can compensate for the loss in revenues in VIP rooms (Gu and Gao 2006). However, electronic gaming machines (EGMs) have never been popular among Chinese gamblers in Macao. Chinese gamblers love table games, where people can talk, yell, and challenge each other (Lam 2007). The most popular casino games are baccarat, blackjack, and Sic Bo (Chinese dice games). Details of the types of legalized games in Macao can be found in Appendix C. Further, many Chinese gamblers do not trust EGMs as they believe that the games are fixed by computer programs. To them, table games are more fair and of course more exciting. Thus, to attract more casino visitors, new table games should be developed. One possible solution is to introduce the traditional Chinese games of Fan-tan and Tin Kau into casinos as these games have been enjoyed by Chinese people for decades.

### 7.2.3.3 Enhancing the Role of Non-gambling Sectors in Gaming Industry

There has been a general perception that Chinese visitors only come to Macao for gambling. However, it is not the case. A survey found that only 7 % of Chinese visitors travelled to Macao solely for gambling (Government of Macao Special Administrative Region Statistics and Census Service 2009). This implies that the majority of Chinese visitors are seeking a variety of entertainment and leisure activities when they visit Macao. Recently, Wong and Rosenbaum (2012) studied the motivations of Chinese people to visit casinos in Macao. In addition to gambling, these visitors also come to enjoy the high-quality services and leisure offered by integrated resorts. Many of them come to spend time with their families. Others might travel to Macao for an emotional escape from their problems back home. As there are diverse reasons for their visits, it is necessary for the integrated resorts in Macao to develop non-gaming facilities for these visitors.

However, the development of the non-gambling sectors, in comparison with that of the gambling sectors, is rather small. The non-gambling sectors are the luxurious shopping malls, food courts, restaurants, five-star hotel accommodations, theaters, exhibition centers, exciting shows, and other attractive recreational facilities. The non-gambling revenues of the six licensed gaming enterprisers only account for a small proportion compared to revenue from games of fortune (Table 7.4).

Recently, Macao SAR government passed a requirement that the quality and quantity of non-gambling elements in an integrated resort will determine the number of gambling tables the gaming operator can hold (Lee 2015). This implies that the integrated resorts will have to increase investment in these areas in order to receive licences for gambling. The Venetian, Melco Crown Entertainment (MCE), and Galaxy have expanded their budgets on developing leisure resorts in Cotai Strip. For example, non-gambling sectors of MGM's Cotai resort project (expected to open in mid-2016) will occupy 85 % of total area. These non-gambling elements include excellent dining and recreational facilities and luxury malls. SJM's Lisboa Palace in Cotai (scheduled to open in 2017) will contain non-gambling elements on 70 % of its total space. The latest Cotai Strip project is Studio City Macao of MCE

**Table 7.4** Revenue (%) from non-gambling sectors among six gaming enterprisers (2007–2013)

Year	2007	2008	2009	2010	2011	2012	2013
SJM	0.18	0.61	0.84	0.79	0.76	0.80	0.79
Galaxy	1.11	0.86	2.62	1.90	2.75	3.51	2.98
Venetian	9.31	10.78	10.29	9.28	10.81	9.44	9.12
Wynn	6.00	5.62	6.33	6.16	5.91	6.13	5.76
MCE	0.66	0.57	0.63	0.30	0.26	0.43	0.40
MGM	6.47	3.54	2.63	1.85	1.15	1.08	0.90

Source Lo et al. (2014, July). *Transformation of tourism in Macao: Using gaming tour to bring along cultural tour*. Paper presented in the International Conference on Gaming, Leisure and Entertainment, 2014, Macao)



(opened on October 27, 2015). Future projects include Parisian Macao (by Venetian, will open in late 2016) and Wynn Palace (by Wynn, will open in late 2016). All of these resorts will have expanded components of non-gambling sectors. The investment on non-gambling elements will help diversify the sources of visitors, especially middle-class patrons who spend vacations with their families.

#### **7.2.3.4 Responsible Gambling in Macao: Current State and Future Challenges**

Will the recent decline of revenues of the gaming industry in Macao interfere with the enforcement and progress of responsible gambling? According to Blaszczynski et al. (2004), responsible gambling is defined as policies and practices designed to prevent and reduce potential harm associated with gambling. These policies, strategies, and practices often include a variety of interventions with the purpose of enhancing public awareness, protecting casino visitors from excessive or compulsive gambling, providing public education, and accessing relevant treatments. We hope the answer is a definite “no.” In Chap. 1, we introduced the Mirvis’ and Googins’ responsible gambling model (Mirvis and Googins 2004). Our analysis is that the gaming industry in Macao currently is in the engaged stage (stage 2) according to the criteria of the model. At present, the six gaming enterprises in Macao have adopted a number of responsible gambling strategies in their corporate planning and management. These include the use of responsible gaming signage, self-exclusion policy, staff training on staff training, and the setting up of “Responsible Gambling Information Kiosks” in the casinos. At the time of writing, “Responsible Gambling Information Kiosks” have been installed in twelve locations (The Gaming Inspection and Coordination Bureau 2015).

As part of their responsible gambling policies, casino operators have also offered continuous education opportunities in scientific casino management for their workers. For example, 43 employees of Melco Crown Entertainment have enrolled in the one-year in-house diploma in casino management, course offered by the University of Macao. The course covers topics and issues in casino mathematics and management, problem-solving skills, knowledge of casino operations, and ethical practices.

Notwithstanding these efforts, we believe the responsible gambling measures are insufficient. All casinos in Macao operate 24 h daily all year round. Self-exclusion policies are minimal, passive, and symbolic in nature. ATM facilities are easy to access in the casinos. Very often, security officers do not check the identity and age of patrons when they enter casinos (the first author of this book has visited the casinos in Macao on numerous occasions. He has never seen a security officer checking the age of incoming patrons). Responsible gambling measures such as the installing of clocks inside casinos and the statutory exclusion of problem gamblers have never been practiced by the casinos. The pamphlets of responsible gambling measures are often placed in the dark corners of the casinos. Very few patrons pick up these pamphlets.

Law et al. (2014) from Macao Polytechnic Institute carried out a survey to investigate the responsible gambling policies on slot machines. In a random survey of 182 respondents, 49 % respondents believed that there was insufficient promotion of responsible gambling in Mocha (the name of the holding company that operates the majority of slot machines in Macao). 72 % of the respondents believed that the SAR government needs to enforce more regulations on commercial gambling.

### 7.3 Concluding Remarks

We believe that the Macao SAR government needs to increase its efforts with gaming operators, local non-profit organizations (NGOs), and academic institutes to work on responsible gambling and harm minimization strategies. In the near future, we hope the following responsible strategies could be implemented in Macao:

- 1) Further revision of gaming laws to implement additional measures of responsible gambling;
- 2) Restricting the number of casino visits for the local residents;
- 3) Putting more resources into local NGOs responsible for providing counseling services to problem gamblers;
- 4) Putting a time-out period on casino operation so that no casino can operate 24 hours a day;
- 5) Installing more clocks inside casinos and Mocha;
- 6) Reducing the number of ATMs available in casinos and prohibiting all kinds of credit card transaction inside the gaming halls;
- 7) Allowing certified gambling counselors to approach probable problem gamblers inside casinos;
- 8) Providing training to casino employees to identify probable problem gamblers to prevent them from gambling excessively; and
- 9) Requesting security guards to check the age of young patrons.

In Chap. 1, we have witnessed gambling in Macao changing and evolving from a city of sin in the past to today's city of dreams. We do look forward to seeing the transformation of Macao from a city of gambling to a metropolitan city of global tourism and leisure destination—an Asian icon of gaming and prosperity. And as long as commercial gambling is carried out responsibly and morally, it will, definitely, offer hopes and dreams of a better livelihood for the 640,000 residents in this small enclave in the southern part of China.

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## **Appendix A**

### **Institutions Providing Counseling Service to Problem Gamblers in Hong Kong**

#### **Caritas Addicted Gamblers Counseling Centre**

Address: Room 1304, 13th Floor, Chinachem Tsuen Wan Plaza, 455-457 Castle Peak Road, Tsuen Wan, N.T, Hong Kong

Tel: (852) 24997828/Gambling Hotline: (852) 1834633 (press “2”)

E-mail: fsag@caritassws.org.hk

Webpage: <http://www.gamblers Caritas.org.hk/html/chi/index.asp>

#### **TWGHS Even Centre**

Address: 11/F, Tung Sun Commercial Centre, 194-200 Lockhart Road, Wanchai, Hong Kong

Tel: (852) 28274321/Gambling Hotline: (852) 1834633

E-mail: evencentre@tungwah.org.hk

Webpage: <http://evencentre.tungwahcsd.org/>

#### **Zion Social Service Yuk Lai Hin Counselling Centre**

Address: Room 703, 7/F, Lemmi Centre, No. 50 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong.

Tel: (852) 2703 9893/Gambling Hotline (852) 1834633

E-mail: ylh@zss.org.hk

Webpage: <http://www.ylh.org.hk/site/zss/home/index.html>

#### **Hong Kong Sunshine Lutheran Centre**

Address: Platform, 2/F, Fu Shin Plaza, Fu Shin Estate, Tai Po, NT, Hong Kong

Tel: (852) 26617048 /Gambling Hotline (852) 1834633

E-mail: y09@hklss.hk

Webpage: <http://www.sunshine-lutheran.org.hk/index.php>

#### **Christian Anonymous Counseling Centre Ltd**

Address: Unit B1, 4/F., Chou Chong Commercial Building, 422-428 Castle Peak Road, Kowloon, Hong Kong

Tel: (852) 2386 7833

E-mail: info@caccl.org.hk

Webpage: <http://www.caccl.org.hk>

**Kei Yam Alliance Church**

Address: 12/F, 99 Plaza, Tai Ho Road, Tsuen Wan, NT, Hong Kong

Tel: (852) 24926502/(852) 24150597

E-mail: webmaster@kychurch.org.hk

Webpage: <http://www.kychurch.org.hk/counseling>

**The Industrial Evangelistic Fellowship: Rehabilitation for Problem Gamblers**

Address: 11/F, Mongkok Christian Centre, 56 Bute Street, Mongkok, Kowloon, Hong Kong

Tel: (852) 27980180

E-mail: rcpg@hkief.org.hk

Webpage: <http://www.hkief.org.hk/rehabilitation/news.asp>

**Christian New Hope Fellowship**

Address: 3/F, Lok Fung Building, 316 Lai Chi Kok Road, Sham Shui Po, Kowloon, Hong Kong

Tel: (852) 31051797

E-mail: newhopehk@yahoo.com.hk

Webpage: <http://www.newhopehk.com/home/>

**Problem Gambling Prevention and Treatment Association**

Address: Room 6, Flat C, 4/F, Fu Hop Factory Building, 209-211, Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Tel: (852) 82038148

E-mail: info@paropga.org.hk

**Hong Kong Gamblers Recovery Centre**

Address: Workshop No. 305, 3/F, Entrepot Centre, 117 How Ming Street, Kwun Tong, Kowloon, Hong Kong

Tel: (852) 24266262

E-mail: mail@hkgamblers-recovery.org

Webpage: [www.hkgamblers-recovery.org](http://www.hkgamblers-recovery.org)

## **Appendix B**

### **Institutions Providing Counseling Service to Problem Gamblers in Macao**

#### **The Social Welfare Bureau of Macao—The Resilience Centre**

Address: Rua do Campo no. 103 Edf. Associacao de Construtores Civis e Empresas do Fomento Predial 1 andar B-D

Tel: (853) 28323902/Gambling treatment counseling hot-line (853) 28323998

Fax: 2832 3928

Webpage: <http://iasweb.ias.gov.mo/cvf/>

#### **Yat On Centre**

Address: Shop K, G/F, 7-11 Edificio Kam Loi, Rua do Comandante Mata e Oliverira, Macao

Tel: (853) 28210066/Gambling treatment counseling hot-line: (853) 28210033

Fax: (853) 28210099

E-mail: [info@yoc.org.mo](mailto:info@yoc.org.mo)

Webpage: <http://www.yoc.org.mo>

#### **Gabinete Coordenador Dos Servicos Sociais Sheng Kung Hui Macau**

Address: AR/C, G/F & 1/F, 415 Leisure Garden, Avenida Marginal do Lam Mau, Macau

Tel: (853) 2855 6818/Gambling treatment counseling hot-line: (853) 2822 3372/ (853) 2822 3373

Fax: (853) 28556203

E-mail: [gcfw@skhwc.org.mo](mailto:gcfw@skhwc.org.mo)

Webpage: <http://www.skhssco.org.mo>

#### **Shining Life**

Address: Y.M.C.A., 4/F Edificio Mei Kui Kuong Cheong (fase 2) (bloco 2-edf.S), Conselheiro Borja, Macau

Tel: (853) 2822 6146

Fax: (853) 2822 6147

E-mail: [shine@macautimes.net](mailto:shine@macautimes.net)

Webpage: <http://www.macautimes.net/Shine/>

**The Industrial Evangelistic Fellowship: Rehabilitation for Problem Gamblers**

Address: Rua Nova Da Areia Preta, R/C A, Bl.1, Ed. Nam Va San Chun, Macau

Tel: (853) 2845 3151/Gambling treatment counseling hot-line:(853) 6688 1354

Fax: (853) 2845 3153

E-mail: [info@moief.org](mailto:info@moief.org)

Webpage: <http://moief.org/>

**Christian and Missionary Alliance Church Union of Macao**

Address: Flat B, 4/F, Edificio Industrial Man Kei, 48-48D Avenida do Coronel Mesquita, Macau

Tel: (853) 28591495/Gambling treatment counseling hot-line: (853) 66590981

Fax: (853) 28591431

E-mail: [tgc@cmamacau.org](mailto:tgc@cmamacau.org)

Webpage: <http://www.cmamacau.org/tgc.htm>

**Chinese Christian Mission Macao**

Address: Calçada Do Gaio 2D, EDF Chi On, R/C, Macau (near Royal Hotel)

Counseling hotline: (853) 28353033

Fax: (853) 28353307

E-mail: [cmmacau@macau.ctm.net](mailto:cmmacau@macau.ctm.net)

Webpage: <http://www.cmmacau.org/>



## Appendix C

### Legalized Games in Macao

Gaming categories	Game types
Games of fortune (幸運博彩)	Roulette (輪盤)
Greyhound racing (賽狗)	Blackjack (廿一點)
Horse racing (賽馬)	Baccarat (百家樂)
Chinese lottery (中式彩票)	Fan-tan (番攤)
Sports lottery—football (足球博彩)	Cussec (骰寶)
Sports lottery—basketball (籃球博彩)	Paikao (牌九)
	Mahjong (麻雀)
	Slot machines (角子老虎機)
	Mahjong Paikao (麻雀牌九)
	3-card poker (富貴三公)
	3-card baccarat game (三公百家樂)
	Craps (花旗骰)
	Texas holdem poker (德州撲克)
	Tombola (泵波拿)
	Lucky Wheel (幸運輪)
	Live multigame (直播幸運遊戲)
	Stud poker (聯獎撲克)
	Casino War (娛樂場之戰)
	Fortune 3-card poker (富貴三寶)

## Appendix D

### Legalized Games in Hong Kong

Organization	Game types
The Hong Kong Jockey Club (香港賽馬會)	Horse racing (賽馬)
	Football betting (足智彩)
Mahjong schools (麻雀館)	Mahjong (麻雀) Tin Kau/Paikao (天九或稱牌九)
Social and recreational clubs who have obtained Tombola license	Tombola (豪波拿)