

## 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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