
6 What is problem gambling?

Box 6.1 Key messages

- Problem gambling has many impacts — such as relationship breakdown, financial problems and crime.
- There are a number of frameworks for understanding problem gambling, but problem gamblers often share a common set of characteristics, such as ‘chasing’ losses, lying about their gambling and lack of control.
- Problem gambling is generally not regarded as a mental illness for the bulk of the people who are affected by it, but some will need clinical assistance to resolve their problems.
- It is not useful to look at problem gambling as a ‘rational’ addiction — the evidence does not support the view that problem gamblers’ decisions are well informed or always rational.
- It is difficult to measure problem gambling among populations, and no existing single test instrument is perfect. The Commission has used the South Oaks Gambling Screen, self-assessment questions and other indications of harm from gambling to try to estimate the prevalence of problems. This three-way approach is better than relying on a single measure.
- Problem gambling is *not* only about people with severe problems or those needing counselling help. It is very important to see problem gambling as a continuum — with some people having moderate problems and others more severe ones. Public policy is appropriately directed at those who need help to resolve their problems, those whose lives are adversely affected without needing clinical or counselling intervention, and those who are at risk of developing problems.
- The Commission estimates that about 130 000 people have severe problems with their gambling, or about 1 per cent of the adult population. But a further 163 000 people are estimated to have moderate problems, which while not requiring ‘treatment’, warrant policy concern. In sum, around 293 000 people or 2.1 per cent of adults, are estimated to be experiencing significant problems with their gambling. And still others are at risk.
- On the basis of self-assessment questions, the Commission estimates that 250 000 adults (or 1.8 per cent of the adult population) have experienced significant harms as a result of gambling in the past year.
- Gamblers were also asked to self-rate whether they experienced problems with their gambling. On this basis, about 6.3 per cent of adults experienced some problems with their gambling — though it should be stressed that these were mainly minor.
- The prevalence of problem gambling varies by the mode of gambling, with higher prevalence for regular players of gaming machines, racing and casino table games. For example, around one in five weekly gaming machine players have significant problems. The prevalence of problem gambling is much lower among lotteries.
- The average duration of gambling problems is around 9 years.
- Problem gambling varies by state, with New South Wales having the highest rate — probably reflecting the greater availability of gaming machines.
- There are few clear socio-demographic factors that pre-dispose people to a higher likelihood of developing problems, with the exception that younger people (aged 18 to 25 years) are disproportionately represented among problem gamblers.

6.1 Introduction

While gambling is a pleasurable recreational pursuit for many, for a few it gives rise to problems. Those people spend increasing amounts of time and money on gambling, may lie about their gambling, find it difficult to control the impulse to gamble, and engage in socially destructive behaviour to continue to gamble (from relationship breakdown to crime).

This and the next two chapters examine aspects of problem gambling. In this chapter, we initially consider its definition and scope (section 6.2 and 6.3). The notion that problem gamblers are wholly rational — which has been proposed by some — is also examined. The Commission then considers some of the limitations in existing methods for trying to decide who is a problem gambler (section 6.4 to section 6.8). In particular, an obstacle to interpreting prevalence rates of problem gambling is that the level of gambling-related harms associated with scores on tests of problem gambling remains relatively unexplored. Section 6.6 therefore looks at these associations as a way of appraising the appropriate thresholds for measuring the prevalence of problem gambling.

Having developed an understanding about how to test for the presence of problem gambling, the Commission presents evidence on the prevalence of gambling problems (section 6.9). Section 6.10 then examines the socio-demographic characteristics of problem gamblers to help establish which groups are most vulnerable, while section 6.11 looks at the duration of gambling problems.

In the following chapter (chapter 7) the nature of impacts of problem gambling are discussed, including the extent to which these impacts reflect problem gambling, or pre-existing problems. Chapter 7 also examines empirical evidence on the financial impacts of problem gambling; the effects of problem gambling on the personal lives of problem gamblers, others and on Australian workplaces; and the issue of crime related to problem gambling.

Finally, chapter 8 examines evidence on the link between gambling accessibility and problem gambling — a link clearly relevant to government measures aimed at ameliorating problem gambling.

6.2 Defining problem gambling

There are a variety of definitions of problem gambling, from those that emphasise psychological features, such as loss of control, to those that list the variety of harms facing gamblers (box 6.2).

Box 6.2 **Some definitions of problem gambling**

The situation when a person's gambling activity gives rise to harm to the individual player and/or to his or her family, and may extend to the community (Market Solutions and Dickerson 1997, p. 2).

Problem gambling encompasses all of the patterns of gambling behaviour that compromise, disrupt or damage personal, family or vocational pursuits (National Council on Problem Gambling [US] 1997).

Preparedness to spend heavily, combined with frequent participation, implies that some gambling activities are strongly desired, and potentially habit forming. If the habit can become so strong that it leads to serious social consequences, then that is grounds for community concern about the regulation of gambling, and the measures in place to deal with its consequences (Tattersall's, sub. 156, p. 6).

Problem gambling may be characterised by a loss of control over gambling, especially over the scope and frequency of gambling, the level of wagering and the amount of leisure time devoted to gambling, and the negative consequences deriving from this loss of control (Select Committee on Gambling, ACT, 1999, p. 12 based on Hraba and Lee, 1996).

We use the term "normal" to define gambling behaviour over which the individual has control — that is, the person knows when to stop, having set pre-determined loss limits or having other work, family, or social commitments to attend to. On the other hand, we define "problem gambling" as gambling behaviour over which the person does NOT have control or which the person finds very hard to control and which contributes to personal, economic and social problems for the individual and family (Mental Health Association of Australia, sub. 51, p. 4).

Problem gambling is any pattern of gambling behaviour that negatively affects other important areas of an individual's life, such as relationships, finances or vocation. The mental disorder of "pathological" gambling lies at one end of a broad continuum of problem gambling behaviour (Volberg, Moore, Christiansen, Cummings and Banks 1998, p. 350).

...we will use 'pathological' and 'compulsive' gambling in an equivalent sense to describe gamblers who display clear signs of loss of control. 'Problem' gambling is used to refer to the wider group of people who show some but not all signs of developing that condition (Blaszczynski 1998b, p. 13).

Problem gambling is defined as a chronic failure to resist gambling impulses that results in disruption or damage to several areas of a person's social, vocational, familial or financial functioning.... Excessive gambling is used to describe a level of gambling expenditure that is considered to be higher than can be reasonably afforded relative to the individual's available disposable income and as a result produces financial strain (Blaszczynski, Walker, Sagris and Dickerson, 1997).

There is no concrete equation which formulates the sum of when gambling becomes a problem ... (Tasmanian Gambling Industry Group, sub. 120, p. 6).

Pathological gambling is a progressive disorder characterised by a continuous or periodic loss of control over gambling; a preoccupation with gambling and with obtaining money with which to gamble; irrational thinking; and a continuation of the behaviour despite adverse consequences (Richard Rosenthal quoted in Ferris 1995, p. 1).

There are a number of features widely recognised as characteristics of problem gambling, although not all of these aspects have to be present in a person who is

regarded as being a problem gambler (for example, see Dickerson, Baxter et al. 1995, p. 97). The aspects include:

Personal and psychological characteristics, such as difficulties in controlling expenditure; anxiety, depression or guilt over gambling; thoughts of suicide or attempted suicide; use of gambling as an escape from boredom, stress or depression; thinking about gambling for much of the time; and giving up formerly important social or recreational activities in order to gamble. As one gambler put it to the Commission:

My feeling of head spinning and confusion stops me from resisting the clubs and pubs with those gaming machines which are located so conveniently close to my home and shopping stores. There is always a ghost pushing me to sit in front of those very attractive gaming machines and encouraging me to put all my money into the machine to see the magnificent magic it does to my money (telephone comments from a gambler to the Productivity Commission — translated from Mandarin).

Gambling behaviours, such as chasing losses, spending more time or money on gambling than intended and making repeated but failed attempts to stop gambling.

Interpersonal problems, such as gambling-related arguments with family members, friends and work colleagues; relationship breakdown, or lack of time with the family.

Job and study problems, such as poor work performance, lost time at work or studying, and resignation or sacking due to gambling.

Financial effects, such as large debts, unpaid borrowings, and financial hardship for the individual or family members (either in the present, in the case of high gambling commitments out of current earnings, or in the future, in the case of assets that are liquidated to finance gambling).

Legal problems, such as misappropriation of money, passing bad cheques, and criminal behaviour due to gambling. In severe cases, these may result in court cases and prison sentences.

The primary, though not only, source of the problem associated with problem gambling is the financial loss (and the context in which these have been made) — which then has a range of repercussions for the social and personal life of the gambler. This is unlike alcohol or tobacco, where the harms appear to stem mainly from the *quantity* consumed. This aspect of gambling has two ramifications:

First, affordability becomes very important. As Blaszczyński, Walker, Sagris and Dickerson (1997) note:

Level of expenditure and time spent are in themselves inadequate criteria because they are relative to each person's available leisure time and disposable income, factors which are found to vary enormously across socioeconomic classes.

A high income gambler who loses \$10 000 a year out of an income of \$200 000 will probably not suffer significant adverse consequences, whereas the same expenditure out of an income of \$20 000 will probably entail highly problematic outcomes. This could be contrasted with alcohol, where high income is not an antidote to the ill-effects of high consumption.

Second, changes in the price of gambling (the odds) — whether brought about by altered tax arrangements or market developments — have their primary impact on problems through the change in expenditure they generate, not through the change in quantity consumed (cf alcohol or tobacco).¹ This is an issue taken up further in the taxation chapter (chapter 19).

6.3 A framework for assessing 'problem' and 'pathological' gambling

The *characteristics* of problem gambling — such as chasing losses, preoccupation, and conflict over gambling — are relatively easy to pinpoint and agreed on by many psychologists and psychiatrists. Different combinations of these characteristics form the basis for tests of whether a person is likely to be a problem gambler or not. However, the conceptual framework in which these problems are to be understood remains somewhat elusive. There remain disagreements over its causes, definition and framework. As noted by Star City Casino:

Analysis of the phenomenon is made more difficult by the various behavioural, psychological, medical and sociological explanations for it... Outside the pathological,

¹ This has an implication for the way the effect of price changes are considered. In a product where there are some harms from consumption (like tobacco and alcohol), policymakers are interested in the price elasticity of demand — the extent to which a proportional increase in price affects the proportional level of demand:

$$\epsilon = \left| \frac{p \cdot \partial q}{q \cdot \partial p} \right|$$

For gambling, interest centres on expenditure, and policymakers are now interested in:

$$\mu = \left| \frac{p \cdot \partial(pq)}{pq \cdot \partial p} \right| = \epsilon - 1$$

So the responsiveness of gambling expenditure to price increases is much less than the responsiveness of the quantity of gambling (eg time spent playing). Clearly, if the demand for gambling is inelastic for a given problem gambler (ie $\epsilon < 1$) then an increase in prices raises expenditure (and thereby probably harms).

addictive behaviour the definition of what is a gambling problem is even more difficult. Every person would have their own opinion on what constituted a level of gambling that is a “problem” (sub. 33, p. 16).

What is the appropriate model?

It is customary, for example in the United States, New Zealand and many other countries — as well as Gamblers Anonymous throughout the world — to see problem or ‘pathological’ gambling as a psychiatric disorder, in which problem gamblers are categorically distinct from other gamblers. In the United States, pathological gambling (the term given to what is seen as a psychiatric condition) is routinely tested using a series of questions from the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, (DSM-IV) of the American Psychiatric Association. However, this ‘medicalised’ perspective of gambling has been questioned, particularly by Australian researchers² and also by those who prefer a broader epidemiological model that includes the impact of the environment in which gambling takes place (Politzer, Yesalis and Hudak 1992). For example:

I see pathological gambling as probably non-existent as a discrete entity. Evidence ... suggests that people who gamble may at times exceed certain arbitrarily defined limits... They may reflect little excesses, large excesses, episodic behaviour, frequent behaviour, accepted behaviour in a sub-culture, not accepted behaviour in a family culture (Allcock 1995, p. 114).

The concerns over the medicalised model arise because:

- the pattern of behaviours exhibited by problem gamblers do not consistently fit with typical conceptions of a genuine mental illness and ‘pathological’ gamblers do not appear to suffer a set of clearly defined mental symptoms which suggest a distinctive mental illness;
- the mental disease model tends to see problem gambling as a progressive disorder which can only be stemmed through lifetime abstinence, rather than as a continuum of problems of varying severity and duration;
- it tends to ignore the ways in which the social environment in which gambling takes place (including its promotion, education of users and machine design) affects prevalence rates and harm. A medicalised model tends to concentrate on ill people, rather than social processes which lead to harm;
- gambling has much greater social acceptability in Australia than in the United States or a number of other countries, and a wider spectrum of gambling behaviours are regarded as perfectly normal. It is argued that the use of

² For example, Walker (1995); Allcock (1995); Dickerson, McMillen, Hallebone, Volberg and Woolley (1997); and Dickerson (1997).

judgements about problematic behaviour based on another country's norms runs the risks of mislabelling some people as ill when they are not; and

- a concern that some of the nomenclature customarily used to describe the problem — such as the term 'pathological' gambler — may be perceived as pejorative and work against resolution of the problem (for example, Elliot Stanford and Associates 1998, p. 10).

However, some have noted that the avoidance of the psychiatric nomenclature in Australia may reflect a concern to downplay the significance of harmful impacts generated by gambling. The Commonwealth Department of Health and Aged Care noted:

Some researchers, however, consider that the process of re-definition can create a benign image for a potentially addictive activity while ensuring that responsibility for gambling-related problems is seen to rest with the individual rather than the gambling industry (sub. 163, p. 8).

Problem gambling sounds less severe than pathological gambling. More recent Australian nomenclature, which is couched in terms of departures from 'responsible' gambling, further weakens the perceived severity of these gambling behaviours, and thereby the motivation to intervene.

As well, there is a concern that if problem gambling is defined too imprecisely then it may lead to poorer outcomes for the people who are most affected. Walker (1998b, pp. 47-8) notes:

Interestingly, government policies in Australia and New Zealand differ in their stances towards gambling problems and their genesis. Excessive gambling in New Zealand is regarded as pathological, whereas in Australia a more pragmatic stance is taken. In Australia, whether or not excessive gambling is an illness is regarded as essentially irrelevant. Rather, excessive gambling causes problems for some people and it is those problems which must be addressed... In developing a coherent policy on the treatment of problem gamblers, this pragmatic stance constitutes a stumbling block.

Walker's concern is that because problem gambling is not seen as an illness, help services have mainly been oriented towards general counselling services, rather than the sort of therapies customarily used by psychiatrists or clinical psychologists in treating control disorders. Ralph Gerdelan, representative on the New Zealand Committee on Problem Gambling Management, echoed this viewpoint:

During 1997 the Compulsive Gambling Society, when it was running this service, ran an incidents book where there were some 411 suicide attempts out of a population of 1200 pathological gamblers engaged in treatment over the period of that calendar year. That's a very significant ratio... For that reason we see this disorder as fitting within mental health services where trained and registered clinicians working to best practice diagnostic standards are predominantly involved (transcript, p. 458).

As well, some expressed concern that because ‘compulsive’ gambling is not recognised as a psychiatric condition, certain legal recourses are not available for affected family members:

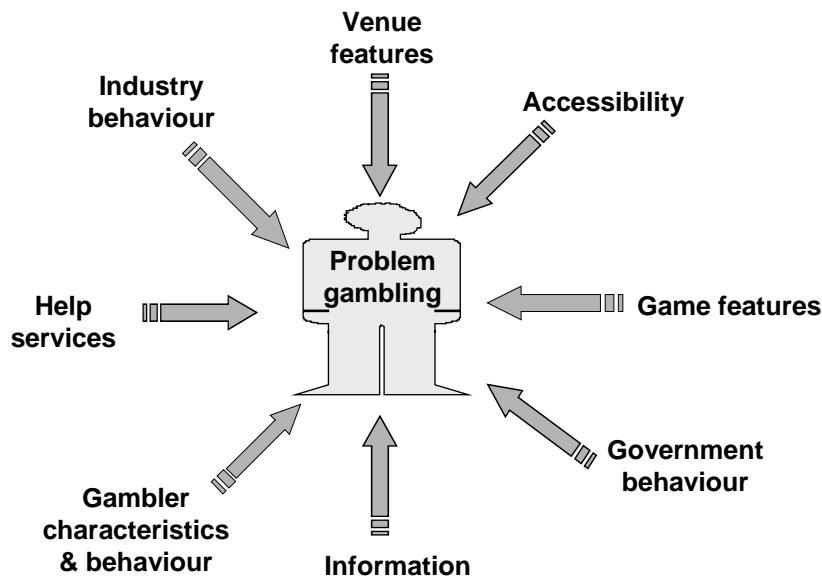
A gambler may present three or four criteria for scheduling under the Mental Health Act, ie, be jeopardising their financial security, damaging their reputation and destroying their family relationships. In compulsive gamblers, it is obviously gambling which is jeopardising their financial security. However, under the NSW Mental Health Act, gambling is not recognised as a psychiatric condition, so therefore it is not possible to force a compulsive gambler to have a psychiatric assessment... This failure to deal with gambling as a possible psychiatric condition means that if compulsive gambling is an extension of some other underlying disorder such as manic depression or chronic depression, this disorder goes untreated because it is not possible to have a psychiatric assessment (sub. C16, p. 1).

However, most Australian research and policymaking concerning gambling has avoided the psychiatric nomenclature and framework for problem gambling, in favour of *wider*, but less precise, definitions of harm (such as that of MS-D 1997 in box 6.2). The problems are typically couched in terms of harms experienced or perceived by the gambler or ‘significant others’ (people close to the gambler). The virtue of this approach is that it admits aspects of problem gambling that are ignored by the previous framework — such as problems that arise within certain ethnic or cultural groups over gambling, systematic misperceptions consumers may have over gambling, and risks posed by the venue in which gambling takes place (for example, alcohol and gambling) — without straightjacketing the concept into a single category of medical illness. This has implications for social policy, for example, by placing an emphasis on considering issues of informed consent, venue and gambling design, education and community awareness and other harm minimisation strategies.

The two divergent frameworks can be somewhat reconciled if it is accepted that problem gamblers are a heterogeneous group (Blaszczynski 1996; Dickerson 1995, p. 100; O’Connor in sub. 105) and that the problems emanate from a multiplicity of environmental, social and psychological facets (figure 6.1). O’Connor, noted that:

The genesis of problem gambling is multi-factorial ... Many excessive gamblers have a monetary motive (with faulty beliefs as to the likelihood of winning and/or pressing debts), and some are seeking relief from boredom. Yet others seem to use gambling as a means of escape from low mood, stress and anxiety, sometimes associated with intolerable life circumstances (sub. 105, p. 2).

Figure 6.1 **An epidemiological framework for problem gambling**



Thus, in some cases, the problems may stem from behaviours conditioned by the nature of the rewards offered by gambling. In others, problems may stem from a false understanding of gambling (the cognitive model). In others, the problems occur because of boredom, social isolation, depression or cultural factors. And if the reasons for problem gambling vary, so do the impacts, from relationship breakdown to financial and legal problems to depression and suicide. Given that problem gambling is multi-dimensional in this sense, it would seem appropriate to consider *some* problems as inherently medical (requiring treatment by associated experts). Equally, however, other problems may require different models of help and resolution. This is taken up in greater detail in chapter 16.

Is problem gambling a 'rational' addiction?

The bulk of the literature concerned with problem gambling takes a sociological, psychological or a psychiatric approach to problem gambling. Whatever their disagreements, these approaches are based on observations on the experiences of large groups of problem gamblers, and see problem gambling behaviour as clearly adverse for the individual affected.

However, a submission by ACIL (sub. 155, pp. 91–6), on behalf of some major gambling providers, argues that these conceptual frameworks are faulty and rely on the questionable assumption of consumer irrationality. Instead, ACIL proposed that gambling addiction could be persuasively seen as forward-looking rational

behaviour³ — the so-called ‘rational’ addiction model. The rational addiction approach provides an internally consistent approach to ‘addiction’ that does not require unstable preferences. The assumption that agents are generally rational and systematic in their patterns of behaviour is a generally attractive feature of models of human behaviour — and a strength of the rational addiction approach.

The rational addiction model is an economic theory, based on the idea that ‘forward looking’ compulsive gamblers (or indeed ‘addicts’ of heroin or alcohol) weigh up the pleasure of their consumption of gambling (now and in the future) against its costs. In this model, they are habituated to gambling, not because of irrationality, but because what they have consumed in the past increases the pleasure of current consumption. The model does not ignore the harms that are posed by the addiction. It posits that rational addicts weigh these harms against both the forgone pleasure of current and future consumption, and the trauma of cutting down or ceasing consumption.

However, unlike alternative frameworks for addictive behaviour, the model assumes that people act rationally at all points, so that their decisions always reflect their preferences. This has the implication that problem gamblers are better off with their addiction than without it:

Some critics claim that the model ... is unsatisfactory because it implies that addicts are “happy”, whereas real-life addicts are often discontented and depressed... Although, our model does assume that addicts are rational and maximise utility, they would not be happy if their addiction results from anxiety-raising events, such as a death or divorce, that lower their utility. Therefore our model recognises that people often become addicted because they are unhappy. *However, they would be even more unhappy if they were prevented from consuming the addictive goods* (our italics) (Becker and Murphy 1988, p. 691).

Indeed, under this model, the concept of a genuinely *problem* gambler (alcoholic or drug abuser) virtually vanishes altogether, because any problems faced by the gambler must, by definition, be outweighed by some offsetting personal benefits to explain the decisions that are observed. The model has major implications for the enumeration of the costs and benefits of gambling; namely:

- that none of the personal costs of gambling should be counted in cost-benefit analysis (which the Commission does in chapter 9); and
- that it would not be correct to discount the consumer surplus of problem gamblers in any way (as done in chapter 5).

³ However, the ACIL submission also describes problem gamblers as a ‘small number of people with deep seated personality disorders’ (p. 71), with the seeming implication that they are not perfectly rational. In any case, there is little evidence that problem gamblers could be generally characterised as having personality disorders.

However, the theory has a number of limitations, and it has not entered mainstream thought about addictions:

- The literature on rational addiction is relatively sparse. No empirical test appears to have been conducted applying the model to gambling in the economics literature.⁴ The tests that have been conducted — predominantly of tobacco and alcohol — do not adequately distinguish the rational addiction hypothesis from other possible explanations for the phenomena observed. They also suffer from other methodological limitations (Ferguson 1996).
- It is not clear why a person would choose to pre-commit to zero consumption (for example, via self-exclusions) if, at all times, consumption reflects personal preferences. Pre-commitment implies that a person wishes to bind future consumption because they are concerned about what their future selves may do (O'Donoghue and Rabin 1999).
- The model does not fit with the lived experiences of people with gambling problems, or the persistent misconceptions they have about winning (which are the object of cognitive therapies).
- It also ignores the substantial literature on impaired control that seems to be a consistent feature of many people with severe gambling problems (Baron, Dickerson and Blaszczynski 1995).⁵

It should be emphasised that if problem gamblers are not rational addicts, this does not imply that there is no rationality in their decision making. The alternative to 'rational addiction' is not 'insanity' as ACIL implies (sub. 155, p. 96). People may be boundedly rational when making consumer choices, and may suffer from misperceptions and periodic impaired control. They may, nevertheless, still exercise some controls over their gambling. For example, they may commence gambling close to the last race, take a certain amount of money to a venue and avoid going alone when gambling. The fact that problem gamblers remain rational about some of their gambling decisions and that problems emerge as a result of periodic and partial lack of control offers some hope for harm minimisation measures (as noted in chapter 16). It may be that one of the contributions of the rational addiction literature is to give greater weight to the ability to provide useful information and reasoning tools to people when they are making decisions about their gambling — but without taking this to the extreme level posited in the formal model.

While the Commission does not consider the rational addiction model an appropriate framework for analysis of problem gambling, it is important to note that

⁴ Using the EconLit database of economic literature.

⁵ While some aspects of what appears to be impaired control may not be inconsistent with rational addiction models (eg impulsivity could reflect high discount rates) others appear to be.

even if it were viewed as a credible model, it has far fewer implications for policy than read into it by ACIL. They posited the rational addiction approach as a justification for a minimalist government role in regulating gambling:

... since compulsions of various kinds are readily explainable as behaviour within rational bounds, we believe governments are not entitled to treat compulsive gamblers as insane people whose habits warrant paternalistic intervention to force them to desist (sub. 155, p. 96).

However, it is not certain that this conclusion follows from the model, once information imperfections and externalities are considered. The rational addiction model does not necessarily rule out government action:

- While people are forward looking, they do not have perfect information about the risks of problem gambling or the harms that it can involve.⁶ There may be public good grounds for providing information about the risks — and indeed Becker and Murphy (1988, p. 687) point out the efficacy of government provided information in stemming tobacco use in the United States.
- The model does not preclude government involvement in trying to research better ways of helping people who develop gambling problems or (on equity grounds) providing general assistance to problem gamblers and their families.
- Since significant costs associated with problem gamblers fall on others as externalities — such as family members or crime victims — this still justifies potential government actions to prevent problem gambling.

The most important policy-relevant conclusion from the rational addiction model is that prices can, counterintuitively, have substantial long-run effects on the level of addictive demand (Becker and Murphy 1998, p. 695):

Permanent changes in prices of addictive goods may have a modest short-run effect on the consumption of addictive goods. This could be the source of the general perception that addicts do not respond much to changes in price. However, we show that in the long-run, demand for addictive goods tend to be more elastic than the demand for non-addictive goods.

Once it is accepted that there are externalities from problem gambling, the rational addiction model would appear to justify high taxes on gambling as a measure to control problem gambling — although empirical models to confirm whether price elasticities conform with the pattern predicted by the model have not been estimated.

⁶ A point that Orphanides and Zervos (1995) develop.

What evidence can be used to illuminate problem gambling?

ACIL (sub. 155, p. 71) argued that ‘casual empiricism and folklore dominate most commentaries on problem gambling’ which raises the question of what sort of evidence should be adduced when looking at a phenomenon like problem gambling. The Commission does not consider that any one type of evidence is sufficient, and has considered a multiplicity of sources:

- the opinions of experts on gambling — such as sociologists, psychologists and psychiatrists;
- studies of people who have sought help for their gambling problems (and of associated significant others);
- surveys of special groups — such as prison populations;
- surveys of the general population;
- statistical techniques, which match data on problem gambling prevalence with social impacts — such as suicide and bankruptcy; and
- the personal anecdotes of problem gamblers and of counsellors and others who deal with problem gambling.

The use of personal anecdotes requires some comment, because they are sometimes rejected as sources of evidence.⁷ In the Commission’s view, while they cannot be used to *measure* impacts, such anecdotes can cumulatively provide scientifically useful information about problem gambling. They better illuminate how problem gamblers see their world and what sort of problems are posed by their behaviours. It is easy to understand the distress caused by a broken leg, because we can quickly identify with the nature of the problem. With psycho-social problems like problem gambling, we need to understand the dimensions (or the categories) of harm and the control mechanisms used by problem players — and anecdotes can help do this. Anecdotes also have the virtue that they provide evidence about the plausibility of some explanations for problem gambling, such as ‘rational’ addiction, which seem inconsistent with the lived experiences of those affected.

As well as reviewing the available Australian research, the Commission has also examined relevant overseas research, mainly in the United States, Canada and New Zealand. Overseas research is examined because:

- where Australian research results are not extensive (for example, adolescent gambling, expenditure shares of problem gambling, co-morbidities), it is common for Australian commentators to use overseas research as a guide to

⁷ For example, O’Neill, acting as a consultant for ACIL, considered that the anecdotes were ‘not scientific’ (ACIL, sub. D233, p. 91).

social impacts in Australia. In some cases this strategy may be appropriate, but in other instances, differences in gambling availability, demographics and social norms may render it inappropriate. By looking at comparisons of social impacts where both Australian and overseas data are available, it is possible to get an understanding of how valid it will be to use overseas data for circumstances where Australian data are thin;

- it provides scope for corroboration of Australian results. For example, if an Australian measure of a social impact of problem gambling is very different to that found overseas, and no obvious cultural, demographic or other factor seems to explain the difference, then it might suggest survey bias;
- it provides scope for better understanding the processes that underlie problem gambling. From an epidemiological perspective, it is desirable to have a variety of environments in which to measure risks. This is particularly important when looking at the question of the link between accessibility and problem gambling; and
- it may provide a guide to methodologies and data collection which should be undertaken in Australia.

In addition to already published research and existing databases (both in Australia and overseas), the Commission conducted three surveys to look more closely at problem gambling: the *National Gambling Survey*, the *Survey of Clients of Counselling Agencies* and the *Survey of Counselling Services*. Of these, we use the first two intensively in this chapter (box 6.3, appendix F and G).

6.4 How can problem gambling be tested?

In order to try to estimate how many Australians have gambling problems, a test is required. A range of tests are used by researchers to try to measure whether a person is a problem gambler, of which the two most common are:

- the South Oaks Gambling Screen (SOGS). This test — which has produced many minor variants — was developed by Lesieur and Blume (1987). The test poses questions about a gambler's behaviour, such as whether they 'chase' losses, have problems controlling their gambling, gamble more than intended, feel guilty about gambling and believe that they have a problem (box 6.4). Its prime focus is on the financial aspects of gambling; and

Box 6.3 The Commission's national and problem gambling client surveys

The National Gambling Survey

This survey was the first fully national survey into gambling behaviour and problem gambling prevalence to be carried out in Australia (appendix F). The survey was also the largest prevalence survey conducted in Australia and one of the largest carried out anywhere. It was implemented as a telephone survey of the general adult population (18 years or older). The sample of about 10 600 telephone interviews was stratified by area, age and gender. The sample was distributed across state/territory and metropolitan/country regions roughly in proportion to population, using the latest available Australian Bureau of Statistics (ABS) census data. However, coverage in the smaller states/territories was boosted to allow comparisons across jurisdictions to be made with reasonable statistical precision.

A sampling strategy was developed as a two stage approach. In *Stage 1*, a brief questionnaire (or 'screener') was completed by 10,600 adults, for the purpose of identifying whether a respondent was a non-gambler, a regular (weekly) gambler or a non-regular gambler. In *Stage 2*, a more detailed questionnaire was completed by respondents on the basis of a selective interviewing strategy: *all* respondents classified as regular gamblers were interviewed; 1 in 2 respondents classified as non gamblers were interviewed; and 1 in 4 respondents classified as non-regular gamblers were interviewed. Survey protocols were put in place to maximise the contact rate and to minimise non-response (refusals). The response rate achieved was equal to or better than previous Australian surveys and very similar to the recent survey undertaken in the United States for the National Impact Gambling Study Commission.

The questionnaire was vetted by leading Australian researchers in the gambling field.

The Survey of Clients of Counselling Agencies

This survey was implemented as a structured face-to-face survey (appendix G), with counsellors from counselling agencies acting as paid interviewers, using detailed instructions and random selection of candidate clients. It asked questions about expenditure, the nature of gambling, and comprehensive questions about the impacts of gambling (including some positive effects). It also included a standard set of socio-demographic questions.

The survey was implemented throughout Australia, and the results presented here are based on 404 returns, though in some cases, some respondents did not answer some questions. A non-response survey was also implemented for those clients who refused to participate at all, so as to confirm whether the sample of respondents who replied were statistically different from those who refused.

The survey went through a process of professional appraisal by Australian experts in the gambling field, and also obtained approval from the Ethics Committee of the Commonwealth Department of Health and Aged Care (since it amounted to human subject research).

Box 6.4 **The South Oaks Gambling Screen: the lifetime version**

1. When you gamble, how often do you go back another day to win back money you lost? (never; some of the time [less than half the time] I lost; most of the time I lost; every time I lost)
2. Have you ever claimed to be winning money gambling but weren't really? In fact you lost? (never or never gamble; yes, less than half the time I lost; yes, most of the time)
3. Do you feel you have ever had a problem with gambling? (no; yes, in the past, but not now; yes)
4. Did you ever gamble more than you intended to? (yes, no)
5. Have people criticised your gambling? (yes, no)
6. Have you ever felt guilty about the way you gamble or what happens when you gamble? (yes, no)
7. Have you ever felt like you would like to stop gambling, but didn't think you could? (yes, no)
8. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children or other important people in your life? (yes, no)
- 9a. Have you ever argued with people you live with over how you handle money? (yes, no)
- 9b. If you answered yes to the previous question: Have money arguments ever centred on your gambling? (yes, no)
10. Have you ever borrowed from someone and not paid them back as a result of your gambling? (yes, no)
11. Have you ever lost time from work (or school) due to gambling? (yes, no)

If you borrowed money to gamble or pay gambling debts, who or where did you borrow from? (check 'yes' or 'no' for each).

12. From household money? (yes, no)
13. From your spouse? (yes, no)
14. From other relatives or in-laws? (yes, no)
15. From banks, loan companies, or credit unions? (yes, no)
16. From credit cards (yes, no)
17. From loan sharks? (yes, no)
18. You cashed in stocks, bonds or other securities? (yes, no)
19. You sold personal or family property? (yes, no)
20. You borrowed on your checking account (passed bad checks)? (yes, no)

Scores are as follows. On question 1, score 1 if most of the time or every time I lost. On question 2, score 1 if less than half the time I lost or yes, most of the time. On question 3, score 1 if yes, in the past, but not now or yes. Ignore question 9a. On all remaining questions score 1 if a yes. A score of 5 or more suggests a person is 'probable pathological gambler' using the US nomenclature, and a problem gambler in Australia.

Source: Lesieur and Blume (1987, p. 1188).

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- the DSM-IV. This shares many features of the SOGS, but has a greater emphasis on psychological aspects of problems, such as preoccupation, development of tolerance, irritability, and gambling as an escape (box 6.5).⁸

A variant of the SOGS (that asks about current rather than lifetime problems) has been applied in all past Australian problem gambling prevalence studies. The SOGS (or close derivatives) has been the most widely used test around the world. For example, it has recently been used by the New Zealand official statistics agency to investigate the prevalence of gambling problems there. It was also employed in the recent Swedish national prevalence study, and will be used in a UK prevalence study also being undertaken in 1999. Of recent national prevalence studies, only the national US study did not employ a variant of the SOGS.

However, just because the Commission used a variant of the SOGS does not mean that it considers that the test is without faults or that it is not worth devising and testing new instruments. Other tests have been, or are being, developed — an issue to which we return in section 6.8.

The SOGS is used to identify a more narrow range of problems than is encapsulated by the broad definition of harm that is now often used by Australian policymakers. This suggests that the SOGS will tend to miss some of the broader set of gambling problems that interest Australian researchers. The Australian approach has been a pragmatic hybrid between one based on accepting that the community and personal dimensions of problem gambling are broader than a clinical problem, and using a US ‘clinical test’ approach to measure some aspects of the problem.

The Commission used a variant of the SOGS in which people were asked about behaviours over the last 12 months associated with gambling. This is different to the original SOGS which asks about behaviours associated with gambling *ever* experienced by the respondent.⁹ The screen was used by the Commission in its *National Gambling Survey* and the *Survey of Clients of Counselling Agencies* so as to produce prevalence estimates of problem gambling which could be compared with others (although the Commission also used a number of other approaches to assess some of the prevalence of, and harms associated with, gambling).

⁸ Questions 1,2,3,4 and 5 on the DSM-IV have no counterpart in the SOGS, while item 3 matches SOGS question 7, item 6 matches SOGS question 1, item 7 matches SOGS question 8, item 8 matches SOGS questions 10 and 20, item 9 has weak associations with SOGS questions 5, 9b and 11, and item 10 has associations with SOGS questions 12,13,14,15,16 and 17. SOGS questions 3,4,6,18 and 19 have no counterparts in the DSM-IV.

⁹ It is also different to the SOGS-R which asks the SOGS questions on both a lifetime and a current period basis.

The original SOGS was validated by Lesieur and Blume in a clinical setting using a known group of client gamblers who satisfied the DSM-III criteria for ‘pathological gambler’. In the United States, a SOGS score of 3 or 4 is taken to indicate a ‘problem’ gambler; and a score of 5 or more a ‘probable pathological’ gambler (although these thresholds are hotly contested in Australia, as is the validity of using the test at all by some). In its development phase, the SOGS has been subjected to a range of validity and reliability testing — involving some 1616 subjects (Lesieur 1994). However, the original SOGS has been changed in many ways — from slight wording changes, to revisions for adolescent use, to changes in the period under investigation — and these versions have not been subjected to extensive validity tests.

There are a range of issues about how to interpret the results from any test of problem gambling. These seemingly esoteric academic issues are in fact crucial to policy analysis, since very different social impacts from gambling may be discerned depending on how the tests are interpreted. We turn to these issues next.

6.5 Problem gambling lies on a continuum

Ultimately, precise tests of problem gambling are impossible, because, as noted by Shaffer et al. (1997, p. ii-iii), the phenomenon itself lies on a continuum of differing degrees of severity (figure 6.2) from no problems (level 1 gambling) to severe problems (level 3 gambling). Therefore, constructing a threshold depends on *judgements about what levels of severity are policy relevant*. For example, some gamblers report that they gamble to make up for past losses — ‘chasing losses’. Given the odds, this is a self-defeating strategy, which in itself points to a consumer awareness problem of some sorts and which conceptually can be counted as part of the costs of gambling.

Box 6.5 The DSM-IV

A. Persistent and maladaptive gambling behaviour is indicated by *five (or more)* of the following:

1. is preoccupied with gambling (eg preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble),
2. needs to gamble with increasing amounts of money in order to achieve the desired excitement;
3. has repeated unsuccessful efforts to control, cut back, or stop gambling;
4. is restless or irritable when attempting to cut down or stop gambling;
5. gambles as a way of escaping from problems or relieving a dysphoric mood (eg feelings of helplessness, guilt, anxiety, depression);
6. after losing money gambling, often returns another day to get even ("chasing one's losses");
7. lies to family members, therapists or others to conceal the extent of involvement with gambling;
8. has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling;
9. has jeopardised or lost a significant relationship, job or educational career opportunity because of gambling;
10. relies on others to provide money to relieve a desperate financial situation caused by gambling.

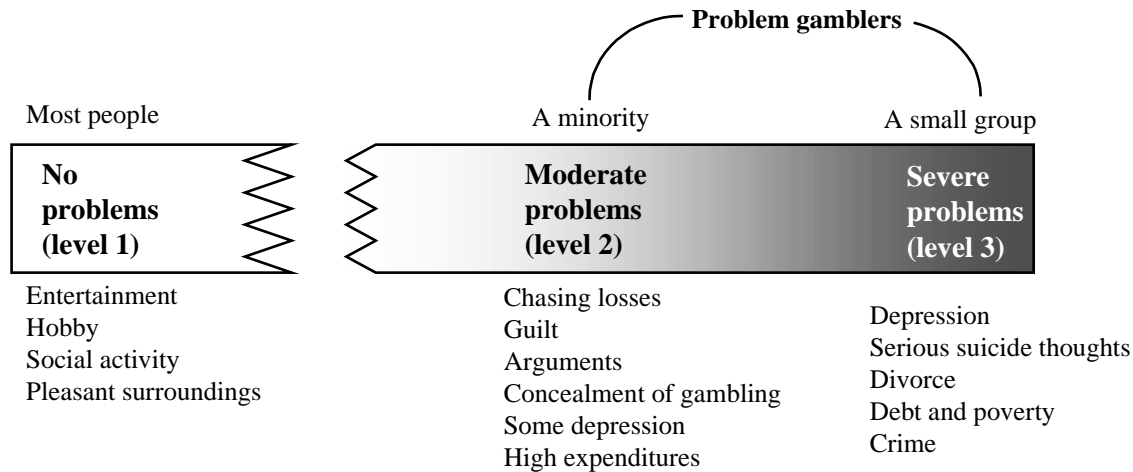
B. The gambling behaviour is not better accounted for by a manic episode.

The DSM-IV is a set of clinical criteria. On some occasions it has been implemented as a prevalence test. For example, the National Gambling Impact Study Commission used the criteria in a set of questions — the NORC DSM-IV Screen. The screen was implemented for people who has lost more than \$100 in a one day or across a year. A person getting a score of 1-2 is termed 'at risk, a person scoring 3-4 is termed a problem gambler, while a person scoring 5 or more is termed a 'pathological' gambler.

Source: Dickerson et al. (1997, p. 14), National Gambling Impact Study Commission Report (1999, p. 4-6).

The difficulty of identifying the 'right' threshold for problem gambling stems from the fact that 'cases' are not clearly defined where the severity of the problems varies along a continuum. In some areas of public health it is easy to define a case. For example, someone either has HIV or they do not. But with problem gambling (and a range of other possible areas, such as obesity and diabetes) it is not clear where along the continuum people can be said categorically to have a 'problem'. If the threshold for defining problems is set low then obviously a lot of people are said to be 'problem' gamblers, in the same sense that there will be a lot more 'obese' people if obesity is defined as being 10 per cent overweight rather than 20 per cent overweight.

Figure 6.2 The gambling continuum



How cutoffs for the SOGS (or for that matter a test of any problem which lies along a continuum) should be selected, depends on the purpose of the test. There are many possible purposes of tests, but we consider four in particular.

A test for determining who needs help

In some instances the purpose of the test is to calculate (from an epidemiological study of a national population) the number of cases of people who have problems relating to their gambling that require *intervention by help services* (level 3 problem gamblers). This number will be used to help estimate the resources needed to deal with the problem. Typically, in this instance a high threshold will be selected.

The method for rigorously determining this threshold is to examine how the harms associated with problem gambling vary as the test score rises. This is how thresholds are selected for other public health tests — such as diabetes and obesity.¹⁰ At some point, public health officials decide that the risks of costly morbidities (or mortality) justify the identification of a group of people who need active help. While single thresholds may be chosen as rules of thumb (such as the notion of a score of 30+ on the Body Mass Indicator for obesity), it is often recognised that different thresholds are required for different groups of people (for example, males versus females).

The important point is that determining the threshold for direct intervention should be based on evidence, rather than arbitrarily selected.

¹⁰ See for example, the evidence-based approach for diagnosis and treatment of obesity (http://www.nhlbi.nih.gov/nhlbi/cardio/obes/prof/guidelns/ob_home.htm).

A test of public health risks in the general population

In other instances the purpose of tests, like the SOGS, is to identify the number of people with public health or other risks which are significantly higher than the average — clearly a larger group than the one identified above (level 2 problem gamblers in figure 6.2).

Dickerson et al. (1996a) have usefully developed the notion of the ‘at risk’ gambler.¹¹ People identified in this at-risk group may experience harms from gambling, but not at levels which justify specific individual interventions. However, such groups may have large policy significance — being the target for public health campaigns, information provision and preventative strategies (either intended to cut the number of people in this at-risk group or to prevent the likelihood of people moving to the group which do need individual interventions).¹² If tests reveal large numbers of people in this group, governments may consider regulations or other policy instruments to deal with the problems.

A screening test in clinical and counselling settings

A test may be used as a screen to discriminate between people in a particular group who do not need ‘treatment’ and those who probably do. Screens are always intended to over-diagnose a problem, because it is recognised that the costs of under-diagnosis are often severe (for example, missing a genuine case of breast cancer because of poor screening is likely to be more costly than initial over counting of possible cases). Thus the thresholds set for screens are usually too low to be useful for epidemiological assessments of prevalence — and may generate excessively high prevalence rates.¹³

The SOGS had its origin as a screening tool — and this is one reason that some researchers have been concerned that it over-estimates the prevalence of problem gambling. In fact, there are some offsetting factors (see below) that suggest that the SOGS may still be useful for counting the number of people affected by gambling problems in the general population.

¹¹ Again an analogy is the concept of being overweight cf obesity.

¹² In the same way that government strategies aimed at limiting the excessive use of alcohol — especially when driving a car or using machinery — are not targeted at alcoholics, but at people whose consumption of alcohol is excessive for the context in which they find themselves.

¹³ As noted by Culleton (1989), Abbott and Volberg (1992, p 83), and Dickerson (1993, 1997), what may be a useful and efficient screen in a group where problem gamblers form a sizeable group will perform less efficiently where problem gamblers comprise only a small group — the ‘base’ problem.

A test to estimate costs

A test may be used to help estimate the costs of a potential public health problem. Once a problem lies on a continuum, the costs need to be assessed by looking at the magnitude of problems for *all* people who are adversely affected by gambling, not just those people whose risks identify them as a ‘case’ under definitions of level 2 or 3 gambling above (box 6.6).

When a test like the SOGS can have at least four different purposes, it is possible to have a confused debate about where thresholds should be set. Someone trying to identify the resources needed to provide help services will use a higher SOGS score than someone trying to identify the number of at-risk cases for public health reasons. Someone trying to identify the costs of gambling will look at harms that span all SOGS scores. *Unless each researcher clearly indicates the purpose for which the SOGS (or any other test of problem gambling) is being used, then they may appear to be at loggerheads when they are not.*

Unfortunately, many of those who use the SOGS do not state the purpose for which they are using the test.¹⁴ A claim that it is being used to identify the prevalence of problem gambling in the general population is not a clear-enough statement of purpose unless the term ‘problem gambler’ is unambiguous, which it is not. Moreover, unlike diabetes or weight problems, where substantial evidence about the costs associated with differing diagnostic test scores have been used to calibrate the tests, the level of harms associated with gambling have not been used to set threshold levels.

It should be emphasised that a test of problem gambling does not *itself* have to measure the harms associated with gambling (though the SOGS does in fact do this partially), nor does it need to establish a causal process for harms (for example, by trying to find a set of psychological processes underlying problematic behaviours). It only has to suffice as a predictive tool, where scores are sufficiently correlated with harms that it is useful. This in turn implies that the fact that SOGS only incompletely documents the harms from problem gambling is not necessarily a limitation of the test, rather that more information is needed to interpret any score on the test. An analogy is the ‘pinch test’ for body fat. It says nothing about the causes underlying the accumulation of fat, nor anything about the harms caused by being overweight. It just establishes a yardstick for measuring fat.

Before estimating the prevalence rates of problem gambling in section 6.9, we look at how the adverse impacts of gambling vary with differing SOGS scores. That

¹⁴ Dickerson and Baron (1994) represents one attempt to differentiate the various purposes of such tests and to discuss criteria for setting thresholds.

information is used by the Commission to assess the now commonly employed 5+ and 10+ thresholds, as well as a range of possible alternatives.

Box 6.6 Tests designed to measure social/economic costs: an illustration

Suppose that out of a population of 1 million there was:

- a 'need treatment' (level 3) group of 0.5 per cent (ie 5000) and that 40 per cent of these engaged in a crime relating to gambling every year;
- an 'at risk' group (level 2) of 1.5 per cent (ie 15 000) and that 5 per cent of these engaged in a crime relating to gambling each year; and
- a residual 'least harm' group (level 1) — comprising 98% of the population (980 000) — and that 0.25 per cent of these engaged in a crime related to gambling.

The number of crimes committed because of gambling is therefore the sum of the three — 2000 plus 750 plus 2 450.

For convenience of exposition, suppose that the cost of each crime was identically \$2000. In this illustrative case the total cost of problems associated with gambling-related crime in this population is \$10.4 million. Of this cost, 38 per cent is accounted for by the 'need treatment' group, 14 per cent by the 'at risk' group and a very large 47 per cent by the residual 'least harm' group. Whether, in fact, the 'least harm' group accounts for such a significant share of the economic costs of problem gambling is examined in chapter 9 — but the point is that conceptually it is important to look at the costs of harms across all groups of people, not just those which are determined as 'cases' for other public health policy purposes.

6.6 Getting the thresholds right to identify problem gamblers

Defining the problem

Few tests are perfect. A major problem in many tests is that they fail to classify people correctly:

- If a test score falsely indicates that someone is a problem gambler this is known as a 'false positive'.
- Conversely, if a test score falsely indicates a problem gambler as a non-problem gambler then this is known as a 'false negative'.

False positives are decreased for any given test by raising the threshold required to score positive, whereas false negatives are reduced by lowering the threshold.

A central concern in Australian studies has been that many people with SOGS scores of between 5 and 10 may, in fact, be highly motivated regular gamblers who face little real risks from their gambling (Dickerson et al. 1996a, p. 61) and would, therefore, scarcely require individual intervention to help them. Most Australian surveys have tried to reduce the false positive problem by raising the threshold of the test score or by reducing the timeframe relevant for the test. This has led to the routine adoption of two variations in the implementation of the SOGS:

- the use of a higher cutoff SOGS score (10 or more) to indicate problem gambling.¹⁵ In contrast, researchers in New Zealand, who have undertaken large scale multi-stage studies of problem gambling, advocate using the SOGS with a score of 5 or more as indicative of a problem, as do most other countries; and
- asking people to make judgements about their gambling over the last 6 or 12 months rather than over a lifetime. This revision to the SOGS recognises that someone who once had a problem may not have one currently¹⁶ — and is now in routine use around the world (Delfabbro 1998, p. 122).

The Commission examined the extent to which different definitions of problem gambling were prone to false positives and negatives using a variety of methods. A threshold on the SOGS is too low if there is a low prevalence rate of harmful impacts in the identified group of ‘problem’ gamblers and a high prevalence of beneficial impacts. In contrast, a threshold on the SOGS is too high if the identified group of problem gamblers account for a small share of people experiencing adverse impacts.

How big are false positives and negatives for SOGS 10+ and SOGS 5+ measures?

The Commission’s *National Gambling Survey* not only used SOGS questions (in a 12 month timeframe) but, as in some past Australian studies, it also included:

- a scale on the SOGS questions about the frequency of any behaviour;
- questions about the possible harmful effects of gambling (such as relationship breakdown and illegal acts) on both a lifetime and a last year basis;

¹⁵ Most of the Australian studies have judged the 10 or more SOGS measure as the most reliable and appropriate measure of problem gambling prevalence — a judgement which had its genesis in the excessively high apparent prevalence rate suggested by using the traditional SOGS 5+ rating in the first major Australian prevalence study (where the apparent rate of problem gambling — at 6.6 per cent — lacked credibility). However, none of the subsequent surveys have revealed problem gambling rates at anything like that suggested by the first survey.

¹⁶ This is also consistent with the largely behaviourist view of problem gambling adopted in Australia and in contrast with the view that it is a progressive disease (Ferris 1995, p. 1).

- self-perception questions about the extent of any problem; and
- questions about the need for and attempts to obtain help for gambling problems.

This information allowed the Commission to assess whether differing scores on the SOGS were highly associated with self-perceptions of harms associated with gambling — providing the ability to examine what SOGS thresholds might be useful in our analysis. There seems little doubt that the group identified by a SOGS score of 10 or more represent people with severe problems (tables 6.1 and 6.2):

Table 6.1 Responses to separate SOGS items
For definitions of problem gambler and harm incidence^a

<i>SOGS item — what gamblers said</i>	<i>All gamblers</i>	<i>SOGS 0-2</i>	<i>SOGS 3-4</i>	<i>SOGS 5-9</i>	<i>SOGS 5+</i>	<i>SOGS 10+</i>	<i>In couns- -elling</i>	<i>HARM</i>
	%	%	%	%	%	%	%	%
Chasing losses often or always	3.5	1.0	3.6	20.0	27.5	66.7	64.2	27.3
Claimed to be winning when lost	10.0	4.0	21.6	47.4	52.7	80.6	58.1	32.7
Problem with gambling	8.9	2.5	12.0	63.6	67.6	88.7	96.5	62.6
Gambled more than intended	35.1	20.7	92.6	98.3	98.5	100.0	99.5	83.4
People criticised gambling	10.8	2.5	31.4	63.3	64.5	70.8	84.9	49.6
Felt guilty about what happens when gambling	19.2	5.8	64.3	87.7	89.7	100.0	99.0	88.8
Like to stop but can't	9.4	1.0	24.9	65.1	70.3	97.0	97.0	64.7
Hidden signs of gambling	5.8	0.6	17.5	33.2	39.7	73.9	76.5	37.6
Money arguments over gambling	7.7	2.2	22.8	35.4	46.2	96.7	73.6	50.4
Borrowed without paying back	2.6	0.8	3.9	14.1	18.7	42.9	53.3	13.2
Lost time from work or study	2.8	1.2	2.4	13.2	18.9	50.3	49.7	14.9
Borrowed from household money	5.8	0.6	18.0	32.5	41.0	87.0	85.7	34.5
Borrowed from partner	5.8	2.1	11.3	29.2	34.9	64.2	57.7	26.2
Borrowed from other relatives	2.2	0.4	3.4	13.1	18.7	47.8	53.6	12.6
Obtained cash advances using your credit card	4.9	1.1	10.7	28.8	34.6	64.5	63.6	29.3
Borrowed from banks etc	1.0	0.0	0.2	6.1	11.7	40.9	42.2	12.6
Borrowed from loan sharks	0.5	0.0	0.0	3.7	5.8	16.7	8.4	4.9
Cashed in shares	0.6	0.0	0.4	6.9	6.3	3.2	16.9	7.2
Sold property	1.0	0.0	0.9	5.2	11.0	40.8	36.7	10.3
Passed a bad cheque	0.4	0.0	0.4	2.2	4.1	14.2	21.2	2.9

^a The in-counselling group are people who sought counselling from specialist problem gambling counselling agencies (based on the *PC Survey of Clients of Counselling Agencies*). The HARM group are people who said they had experienced at least one clearly problematic behaviour in the last 12 months (box 6.7). The data here and for other SOGS items are different from the Commission's draft report due to a coding error and some minor amendments to the weighting procedure.

Source: PC National Gambling Survey and PC Survey of Clients of Counselling Agencies.

- All of them feel guilty about their gambling.
- Most lie about or conceal their gambling.

-
- The overwhelming majority have felt they would like to stop gambling, but did not think they could.
 - Nearly all (88 per cent) perceive themselves as having a gambling problem.
 - A significant number suffer serious personal consequences, with the bulk suffering severe financial difficulties, over 80 per cent depressed as a result of their gambling, and more than one in five seriously contemplating suicide.
 - Around 70 per cent are chasing losses often or always.

The SOGS 10+ group have a very similar pattern of SOGS responses to those gamblers who seek help from specialist problem gambling agencies — evidence that the SOGS 10+ threshold provides a measure of people suffering severe problems requiring assistance.¹⁷ They also have similar responses for clearly adverse harms (table 6.2) except that the group seeking help have a higher prevalence of job loss, suicide ideation and crime. The false positive rate among SOGS 10+ is probably very small.

The SOGS 5+ group has a lower prevalence of self-assessed harmful impacts than the SOGS 10+ group, but nearly all of such gamblers suggest that they spend more than they intended, around 90 per cent say they feel guilty about their gambling, about 70 per cent feel they have a problem and *70 per cent indicate that they have control problems*. But there is evidence of false positives among the SOGS 5+ group:

- there is a sub-group that report that they derive considerable pleasure from gambling (table 6.3).¹⁸ However, they account for only 5.7 per cent of the SOGS 5+ group, and so make a negligible difference to any calculated prevalence rate;
- regular gamblers were asked whether they had a problem and to rate that problem from 1 (not a problem) to 10 (a severe problem). Around 15 per cent of people in the SOGS 5+ group denied having any problem (table 6.4),¹⁹ whereas all people in the SOGS 10+ group said that they had a problem.

¹⁷ A statistical test (a chi-square test) was used to see if the overall set of answers provided by the counselling group and the SOGS 10+ group could be regarded as being drawn from the same population. The result was a chi square of 25.9 with 20 degrees of freedom. The null hypothesis that they are drawn from the same population could not be rejected at the 5 per cent level. At the level of individual answers, however, there was a statistically significant difference between acceptance of a problem by those in the counselling group and the SOGS 10+ population group. However, there was also an indication that money arguments over gambling were *more* frequent among the SOGS 10+ population group than the counselling group.

¹⁸ Examination of this sub-group suggests that they experience relatively few harms from gambling, scoring negative on almost all items in table 6.2.

¹⁹ Although some of these may be concealing a problem (see table 6.9 for evidence of denial among problem gamblers).

Table 6.2 Significant adverse impacts experienced^a

By definition of problem gambling

Impact	<i>All gamblers</i>		<i>SOGS5+</i>		<i>SOGS 10+</i>		<i>HARM</i>		<i>In coun- selling</i>
	Ever	Last year	Ever	Last year	Ever	Last year	Ever	Last year	Ever
	%	%	%	%	%	%	%	%	%
Suffered from depression	8.2	5.8	58.7	53.2	82.3	82.3	59.6	52.9	95.7
Job adversely affected	4.7	2.7	31.6	25.7	51.6	48.3	30.6	28.0	55.1
Changed job due to gambling	0.8	0.2	6.0	1.9	15.2	12.0	4.6	2.2	18.3
Lost job	0.3	0.0	0.5	0.0	0.0	0.0	0.6	0.0	18.6
Bankruptcy	0.1	0.1	1.4	1.0	8.8	6.1	1.6	1.1	8.4
Obtaining money illegally	1.1	0.1	7.1	1.2	13.2	3.7	8.0	1.3	42.3
In trouble with police	0.7	0.2	4.1	2.1	13.8	7.6	4.7	2.4	18.3
In court on charges	0.4	0.0	3.1	0.2	13.4	1.4	3.6	0.3	15.8
Seriously thought about suicide	1.0	0.4	9.3	4.5	27.4	19.6	10.5	5.1	57.8
Spending more than could afford often or always	..	3.0	..	30.2	..	68.9	..	31.4	..
Led to relationship breakup	1.7	1.1	11.4	4.7	31.6	15.8	23.0	15.4	
Led to split-up of partners ^b	1.1	..	9.2	..	31.6	..	16.3	..	26.0
Not enough time to look after family's interests	2.1	1.3	19.7	13.7	51.3	48.6	17.5	13.7	..

^a The SOGS 5+ and 10+ results are from the *National Gambling Survey*, as are the results for the HARM group (box 6.7). SOGS 5+ includes all people who score 5 or more (including those who score 10 or more). The counselling group results relate to people seeking help from specialist problem gambling agencies. ^b The question posed was whether a relationship breakdown had led to divorce or separation. In this context, the term separation refers both to the technical state of separation through divorce proceedings, but also to the physical parting of a couple, even if not married.

Source: PC *National Gambling Survey* and PC *Survey of Clients of Counselling Agencies*.

Table 6.3 Do problem gamblers enjoy gambling?

	<i>Made life a lot more enjoyable</i>	<i>Made life a little more enjoyable</i>	<i>Made no difference</i>	<i>Made life a little less enjoyable</i>	<i>Made life a lot less enjoyable</i>	<i>Can't say</i>
	%	%	%	%	%	%
SOGS 5+ ^a	5.7	24.1	20.1	15.9	34.2	0.1
NON-SOGS 5+	3.6	23.7	68.9	2.2	1.1	0.6
SOGS 10+	5.8	3.0	13.1	17.2	60.6	0.3
NON-SOGS 10+	3.6	23.8	67.8	2.5	1.7	0.6
HARM	3.1	18.3	24.8	15.8	38.0	0.1
NON-HARM	8.8	34.8	51.8	2.8	1.6	0.4
All gamblers	3.6	23.7	67.6	2.5	2.0	0.6

^a SOGS 5+ includes all people who score 5 or more (including those who score 10 or more).

Source: PC *National Gambling Survey*.

Table 6.4 Self rating of degree of severity by SOGS score

<i>Rating of degree of problem</i>	<i>SOGS 3-4</i>	<i>SOGS 5-9</i>	<i>SOGS 5+</i>	<i>SOGS 10+</i>
	%	%	%	
1 (no problem)	48.3	14.9	12.5	0.0
2 to 3 (minor problems)	35.2	27.7	23.8	3.7
4 to 6 (moderate problems)	16.5	36.4	33.2	16.2
7 to 10 (most severe problems)	0.0	19.0	24.7	54.8
All	100.0	100.0	100.0	100.0

Source: PC National Gambling Survey.

Another way of looking at the degree to which these varying measures of problem gambling genuinely pick up the harms associated with gambling is to compare them with the group of people who say they have been harmed in some specific ways by their gambling.

The Commission blended questions on harmful impacts into an indicator of harmful gambling (box 6.7) — the approach being similar to that used by the Nova Scotia study of problem gambling (Focal Research, 1998). The measure omits most items counted in the SOGS — such as borrowing from friends, being criticised by others, and chasing losses — because while these may indicate problematic behaviour, they need not result in harm to the gambler.

It should be emphasised that this derived measure of harm is indicative only. It was intended to be a relatively stringent test of harm, so that people experiencing less pronounced harms will not necessarily score positively on these criteria. In that sense, a zero score on the HARM criteria should not be regarded as evidence that a person is suffering no harm from their gambling. For example, were someone to often have money arguments about gambling, often feel guilty, often lose time from work they would score zero on the HARM scale.

While the items on the HARM scale have good face validity and the correlation with SOGS suggests concurrent validity, the survey did not include any validity checks to assess whether people saying they were experiencing harms from gambling really did so, or that those denying them had no problems. Independent interviewing of respondents and corroboration by significant others would be needed to check the sensitivity and specificity of these HARM criteria as a proper test.²⁰ However, the Commission primarily sees the HARM scale as an *indicator* of harms, rather than as a prevalence testing instrument of the same ilk as the SOGS or the Fisher DSM-IV. However, it may be useful to incorporate items, such as those

²⁰ A point made by Mark Dickerson, one of the Australian gambling experts who helped advise the Commission.

used in the HARM indicator, in future tests of the impact and prevalence of gambling problems (section 6.8), and subject these to full validity testing.

Box 6.7 Elements of harmful gambling — the HARM indicator

A person has experienced harm from gambling if they meet *any* of the following conditions for the last year. They:

1. found that gambling has made life a lot less enjoyable and they *always* feel they cannot control gambling, although they want to;
2. *always* have money arguments about gambling;
3. *always* borrow to gamble while not paying borrowings back;
4. *always* lose time from work or study due to gambling;
5. *always* feel guilty about gambling;
6. borrow from loan sharks to gamble *sometimes* to *always*;
7. fraudulently write cheques to gamble *sometimes* to *always*;
8. believe they have a current problem *and* they rate their problem from 5 or more on a 10 point Likert scale;
9. *always* spend more than they can afford;
10. have *often* or *always* suffered from depression due to gambling;
11. have *often* or *always* experienced adverse effects on their job due to gambling;
12. have changed jobs in the last year due to gambling;
13. have been sacked in the last year due to gambling;
14. have *often* or *always* not had enough time to look after their family's interests due to gambling;
15. have become bankrupt due to gambling;
16. have experienced a relationship breakdown due to gambling;
17. have obtained money illegally to gamble;
18. have been in trouble with police over gambling;
19. have appeared in court on a gambling-related matter;
20. have seriously thought about suicide because of gambling;
21. have wanted help for gambling problems; or
22. have tried to get help for gambling problems in the last year.

A person who records a single answer to any of the above is deemed to have experienced harmful impacts from gambling, simply because each individual impact is serious. The *PC National Gambling Survey* suggested that around 1.8 per cent of the adult population score one or more using the above measures (which is somewhat less than the number of people who are measured as problem gamblers using the SOGS 5+ cutoff). About 54 per cent of this HARM group score 2 or more.

Source: *PC National Gambling Survey*.

People who were categorised as experiencing harmful impacts (using the HARM indicator) scored on the SOGS test in almost an identical way to that of people categorised as problem gamblers using the SOGS 5+ threshold (table 6.1). This provides one basis for seeing SOGS 5+ as a reasonable measure of problem gambling.

On the other hand, it is certainly not the case that the people identified by the two measures are always the same (table 6.5). The harm indicator, and SOGS 5+ and 10+ are separate, but overlapping concepts.

There are estimated to be 293 000 problem gamblers in Australia using the SOGS 5+ threshold, but only 172 000 (or about 60 per cent of them) score 1 or more on the HARM scale. This reflects the relatively stringent nature of the HARM scale, and should not be taken to imply that these people are not suffering any harms from their gambling. In comparison, of the 47 000 problem gamblers based on the SOGS 10+ score, nearly 45 000, or about 96 per cent, report a HARM impact.

There are 83 000 people who report at least one HARM impact who do not score 5 or more on the SOGS and 209 000 people who report at least one HARM impact who do not score 10 or more on the SOGS.

Table 6.5 Problem gambling and HARM

	<i>People</i>			<i>% of adults</i>		
	Not SOGS 5+	SOGS 5+	Total	Not SOGS 5+	SOGS 5+	Total
No HARM	13 750 271	121 224	13 871 495	97.34	0.86	98.20
HARM	83 265	171 513	254 778	0.59	1.21	1.80
Total	13 833 536	292 737	14 126 273	97.93	2.07	100.00
	Not SOGS 10+	SOGS 10+	Total	Not SOGS 10+	SOGS 10+	Total
No HARM	13 869 558	1 937	13 871 495	98.18	0.01	98.20
HARM	209 922	44 856	254 778	1.49	0.32	1.80
Total	14 079 480	46 793	14 126 273	99.67	0.33	100.00

Source: PC National Gambling Survey.

It is apparent that the SOGS 10+ group fails to identify the bulk of people who are experiencing significant problems with their gambling, whereas this false negative problem is much less apparent for the SOGS 5+ group. To the extent that the HARM group adequately represents people experiencing significant problems, the prevalence rate given by the SOGS 5+ measure is out by about 15 per cent (because false positives are partly offset by false negatives). In contrast, the SOGS 10+ prevalence measure is less than one fifth of the rate suggested by the HARM measure.

The SOGS 10+ measure picks up many of the extreme outcomes from gambling, such as bankruptcy and being in court on charges connected to gambling problems (table 6.6).

Table 6.6 Are problems exclusive to problem gamblers?^a

<i>SOGS item</i>	<i>SOGS 5+</i>	<i>SOGS 10+</i>	<i>Reported harmful impacts from gambling</i>	<i>SOGS 5+</i>	<i>SOGS 10+</i>
SOGS 1	64.7	25.1	Suffered from depression	74.9	18.7
SOGS 2	43.5	10.7	Job adversely affected	79.0	24.0
SOGS 3	62.8	13.3	Changed job due to gambling	100.0	100.0
SOGS 4	23.0	3.7	Bankruptcy	100.0	100.0
SOGS 5	48.9	8.6	Obtaining money illegally	100.0	50.9
SOGS 6	38.2	6.9	In trouble with police	100.0	56.6
SOGS 7	61.2	13.7	In court on charges	100.0	100.0
SOGS 8	56.9	16.9	Seriously thought about suicide	100.0	71.0
SOGS 9	46.0	17.0	Spending more than could afford ^b	92.2	34.0
SOGS 10	59.0	21.6	Led to relationship breakup	35.2	18.9
SOGS 11	56.1	23.0			
SOGS 12	57.6	19.2			
SOGS 13	48.6	14.5			
SOGS 14	68.7	28.3			
SOGS 15	57.8	17.4			
SOGS 16	97.7	54.9			
SOGS 17	100.0	46.2			
SOGS 18	92.3	7.6			
SOGS 19	89.9	54.3			
SOGS 20	88.1	49.1			

^a The 2nd and 3rd columns are the percentage of SOGS 5+ and 10+ gamblers respectively, who scored positively on *given* SOGS items. The 5th and 6th columns are the percentage of SOGS 5+ and 10+ gamblers respectively, who reported suffering the listed harmful impacts from gambling.

^b Often or always.

Source: PC National Gambling Survey.

However, the SOGS 10+ measure excludes 81.3 per cent of gambling related depression (ie 100 – 18.7), 49.1 per cent of cases of obtaining money illegally, and 81.1 per cent of gambling related relationship breakdown. In contrast, the SOGS 5+ measure tends to capture most of these adverse outcomes.²¹

Nor is it the case that the SOGS 10+ category neatly equates with the ‘need help’ group identified in section 6.4. Not all people who seek help from specialist

²¹ Marshall, Balfour and Kenner (sub. 116) have found similar results for an institutional population. They explored the prevalence of gambling related crime among 101 non-Aboriginal inmates of the Yatala Labour Prison in South Australia in 1997. They found that no cases of such crime were recorded for inmates scoring less than 5 on the SOGS, but that using a threshold of 10+ was overly conservative, and failed to account for a significant amount of gambling related crime amongst inmates.

counselling agencies have SOGS 10+ scores (table 6.7) — with around one quarter to one fifth having SOGS scores between 5 and 9.²²

Table 6.7 SOGS scores among gamblers in counselling

	Scoring below 10	10+
	%	%
Dickerson et al. 1996a ^a	22	78
<i>PC Survey of Clients of Counselling Agencies</i> ^b	23.4	76.6

^a Based on results from 82 clients attending a specialist clinic (at the Department of Psychiatry, UNSW, directed by Associate Professor Alex Blaszczynski) diagnosed as pathological gamblers according to the DSM-IV.

^b Based on 402 problem gambling clients of specialist problem gambling counselling services around Australia. 2.5 per cent of clients had a score of 4 or less, and 20.9 per cent between 5 and 9.

Clearly some people needed assistance despite their below 10 score. Others in the general population with scores of less than 10 may not have sought help from specialist gambling counselling agencies, but might have obtained it elsewhere or needed it (we would obviously not get to observe this group as part of a ‘treatment’ group).

The *National Gambling Survey* provided some evidence of this. Though most (63 per cent) people who scored 10 or more on the SOGS wanted help, these represented a modest share (27 per cent) of the overall group of people who wanted help (table 6.8). Similar results were apparent for gamblers who tried to get help for their problems.²³ The results suggest that there is a significant group of people with SOGS scores below 10 (but not below 5) who want and obtain help of some kind.

On the other hand, the *National Gambling Survey* suggested that a third of people with SOGS scores of 10 or more did not want help (and a further 4 per cent did not

²² A similar exercise was conducted using the DSM-IV criteria on 1102 and 1429 Victorian BreakEven clients respectively in 1995-96 and 1996-97. It was found that 18.6 and 27.4 per cent respectively of these ‘treatment’ groups scored on 4 or less items (Jackson, Thomason, Thomas, Crisp, Smith, Holt, Ho and Borrell 1997, p. 30). This is below the threshold of 5 or more required for a diagnosis of ‘pathological’ gambling (Dickerson, McMillen, Hallebone, Volberg and Woolley 1997, p. 13). In the analysis of SOGS scores of 737 clients who sought help for gambling problems in New Zealand, 1.1 per cent scored below 5, 5.2 per cent scored 5, 27.1 per cent scored 6 to 10 and 66.6% scored 11 plus (Committee on Problem Gambling Management New Zealand 1997, p. 13). Dickerson, Baxter et al. (1995, p. 100) found that 23 per cent of those who sought help from BreakEven services in Queensland fell below the ‘pathological’ gambling threshold of the DSM III-R criteria (the precursor to the DSM-IV).

²³ Noting that many people with problems obtained help from informal sources or from non-specialist agencies, so that these instances would not be captured by statistics collected from specialist gambling counselling agencies.

know). However, while they may not have declared that they wanted help, this does not mean that they are necessarily false positives. All of these gamblers acknowledged that they had a problem (and 99.3 per cent of them rated their problem as more than 5 on a Likert scale of severity from 1 to 10).

Overall, the evidence suggests that the SOGS 10+ threshold will tend to underestimate the prevalence of severe problem gambling (level 3 gambling).

Table 6.8 Gamblers who wanted and obtained help

<i>SOGS category</i>	<i>Share which wanted help</i>	<i>Share of people who wanted help accounted for by this category</i>	<i>Share which tried to get help</i>	<i>Share of people who tried to get help accounted for by this category</i>
	(%)	(%)	(%)	(%)
SOGS 0-2	0.1	2.6	0	0
SOGS 3-4	0	0	0	0
SOGS 5-9	32.3	70.9	12.2	66.4
SOGS 10+	62.7 ^a	26.5	32.1	33.6

^a However, note that a further 4 percentage points of this group did not know if they needed help.

Source: PC National Gambling Survey.

Adapting the SOGS to estimate the numbers of severe (level 3) problem gamblers

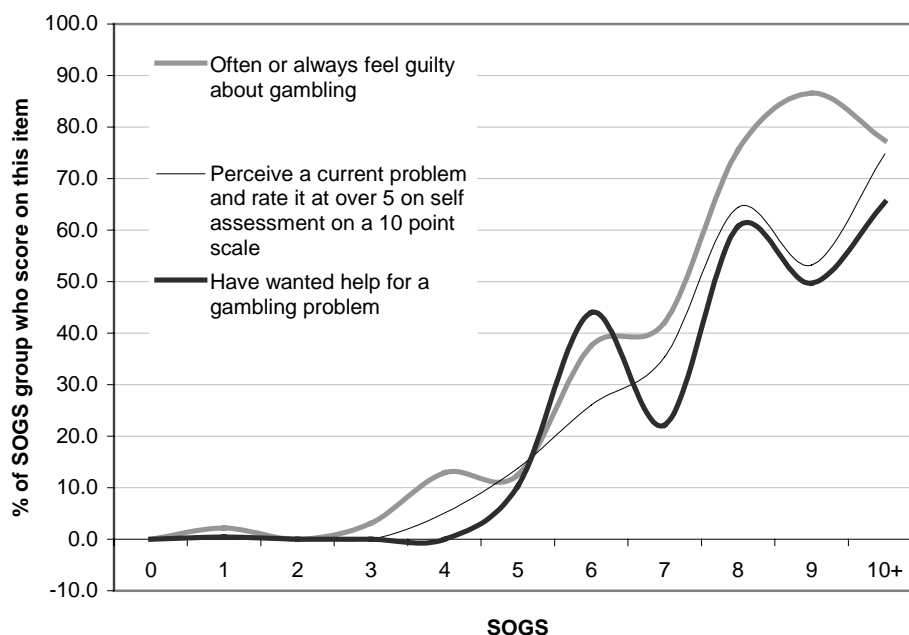
Dickerson et al. (1996a, p. 52) and Dickerson et al. (1997, p. 39) suggested that the prevalence of people with severe gambling problems (the level 3 group) be estimated by giving different weights for people with different SOGS scores:

- 20 per cent of those with scores of 5 to 6 are rated as having severe problems;
- 50 per cent of those with scores of 7 to 9; and
- 100 per cent of those with scores of 10 or more.

The Commission examined how harms vary as the SOGS score rises, and found evidence that the above approach would reasonably ameliorate the high false negative problem associated with the SOGS 10+ cutoff (figure 6.3).

The Commission has, therefore, used Dickerson's weighting scheme above to produce one estimate of the prevalence of severe (or level 3) gambling problems. However, in doing so, we emphasise that the way in which population surveys are conducted is likely to somewhat underestimate people with severe gambling problems — an issue to which we turn next.

Figure 6.3 How some key problems vary over SOGS scores^a



^a Each of the SOGS categories represents those people who scored a particular level of the SOGS. Accordingly, SOGS 3 are those who scored exactly 3 on the SOGS. The data have been smoothed.

Data source: PC National Gambling Survey.

Do population surveys miss out the most severe cases?

Population surveys of problem gambling will tend to underestimate the number of people with extreme problems requiring counselling help:²⁴

- It can be surmised that people who are heavy gamblers — a group which will over-represent problem players — are less likely to be at home to get into the sampled group in the first place.
- Where the survey is telephone-based, as was that used by the Commission (like most other similar surveys), financially affected gamblers may have had the phone cut off, again excluding them from the survey. Telephone-based surveys have other advantages and disadvantages, which are discussed in appendix F.
- Others, such as the homeless or institutionalised (eg jail inmates) may also have a greater likelihood of being problem gamblers, but are outside the sample frame.

²⁴ Dickerson, Baron, Hong and Cottrell (1996), Volberg (1996a), Lesieur (1994 — cited in Delfabbro 1998, pp. 182–3).

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- It also appears likely that someone with a severe gambling problem may be more inclined to refuse to participate in any survey. Around a quarter of problem gamblers receiving help from specialist agencies said that they would not have participated in such a survey prior to seeking help (table 6.9).
 - People in certain cultural groups may be more uncomfortable about openly divulging personal issues, like problem gambling;
 - Finally, and most particularly, people may provide dishonest or distorted answers to questions, especially if they feel that they are engaging in stigmatised behaviour. The Commission has been told by problem gamblers that, prior to seeking help from a counsellor, they would not have honestly disclosed their problem. Of those problem gamblers who would participate in a survey prior to seeking help, only 38 per cent believed they would answer honestly. Some 45 per cent said that they would hide their problem to some degree, and 17 per cent did not know what they would have done (table 6.9). Only 0.3 per cent said they would have exaggerated their problems. Yet the original validation exercise for the SOGS did not take into account the likely strategic behaviour by problem gamblers when answering questionnaires of this type (because it took a group of self-confessed problem gamblers in a clinical setting, rather than problem gamblers outside this setting).

Given these findings, it is possible that many people who actually experience severe problems with gambling may fail to disclose this in surveys intended to measure prevalence rates. As noted by the Australian Institute for Gambling Research:

... given the inherent limitations of survey design, I agree with the Commission that these results [the prevalence estimates for problem gambling] are likely to be underestimates (AIGR sub. D216, p. 8).

The Commission estimates suggest that if the true prevalence rate of people with severe problems was around 0.7 per cent, it is easily possible that surveys would suggest a prevalence rate of such severe problems at around 0.3 per cent.²⁵ The

²⁵ The *measured* prevalence rate (p) from a survey is equal to:

$$p = \frac{(1 - \alpha_1)(1 - \alpha_2)(1 - \alpha_3)\alpha_4\gamma}{(1 - \alpha_1)(1 - \alpha_2)(1 - \alpha_3)\alpha_4\gamma + (1 - \beta_1)(1 - \beta_2)(1 - \beta_3)(1 - \gamma)}$$

where α_1 , α_2 and α_3 is the survey response rate by severe problem gamblers, the share of problem gamblers with no phone at home and the share of problem gamblers who are not at home when the telephone survey is conducted. β_1 , β_2 and β_3 are the associated parameters for people who are not severe problem gamblers. α_4 is the share of severe problem gambling survey respondents who honestly reveal their problems. γ is the true population problem gambling rate. For $\alpha_1=0.25$, $\alpha_2=0.05$, $\alpha_3=0.15$, $\beta_1=0.25$, $\beta_2=0.025$, $\beta_3=0.10$, $\gamma=0.007$ and $\alpha_4=0.46$ (the latter assuming that half the people who don't know what they would have said in table 6.9 actually honestly reveal

implication is that the Commission's *National Gambling Survey* could have seriously understated the prevalence of the most severe (SOGS 10+) cases.

Table 6.9 Do genuine problem gamblers reveal they have a problem?^a

<i>Answer</i>	<i>Share of respondents who said that they would have ...</i>
	(%)
Answered honestly	28.9
Refused to answer the survey	23.7
Somewhat concealed any problems	13.7
Mostly concealed any problems	9.7
Completely concealed any problems	9.2
Exaggerated any problems	0.2
Told them you did not know	1.7
Don't know what they would have said then	12.7
Total	100

^a Based on responses of 401 clients of counselling agencies. The survey asked problem gamblers seeking help from specialist gambling agencies whether they would have participated in a survey prior to seeking help, and whether they would have revealed the true nature of their problems.

Source: PC Survey of Clients of Counselling Agencies.

Some counselling groups suggested that the Commission's prevalence figures could have understated the prevalence of problem gambling by up to a threefold factor (sub. D252, p. 1), although the Commission considers that to be highly unlikely.

Others were more concerned that the Commission had underestimated the level of problems by marginalising the modest problems that recreational gamblers may experience:

[The report] discusses at length the difficulties in determining threshold test scores for identifying problem gamblers, but does not question the idea that there is a threshold below which gambling is not problematic... There is no acknowledgment that many recreational gamblers experience occasional and/or minor problems that are nevertheless substantial in aggregate... For gambling, similarly, the focus of prevention needs to be on the broader population, not just heavy-gambling individuals (Raven, sub. D272, pp. 1-3).

The latter approach, of course, goes beyond the issue of counting 'cases' of problem gambling. This 'sociological' approach attempts to understand more broadly any adverse social effects of gambling and to fashion, where cost effective and appropriate, ways of ameliorating these. The Commission has attempted to look at some of these broader issues in chapters 9, 10 and 16.

their problem) then $p=0.003$. These figures, while conjectural, are consistent with the pattern of telephone survey responses (Steel et al 1996).

Summary and policy implications

As we emphasised in section 6.4, the SOGS can be legitimately used to look at the prevalence of people whose problems do not require individual intervention, but which are of concern for public health reasons. Walker (1998b, p. 44), for example, notes:

Gambling causes far more misery in society than is accounted for by the lot of the pathological gambler.

Similarly, Shaffer et al. (1997, p. iii) observe:

... scientists and public policy makers have paid insufficient attention to level 2 gamblers (ie those with sub-clinical levels of gambling disorders). While extremely diverse, level 2 gamblers experience a wide set of problems from their gambling.

In this instance, it is clearly appropriate to use lower SOGS scores to determine the number of Australians whose gambling behaviour entails significant risks (level 2 gambling problems using Shaffer et al.'s terminology), *so long as the purpose of this prevalence rate is made clear*, namely:

- *not* to estimate resources for direct help services;
- *nor* to see this group in a stereotyped way as 'addicts' hooked on gambling. The best analogy may be problem drinking which is a concept which goes far beyond alcoholism.

In this context, it is important to note that different measures of false positives or false negatives will occur depending on what definition of problem gambling is applied and what standard for confirming the diagnosis of the SOGS is used. Thus, if a researcher is using the SOGS to try to identify at-risk gamblers (level 2 gamblers) then someone they accept as a true positive may be rejected as a false positive by someone using the SOGS to identify people needing individual intervention to help them with their gambling problems.

- A SOGS score of 10 or more will significantly underestimate the number of people who are experiencing moderate problems with their gambling (a high false negative rate for level 2 problem gambling) and provide a somewhat conservative estimate of the number of people wanting and needing help services (a medium false negative rate for level 3 problem gambling). On the other hand, it will probably not count anyone who does not have a real problem (a low false positive problem).
- In contrast, a SOGS score of 5 or more will substantially overestimate the prevalence of gamblers needing help services (a very high false positive rate for level 3 gamblers, but a much lower false positive problem for level 2 risks), but

pick up most people who suffer significant adverse impacts from gambling (a low false negative problem).

- However, both thresholds of the test will inevitably fail to measure the prevalence of those problem gamblers, who, for various reasons, are unavailable to be surveyed or fail to answer questions honestly.

Unless researchers are very clear about how they interpret a positive test score, there is scope for a confused debate about which threshold on the SOGS has the best test properties and the magnitude of prevalence rates of problem gambling — a phenomenon which is not helped by large differences in the terminology to describe the different levels of problems people face (box 6.8). It is tempting for someone who wishes to attract the attention of legislators and obtain resources for helping people with gambling problems to set a low SOGS score for a prevalence measure, without disclosing that this would only be appropriate for measuring an at-risk group, instead of a ‘need treatment’ group, a point noted by TAB Ltd (sub. 161, p. 3) and ACIL:

Though they may be well-intentioned, it is clear that many parties have a strong career interest in exaggerating the problem gambling phenomenon and in seeing that the reported incidence is never below some threshold (sub. 155, p. 71).

But, similarly, industry groups who wish to minimise the perception of apparent harms created by gambling, will tend to set the bar high to achieve this objective. Some of the criticisms by industry of the draft report’s findings in relation to the prevalence of problem gambling (for example, the AHA NSW sub. 208, p. 28) reflect their view that someone must have severe problems to be termed a problem gambler.

There is a clear need for any test of gambling problems to set thresholds which have known risks of harms, and to explain the *purposes* of each of the thresholds that may be selected. The Commission considers it useful to employ a number of different benchmarks for ‘problem’ gambling — which suit the different possible purposes of such a test — in the same way that different benchmarks are now used to assess problematic alcohol use or degrees of weight problems.

Box 6.8 **Confusions in terminology**

Arising out of the different frameworks that are applied to problem gambling are a number of different terms for the problem, which can make international comparison difficult and confusing.

- Gamblers Anonymous tends to use the term '*compulsive*' gamblers, but this term is not generally used by counsellors, psychiatrists or psychologists helping gamblers experiencing problems.
- Outside Australia, people scoring 5 or more on the South Oaks Gambling Screen (SOGS) or the DSM-IV test are rated as '*pathological*' gamblers, a term which is avoided in Australia. People scoring 3 or 4 are described as '*problem*' gamblers. Sometimes people who score 3 or more are collectively called '*problem*' gamblers.²⁶
- In Australia, people who are getting help from counselling agencies for their gambling are labelled as '*problem*' gamblers. Those scoring 10 or more on the SOGS (and sometimes those scoring 5 or more) are also labelled as '*problem*' gamblers. Those scoring 5 to 9 on the SOGS are often described as '*at-risk*'.

In the chapters that follow, some results from international studies are presented for problem gamblers, others for problem and pathological gamblers, and others still for pathological gamblers. We emphasise that each of these is different and the results will vary accordingly.

In the remainder of this report we use various thresholds and approaches, depending on the purpose of the analysis:

- In looking at the costs of problem gambling we usually avoid the SOGS altogether, and rather, look at the prevalence of particular harmful impacts on people.
- However, some information on certain problems was only available from the *Survey of Clients of Counselling Agencies*. Given that this help-seeking group appeared to generally match the characteristics of the SOGS 10+ group in the *National Gambling Survey*, the Commission obtained national estimates of the prevalence of such problems by using the SOGS 10+ threshold in the national survey. To use the SOGS 5+ threshold would grossly exaggerate the extent of such problems.
- In adjusting the consumer surplus for problem gambling, the Commission took account of gamblers scoring 5 or more on the SOGS (to capture people with at least level 2 problems), since to do otherwise ignores many people who have

²⁶ The term 'disordered' gambling is also now being employed in the US, for example, by the American Gaming Association (www.americangaming.org).

significant problems with their gambling (including impaired control). However, the Commission treated severe problem gamblers in this group differently from moderate problem gamblers.

- Similarly, in examining consumer protection, the Commission used the broader definition of problem gambling (SOGS 5+) in keeping with the view that consumer protection and public health policy aims to lower risks of problems for groups other than those who are most seriously afflicted (Shaffer et al. 1997; Ferris, Wynne and Single 1999, pp. 34–35). Indeed, given that risky behaviours and harms extend below the SOGS 5+ level (table 6.4) there is a case for regarding the population of gamblers with potential consumer problems from gambling as far bigger than that encapsulated by the problem gambling prevalence rate.

6.7 Criticisms of the Commission's use of the SOGS

ACIL (sub. D233, p. 44ff) and others criticised the Commission's use of the SOGS on a number of grounds.

ACIL re-iterated the point made by Gerstein et al. (1999, p. 17) that the SOGS is based on the 'outdated' DSM-III rather than the DSM-IV. The DSM-III was used as the 'gold standard' for validity checking of the SOGS. However, the SOGS and the DSM-III are different:

- the SOGS has categories that have no obvious parallel in the DSM-III; and
- the SOGS is a *test* and the DSM-III (like the DSM-IV that followed it) is a set of diagnostic *criteria* used by clinicians.

The DSM-IV represents an evolutionary, rather than a revolutionary change in the DSM-III. One way in which the DSM-IV was improved over the DSM-III was to *use* some of the questions from the SOGS. In discussing the draft report with Rachel Volberg (an eminent US researcher), she indicated that the use of the SOGS-R and the Fisher DSM-IV screen in six US jurisdictions and in the Swedish and New Zealand national studies, suggest that these two screens measure similar (though not identical) constructs.

For example, in the Oregon prevalence study (Volberg 1997, p. 37), it was found that the prevalence rate of people scoring on DSM-IV (3+) and SOGS (3+) was identical, with similar prevalence rates for what was termed severe problem gambling. In the recent Swedish study, however, the SOGS suggested a higher prevalence rate than the DSM-IV (Rönnerberg et al. 1999, p. 94), although which measure is best at identifying problems remains unclear.

ACIL also argued that there was little evidence about the extent to which the SOGS measured problem gambling in a way that matched the broad (harm-based) definition of problem gambling used by the Victorian Department of Human Services (DHS), and increasingly adopted by others in Australia. The Commission made some assessment of the people experiencing harm with the development of a set of questions probing the adverse impacts of gambling (section 6.6) and found that the SOGS and our defined measure of harm were overlapping but not entirely congruent measures. Even so, there was strong evidence that nearly all people scoring 5 or more on the SOGS suffered some harm, even if it was not to the significant degree suggested by the stringent HARM criteria. On the other hand, there were a range of harms that were not examined (for example to partners and children), and future examination of problem gambling should consider the broader harmful impacts and how these may vary in different cultural and social settings. New test instruments currently being developed are trying to better measure the harmful impacts (section 6.8).

ACIL also argue against the SOGS on the grounds that it is a test derived using an inappropriate US ‘mental disease’ framework. While the SOGS was developed using a set of diagnostic criteria which conceptualised problem gambling as a mental disease, the actual test questions posed in the SOGS tend to emphasise behavioural responses by people to gambling (lying, chasing losses, borrowing money) rather than mental states. The more recent DSM-IV criteria and the tests based upon them, such as Fisher’s DSM-IV and Gerstein et al.’s (1999) NODS, which ACIL cite approvingly, provide a greater weight to psychological aspects of gambling (such as preoccupation, escape, and tolerance) than the SOGS.

It was also argued that because the SOGS was not implemented for the full sample of respondents in the Commission’s survey, this amounted to leaving out the control group and constituted ‘a clear violation of the scientific method’ (sub. D233, p. 46). This criticism misunderstands the process by which tests, such as SOGS, are developed and used. A control group is not required every time a test is implemented. Rather, initial research is conducted to determine the properties of a test and then it is subsequently used without controls. In any case, without clinical confirmation that no problem exists, it is not certain that non-regular gamblers would be an adequate control group.

Secondly, it is highly inefficient to implement a test for all people if some of them lack the principal defining characteristics of the target group. The Commission elected only to ask the SOGS of people who gambled on average weekly on a non-lottery gambling form, or who spent more than \$4000 on gambling per year. This left out non-regular gamblers spending less than that amount and non gamblers.

The Commission omitted the former from the survey because, while some of them may actually be problem gamblers, past survey evidence from Australian studies show that very few exhibit problem gambling behaviours.²⁷ The Commission was thereby able to boost its sample of regular gamblers and obtain more precise estimates of the prevalence of problem gambling. Additionally, the Commission considered that the false positive rate was likely to be high amongst this group, and wished to avoid upwardly biased estimates of the prevalence of problem gambling. However, their exclusion is likely to mean that some genuine problem gamblers were omitted from the Commission's prevalence estimate.²⁸

ACIL and its statistical consultant were also critical of the Commission for not administering the SOGS (which relates only to behaviours associated with gambling undertaken over the last 12 months) to people who were established as non-gamblers. But to do so would be akin to asking unmarried people about their marital problems or introducing breast cancer screening for men.

Notwithstanding that many of these criticisms of the SOGS are misdirected, the Commission does not consider that the SOGS is an ideal instrument, an issue to which we turn next.

6.8 Are existing tests of problem gambling adequate?

Another question relates to whether tests, such as the SOGS or the DSM-IV, are really adequate tools for looking at problem gambling. It has been claimed that the SOGS is problematic because it only looks at some dimensions of problem gambling, is ill-suited to Australia because we have a more tolerant attitude to gambling, and is not geared to certain socio-economic groups (eg adolescents, Aboriginal and Torres Strait Islanders²⁹ or ethnic communities). As part of its inquiry, the US National Gambling Impact Study Commission developed a new test (Gerstein et al. 1999, p. 14ff). The new test, the NORC DSM-IV Screen or NODS, shares many facets with the SOGS and the DSM-IV, and represents an incremental advance, rather than a genuine methodological shift.

The VCGA is also in the process of developing an alternative screen, to be called the Victorian Authority Gambling Screen (VAGS). This promises to have different conceptual underpinnings to the SOGS, DSM-IV or the new US screen, and will be

²⁷ The recent US prevalence study also used a similar method (Gerstein et al. 1999, p. 19).

²⁸ Jackson et al. (1999a, p. 29) found that 6.9 per cent of gaming machine and TAB problem gamblers in counselling exhibited current binge gambling behaviour, which may not be picked up adequately by the Commission's survey method.

²⁹ For example, see Foote (1996, p. 7) and appendix E.

based on ‘a multi-disciplinary reconceptualisation of the impacts of gambling on the individual and family’ (VCGA 1998). The Canadians have also recently developed a new measure of problem gambling (Ferris, Wynne and Single 1999) — the Canadian Problem Gambling Index (CPGI). This places a far greater emphasis than the SOGS, DSM-IV or NODS on the adverse consequences of gambling behaviour (eg health impacts), and environmental features which may contribute to problem behaviours (eg big wins).

The Committee on Problem Gambling Management from New Zealand was critical of the need for a new instrument:

There needs to be an agreement about what the measure is in Australia. We constantly hear criticism of the SOGS instrument. There is no scientific evidence that homo sapiens in Australia are a subspecies from the rest of the world and require a different scientific device, and therefore the one now applied internationally for about 15 years has no relevance here. Frankly we think that’s a lot of bunkum. If the Australians wish to introduce a new measure and want to convince the rest of the world that it’s the best one, so be it. ... I see no scientific information to come from Australia which would compel an alternative scale of measures to be applied (transcript, p. 474).

However, the notion of developing a test which draws from frameworks outside the psychiatric and psychological research domains seems worthwhile, because it may generate a richer understanding of some aspects of problem gambling — and the Canadian approach seems highly promising. However, it is too early to determine whether, in fact, any of the alternatives will represent a useful alternative or adjunct to the SOGS or DSM-IV.

Either way, there is scope for improving the body of evidence about appropriate thresholds for the SOGS and for dealing with the apparent inadequacies of some questions or their weights (section 6.5).

In summary, the SOGS has a number of limitations as a way of understanding the nature of the problems facing gamblers. Nevertheless, if interpreted carefully and augmented by other information on the harmful impacts of gambling, the Commission considers that it can provide a useful guide to the prevalence rates and impacts of problem gambling. It is, in any case, the most popular internationally used test, which allows Australian prevalence estimates to be compared with past Australian estimates and those overseas.

6.9 The prevalence of problem gambling

Prevalence of problems among adult Australians

Having defined the different levels of problem gambling and the various tests (and associated thresholds) that have been used to measure it, it is then possible to estimate the prevalence of problems among Australians:

- Using the approach of Dickerson et al. (1997), around 1 per cent of Australian adults are estimated to have severe gambling problems (level 3 problems) — equivalent to about 130 000 adults (table 6.10).

Table 6.10 **Prevalence of gambling problem by degree of problem^a**
Australia 1999

	<i>People affected</i>	<i>Share of adult Australian population</i>	<i>100 x standard error</i>	<i>Marginal number of people affected</i>	<i>Marginal prevalence rate</i>
	Number	%	%	Number	%
SOGS 3+	692 235	4.90	0.28	240 711	1.70
SOGS 4+	451 524	3.20	0.24	158 787	1.12
SOGS 5+	292 737	2.07	0.20	86 249	0.61
SOGS 6+	206 487	1.46	0.17	48 471	0.34
SOGS 7+	158 016	1.12	0.15	34 158	0.24
SOGS 8+	123 858	0.88	0.13	30 325	0.21
SOGS 9+	93 533	0.66	0.11	46 741	0.33
SOGS 10+	46 792	0.33	0.08	46 792	..
Dickerson method	129 348	0.92	0.12	129 348	..
HARM	254 778	1.80	0.19	254 778	..

^a Column 1 records the number of people in each of the SOGS categories who score at that level. A SOGS n+ means those people who scored from n to 20 on the SOGS. Thus SOGS 3+ are people who scored 3 or more on the SOGS. Column 2 is the share of such people in the Australian adult population. Column 3 is the standard error of the estimate, reflecting the statistical uncertainty associated with survey samples. It can be used to understand the likely range of prevalence rates. The 95 per cent confidence interval for any given prevalence rate is the measured rate plus or minus 2 times the standard error. For example, the 95 per cent confidence range for the SOGS 5+ prevalence rate is 1.67 per cent to 2.47 per cent. The standard errors shown here do not take account of the complex survey design (see appendix P for a description of the bootstrapping method that is used to take account of the complex design). The corrected standard error for the SOGS 5+ prevalence rate is 0.245 (or about 25 per cent wider than the conventionally defined standard error). Column 4 records the marginal number of people affected as higher SOGS thresholds are used. Thus there are about 30 000 people who have a SOGS score of exactly 8. Column 5 records the marginal prevalence rate associated with column 4. The Commission's prevalence rates assume that non-regular (on non-Lotto forms of gambling) lower-spending gamblers do not experience *any* problems. It is likely that even some of these will, so the estimates here probably understate the prevalence rate somewhat.

Source: Estimates from the PC *National Gambling Survey*.

-
- Using the adjusted SOGS 5 to 9³⁰ threshold to look at problems which are of lesser severity, then around 1.15 per cent of Australian adults currently have moderate problems (level 2 problem gambling) — or an additional 163 000 adults.
 - So overall, around 293 000 adults (or 2.1 per cent of the adult Australian population) have significant problems associated with gambling, using the SOGS as the basis for estimation.³¹
 - When looked at in terms of harmful impacts, the Commission finds around 255 000 adult gamblers (or 1.8 per cent of the adult population) experience significant adverse outcomes as a result of their gambling.
 - In the US it is suggested that people scoring 3 to 4 are also at risk of gambling problems — and indeed the usual nomenclature describes such people as ‘problem’ gamblers. They would account for an *additional* 400 000 adults (or a further 2.8 per cent of the adult population). However, the Commission considers that the use of this lower threshold in describing problem gamblers is likely to have too many false positives and prefers estimates based on higher SOGS scores or on other criteria.

State prevalence estimates are less reliable due to smaller sample sizes. With that caveat, the results indicate that NSW has a significantly higher prevalence rate (regardless of the threshold chosen for problems) than other states — which is consistent with the greater accessibility of gambling and the longer period that gaming machines have been available (table 6.11). It is notable that in states where gambling has been less common, such as Tasmania and Western Australia, prevalence rates are also much lower (an issue examined more closely in chapter 8).

³⁰ This is calculated by subtracting the Dickerson prevalence rate from the SOGS 5+ prevalence rate in table 6.10. Thus the level 2 risks have had all people scoring 10 or more removed, plus those scoring from 5 to 9 who are deemed to have genuinely severe problems.

³¹ The principal test of the reliability of a test is Cronbach’s alpha measure of its internal consistency. The reliability of the SOGS test used by the Commission is very good, with Cronbach’s alpha equal to 0.82 (much higher than the 0.70 that is usually regarded as representing good reliability — Volberg 1997, p. 35).

Table 6.11 Prevalence of gambling problems and harm incidence by state

	SOGS 10+	SOGS 5+	Dickerson method	HARM	SOGS 10+	SOGS 5+	Dickerson method	HARM
	<i>no.</i>	<i>no.</i>	<i>no.</i>	<i>no.</i>	%	%	%	%
NSW	15 923	122 300	59 798	93 985	0.33	2.55	1.25	1.96
VIC	12 477	75 925	28 974	72 713	0.35	2.14	0.82	2.05
QLD	9 857	48 609	19 665	46 274	0.38	1.88	0.76	1.79
WA	0	9 548	2 353	20 545	0.00	0.70	0.17	1.50
SA	8 266	27 809	15 627	16 315	a	a	1.38 ^a	1.44
TAS	0	1 526	305	406	0.00	0.44	0.09	0.12
ACT	146	4 588	1 629	2 944	0.07	2.06	0.73	1.32
NT	124	2 431	998	1 597	0.10	1.89	0.77	1.24
Australia	46 793	292 737	129 349	254 778	0.33	2.07	0.92	1.80

^a The prevalence result for problem gamblers for South Australia, particularly for SOGS 10+ was found to be relatively high compared to other states (0.73 per cent for SOGS 10+ and 2.45 per cent for SOGS 5+). This probably reflects sampling error.

Source: PC National Gambling Survey.

Quite apart from the SOGS or HARM, the Commission also examined the prevalence of gambling problems using some self-assessment questions posed to adult Australians:

- around 6.3 per cent of those surveyed indicated that they had some sort of problem on a scale of 2 (a small problem) to 10 (a severe problem) (table 6.12) — equivalent to an aggregate of around 890 000 adults.³² However, most of these were people who rated their problems as slight. About 1.5 per cent indicated that they had problems which were rated 5 or more out of 10.
- about 0.8 per cent of adults surveyed (equivalent to 111 000 adults in the whole population) said they wanted help — an indication of genuine problems at least as far as the perceptions of the person are concerned. But less than half of these had tried to get help of any kind, including from informal sources (chapter 17).

³² In other words 94 per cent said they had no problem at all.

Table 6.12 Gamblers' self-rating of the degree of problem they face

Rating of problem	Number of adults	Share of adult population
	Number ('000)	%
1 - Not At All A Problem	13 233	93.68
2	397	2.81
3	176	1.25
4	94	0.67
5	67	0.47
6	48	0.34
7	50	0.36
8	18	0.13
9	5	0.03
10 - A Serious Problem	17	0.12
Can't Say	21	0.15
Total	14 126	100.00

Source: PC National Gambling Survey.

Other studies of prevalence

Other than the anomalously high result³³ obtained for the first partly national study, previous Australian surveys of problem gambling (table 6.13) suggest that around 0.3 per cent of the adult population have severe problems (using the SOGS 10+ cutoff) and about 1 to 2.9 per cent of the adult population have *at least* moderate levels of problem (using the SOGS 5+ threshold).

Some of the differences between states and points in time apparent in table 6.13 may represent real differences in prevalence rates, but some will reflect the different ways in which the various surveys were implemented (telephone versus doorknock), subtle but important differences in questions, whether regular or all gamblers were asked the SOGS questions, and sampling (and other) errors.³⁴

³³ The first 'national' study conducted in four capital cities (Sydney, Brisbane, Melbourne and Adelaide) suggested much higher prevalence rates than have been found since. This should probably not be regarded as a reliable indicator of prevalence rates at that time.

³⁴ If something is rare among a population then different samples of that population will tend to provide estimates of prevalence which deviate considerably. For example, suppose that the true prevalence rate was 0.5 per cent and a random sample of 1000 adults was taken. The probability of discovering J problem gamblers in this sample is calculated as:

$$\Pr(J)=_{1000}C_J \times p^J(1-p)^{1000-J}$$

where $_{1000}C_J$ is the number of combinations of 5 among 1000 and p is 0.005. The likelihood of discovering just 5 problem gamblers (the expected number of problem gamblers) in the sample is only 17.6 per cent. There is a 12.4 per cent chance of finding 2 or less problem gamblers, and a 13.3 per cent chance of finding 8 or more problem gamblers. As Dickerson et al. (1996a) note,

Table 6.13 Prevalence estimates of problem gambling from past surveys^a

	'National' 1991-92	Tas 1994	Tas 1996	WA 1994	NSW 1995	NSW 1997	SA 1996	Victoria 1997	Victoria 1998
Survey method	D	D	T	D	D	D	T	T	T
No. participants	2744	1220	1211	1253	1390	1209	1206	2000	1737
Total no. regular gamblers	376	n.a	n.a	204	~528	457	381	n.a	n.a
Regular gambler participants	290 ^b	295	477	204	299 ^c	288 ^d	381	n.a	n.a
Gamblers offered the SOGS ^e	Regular	Regular	All	Regular	Regular	Regular	Regular	All	All
N SOGS 5+	107	14	35	7	36	38	15	15	26
N SOGS 10+	22	2	3	4	9	6	4	3	n.a.
p SOGS 5+ (%) ^f	6.60	1.14	2.89	0.56	2.59	2.89	1.24	0.75	1.5
p SOGS 10+ (%)	1.16	0.16	0.25	0.32	0.57	0.41	0.33	0.15	0.3
CI SOGS 5+ (%)	5.67 - 7.52	0.54 - 1.73	1.94 - 3.83	0.14 - 0.97	1.75 - 3.42	1.94 - 3.83	0.61 - 1.86	0.37 - 1.12	0.92- 2.08
CI SOGS 10+ (%)	0.75 - 1.56	0.0 - 0.38	0.0 - 0.53	0.00 - 0.63	0.17 - 0.96	0.04 - 0.77	0.00 - 0.65	0.0 - 0.31	0.04- 0.56
Adult population ('000)	12 909	346	348	1 269	4 638	4 762	1 122	3 469	3 520
NPOP 5+ SOGS	851 994	3 944	10 057	7 106	120 124	137 622	13 913	26 017	52 800
NPOP 10+ SOGS	149 744	554	870	4 061	26 437	19 524	3 703	5 203	10 560

^a Mnemonics are D is a doorknock survey; T is a telephone survey, N is the number of survey respondents who are problem gamblers, p is the prevalence rate, CI is the confidence interval, and NPOP is the number of problem gamblers in the population. ^b The refusal rate for Part 2 of the survey was 22.9 per cent. ^c In the 1995 NSW study, a quota of 140 was set for Lotto only players, ie. 229 weekly Lotto players out of the 369 eligible for Part 2 were not offered it. ^d In the 1997 NSW study, a quota of 113 was set for Lotto only players, ie. 169 weekly Lotto players out of the 282 eligible for Part 2 were not offered it. ^e Regular gamblers are defined as those gambling at least once per week; the Tasmanian and Victorian surveys asked the SOGS of all gamblers — those who had participated in gambling activities in the last 12 months and 6 months respectively. ^f The standard error of the prevalence estimate is $\sigma = \text{SQRT}\{p(1-p)/N\}$, where p is the prevalence rate and N is the sample size. The 95 per cent confidence interval is p plus or minus 1.96σ .

Source: Dickerson, Baron, Hong and Cottrell (1996); Dickerson and Baron (1994); and Dickerson and Maddern (1997); Dickerson, Baron and O'Connor (1994); Dickerson et al (1996a, 1998); Delfabbro and Winefield (1996); Market Solutions and Dickerson (1997) and Roy Morgan (1999). Population numbers are from the ABS Cat. no. 3201.0 (various issues).

Taking the differing populations into account, the weighted average prevalence rates of these past Australian studies is 1.8 per cent (excluding the 1991-92 national study) and 3.3 per cent (including the national study). Accordingly, the Commission's prevalence estimates are broadly in line with state studies that have been conducted over the last decade. That said, the overall prevalence estimate derived from the *National Gambling Survey* should be more accurate, reflecting its larger sample size and the use of a consistent set of questions.

small prevalence rates stretch the accuracy of the survey method to its limits. Indeed, apart from the early national study, with sample surveys ranging in size from around 1200 up to 2000 participants, the number of problem gamblers identified across the various state studies ranges from only 2 to 9, a variation which could arise purely from chance. This is evidenced by the fact that the 95 per cent confidence intervals for the SOGS 10+ prevalence rates overlap for all states.

A range of studies have been conducted around the world to estimate problem gambling prevalence rates:

- A recent large-sample Swedish study (Rönnerberg et al. 1999, p. 55) estimates the prevalence of problem gambling in Sweden at 0.6 per cent (based on SOGS 5+) with 0.2 per cent having a SOGS score of 8 or more.³⁵
- A large number of studies have been conducted in the US and Canada, and these suggest that problem gambling (defined by the SOGS 5+ threshold) amongst non-institutionalised adults amounts to around 1.1 per cent of adults (table 6.14) compared to Australia at 2.3 per cent. However, it is also common in the US to refer to people scoring 3 or more on the SOGS as ‘problem’ gamblers. The group scoring 3 or more are estimated to comprise around 4 per cent of US adults. While the Commission questions the usefulness of this low cutoff, the Australian measure of problem gambling using this cutoff is still higher at about 4.9 per cent (table 6.10).
- The most recent US study (National Gambling Impact Study Commission NGISC 1999) suggests that around 1.1 per cent of American adults were current ‘pathological’ gamblers (using a DSM-IV screen). A DSM-IV screen rating of 5 does not have a simple equivalence to the SOGS, but tends to identify the same groups of gamblers.
- A range of studies have been conducted in Spain (Becona 1996). Two studies pointed to a prevalence of problem gambling (on a SOGS 5+ threshold and a DSM-IV rating of 4+ respectively) of 1.7 per cent. A more recent study found 1.4 per cent of adults were problem gamblers (using SOGS 5+).
- A number of studies have been undertaken in New Zealand (Abbott and Volberg 1991, 1992) and they point to a prevalence of problem gambling of around 1.2 per cent (using the SOGS 5+ cutoff).

Once their use of a lower SOGS cutoff in diagnosing problem gambling is taken into account, the picture emerging is that the prevalence of at least level 2 problem gambling is significantly greater in Australia than other countries. This should not be surprising given the much wider availability and acceptability of gambling in Australia.

³⁵ This study found that a further 1.4 per cent of people had SOGS scores of 3 to 4, which the authors regarded as also indicative of a problem.

Table 6.14 Mean prevalence rates (and confidence intervals) of gambling problems, a meta analysis of North American surveys^a
1977–1997

<i>Affected groups</i>	<i>Typically SOGS 5+ (lifetime)</i>	<i>Typically SOGS 3-4 (lifetime)</i>	<i>Typically SOGS 5+ (past year)</i>	<i>Typically SOGS 3-4 (past year)</i>
	%	%	%	%
Adult				
Prevalence	1.6	3.85	1.14	2.8
95% confidence interval	1.35-1.85	2.94-4.76	0.9-1.38	1.95-3.65
Adolescent				
Prevalence	3.88	9.45	5.77	14.82
95% confidence interval	2.33-5.43	7.62-11.27	3.17-8.37	8.99-20.66
College				
Prevalence	4.67	9.28
95% confidence interval	3.44-5.90	4.43-14.12
Institutionalised (eg prisons, drug rehab)				
Prevalence	14.23	15.01
95% confidence interval	10.70-17.75	8.94-21.07

^a In undertaking the meta-analysis, Shaffer et al. did not look at actual SOGS or DSM-IV scores, but used authors' ratings about the proportion of gamblers who were at-risk or 'pathological' problem gamblers. In the US, the customary use of the SOGS is that scores of 5+ are used to label people as 'probable pathological' gamblers, while scores of 3 to 4 (and sometimes even 1 to 4) are used to identify gamblers who are apparently at-risk. The total number of people identified as having problems is the sum of these two groups. For example, Shaffer et al's results point to about 5.45 per cent of North Americans as having some problems with their gambling. In comparing the results of the US studies with Australia it should be emphasised that no Australian study has regarded a score of below 5 as relevant to the diagnosis of problems. The lower cutoff used by US studies has also obscured evidence on the number of people with high SOGS scores (of 10+) — these are mostly not reported.

Source: Shaffer et al. (1997, p. 34).

Disaggregated prevalence measures for Australia

Prevalence calculations based on the population as a whole can be misleading. First, calculating problem gambling prevalence rates using all adults in the denominator is based on the premise that all adults are equally exposed to gambling, which they are not. To use an analogy, the prevalence of mountaineering-related deaths of Australians is almost infinitesimally small, but the prevalence of mountaineering related deaths among mountaineers is relatively high.

Second, concentrating on the person who directly experiences the problem fails to take account of the likely impacts on those affected by the problem gambler — which includes family members, friends and work colleagues, as well as, in extreme cases, crime victims. Problem gambling has ripple effects on others:

The prevalence rate also does not take into consideration that a person experiencing a gambling problem lives in a community which he/she impacts. So the negative impacts of gambling can manifest themselves in individuals and their families (partners and children), their social network, their productivity at work and sometimes even in illegal acts to finance the gambling in order to try to make up losses (Lifeline Canberra Inc, sub. 103, p. 2).

Third, even if a prevalence figure is low, it does not mean that this provides a basis for sidelining problem gambling. The costs for those affected have to be weighed up against the benefits for those who are not.

Finally, it ignores the prevalence of under-age gambling problems, which lie outside the scope of the definition.

There are a number of alternative methods for calculating or better understanding prevalence rates by examining:

- *The prevalence of problem gambling amongst adults who have gambled in the past 12 months* (eg as advocated by Shaffer et al. 1997, p. 65). Since about 80 per cent of Australian adults gambled in the last 12 months, this makes a modest difference to prevalence rates — with the rate of level 2 (or higher) problem gambling touching on 3 per cent for gamblers as a whole.
- *The prevalence of problem gambling by the type of gambling* (eg wagering on horses compared to lotteries or gaming machines). This allows for the fact that the likelihood of developing problems is higher among some forms of gambling, and that calculating a general prevalence rate masks severe problems in some forms and slight problems among others. The data (table 6.15) however, can provide a misleading indicator of risk for popular forms of gambling, since it combines two distinct groups of gamblers — those who are regular (on average,

weekly) players and those who are non-regular gamblers.³⁶ This is why the rate of problem gambling amongst all people who have gambled in a given mode is lower in modes which are popular. It would *not* be appropriate, for example, to declare that gaming machines are low risk on the basis of the estimates for ‘all players’ in table 6.15.

- *The prevalence of problem gambling by the intensity of gambling* (either by frequency or amount). Many people have very low exposure to gambling. It is revealing to calculate prevalence rates in their absence to see to what extent the likelihood of problems rises with intensity of play. These measures also might help to identify problem gamblers from easily monitored behaviour, or to design harm minimisation strategies. For example, if one per cent of people who undertook gambling of a certain form had gambling problems, it is not useful for identification of problem gamblers among that group. However, if 50 per cent of people who gambled weekly on the form had such problems then it is a useful discriminator of problem gambling. Weekly gambling on gaming machines, and casino table games is a highly significant indicator of an increased likelihood of problem gambling.³⁷ Around one in five regular gaming machine and casino table game players score 5 or more on the SOGS.
- *By ‘favourite’ mode* (the mode where most money is perceived to be spent). People often gamble on many different forms of gambling. If they are a problem gambler in a particular mode of gambling, then they will still be counted as a problem gambler when they play other modes, even if their expenditure is relatively modest. One way of overcoming this is to calculate the share of people with problems by their favourite mode of gambling (figure 6.4). This strongly suggests that lotteries and instant scratch tickets present few direct problems. For example, only 0.28 per cent of those who consider lotteries their most expensive form of gambling have any problems. But gaming machines loom much larger as a source of problems, with one in ten of those for whom this is the favourite form scoring 5 or more on the SOGS.
- *The Continued Adoption Rate* (Focal Market Research 1998, p. 1.19) or *Conversion Rate* (Volberg and Stuefen 1991 and Baseline Research 1996) of different forms of gambling. This is the ratio of the percentage of people who

³⁶ We also emphasise that the calculations here are based on the share of problem gamblers (whatever the gambling mode or modes that is the source of their problems) who play any given mode. Thus because some problem gamblers will gamble on lotteries, there is a share of problem gamblers among lottery players. This should not be taken to mean that lottery playing caused the problem. The relevant issue is the comparative representation of problem gamblers by mode of gambling. If it is higher, this is suggestive that that mode is more risky.

³⁷ Results for keno, subsumed in other commercial games, also suggest a relatively high level of risk.

gamble in a particular gambling form on a *weekly basis* to the percentage of people who gamble on this form *at all* (over the last 12 months) While not prevalence measures themselves, they indicate the extent to which people are potentially exposed to risk when playing a particular form of gambling. The continued adoption rate is very high for lotteries, but since this a low risk form of gambling this does not have significance for problem gambling. However, it is also relatively high for gaming machines and racing, which means that a relatively large group of people are exposed to high risks — which explains why people playing these games account for the bulk of problem gamblers seeking help. In contrast, while regular gambling on casino table games appears to be a strong indicator of an increased likelihood of problem gambling, very few people who play casino tables games do so weekly.

- *Problem gambling among non-adult populations.* All of the major state and national surveys have excluded under-age gamblers from their scope. However, there is abundant overseas, and some Australian evidence, that problem gambling also affects people aged under 18. Prevalence rates of these problems should also be calculated. The Commission did not undertake a survey of adolescent gambling, but other Australian studies and international research, suggests that youth problem gambling is at rates somewhat *higher* than in adult populations.

In summary, it appears that some forms of gambling, such as lotteries and scratchies, in their current forms, currently present low risks for problem gambling. Other forms, particularly regular playing of gaming machines and casino table games, appear to be associated with a higher likelihood of gambling problems.

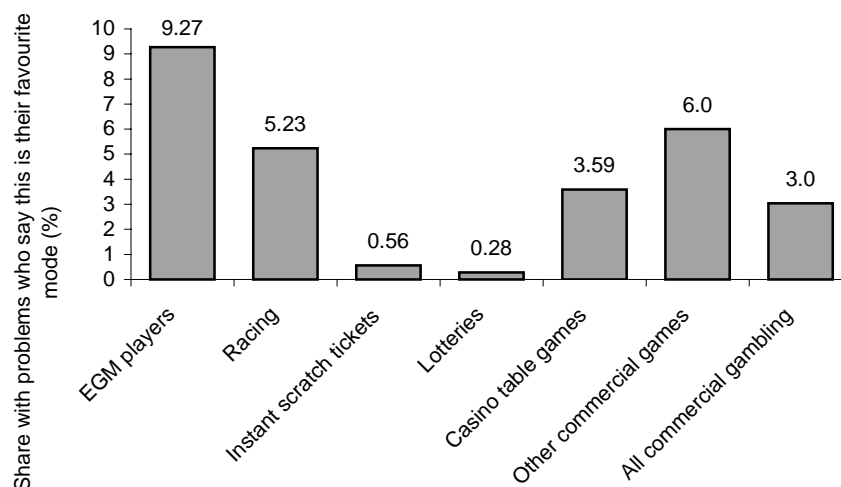
Table 6.15 Problem gambling prevalence and harm incidence rates by gambling mode and frequency of playing^a

	SOGS 5+	SOGS 10+	HARM	Relevant share of adults	Continued adoption rate
	%	%	%	%	%
All players					
EGM players	4.67	0.76	4.09	38.60	..
Racing	4.46	0.74	3.80	24.30	..
Instant scratch tickets	2.83	0.39	2.34	46.20	..
Lotteries	2.75	0.34	2.42	60.00	..
Casino table games	6.12	1.06	4.67	10.31	..
Other commercial games	5.60	0.92	5.02	23.51	..
All commercial gambling	2.55	0.41	2.22	81.30	..
Weekly players					
EGM players	22.59	3.77	14.79	4.27	11.06
Racing	14.72	3.10	11.45	3.45	14.20
Instant scratch tickets	5.49	1.32	5.90	6.70	14.50
Lotteries	2.48	0.35	2.44	29.10	48.50
Casino table games	23.84	8.03	15.63	0.25	2.42
Other commercial games	13.31	2.30	8.05	3.70	15.74
All commercial gambling	4.62	0.88	3.48	37.53	46.16
Regular non-lottery	15.36	2.79	10.70	9.47	..

^a The relevant share of adults is the percentage of adults who play in the relevant categories. For example, 81.3 per cent of adults have participated in commercial gambling in the last year, but only 9.5 per cent gamble weekly or more on non-lottery gambling modes. Non-lottery excludes both lotto type products and instant scratch tickets.

Source: PC National Gambling Survey.

Figure 6.4 Share of people with problems by their favourite mode of gambling^a



^a The 'favourite' mode was determined by asking what mode gamblers thought they had spent the most on.

Data source: PC National Gambling Survey.

6.10 Who are the problem gamblers?

A relevant issue for possible targeting of any public health campaigns is whether there are any clear socio-demographic pointers to higher incidence of problem gambling. Clearly, as suggested in the previous section, regular play on a continuous form of gambling, such as gaming machines, is a very significant risk factor. Otherwise, only a relatively few relevant factors emerge (tables 6.16, 6.17 and appendix Q). Indeed there are often bigger differences between gamblers and non-gamblers than there are between problem gamblers and gamblers generally.

Problem gamblers in the general population appear to be younger than the average gambler. A gambler aged under 25 years has a likelihood of developing a gambling problem about twice that of gamblers as a whole. Those in counselling are older than those who have not sought help (consistent with people enduring problems for some time before people seeking help). Gamblers over 70 years rarely appear to display gambling problems. They have a likelihood of developing problems about one fifth of that of gamblers as a group.

Table 6.16 The age of problem gamblers
Australia 1999^a

<i>Age</i>	<i>In counselling</i>	<i>Problem gamblers</i>	<i>All gamblers</i>	<i>Non-gamblers</i>
<i>Years</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
Under 25	6.3	26.4	13.8	11.2
25-29	8.6	15.1	9.4	9.3
30-34	9.6	8.4	11.6	8.2
35-39	14.5	10.6	10.2	10.1
40-44	19.3	6.8	10.2	9.4
45-49	14.0	9.0	9.7	10.6
50-54	14.0	8.3	11.0	10.0
55-59	6.3	8.1	7.7	7.2
60-64	4.1	2.6	4.7	5.5
65-69	2.0	3.3	4.4	5.3
70+	1.3	1.5	7.2	13.4
Total	100.0	100.0	100.0	100.0

^a The ratios of column 2 to column 4 and the ratio of column 3 to column 4 provide a rough indication of the changed level of risk of being a problem gambler, taking the age distribution of all gamblers as the benchmark.

Source: PC Survey of Clients of Counselling Agencies, PC National Gambling Survey.

There appear to be few differences between problem gamblers and all gamblers on the basis of education (though fewer of those who are in counselling have been to university or CAEs).

It also does not *seem* to affect the likelihood of problems if a person was born in Australia or not. This is also the finding of Jackson et al. (1999b, p. 12) when examining the ethnicity of Break Even clients in Victoria. However, there does appear to be a higher prevalence of problems among gamblers who do not speak English at home. But little is known overall about the way in which gambling problems are manifested among different cultural groups. It may be that the relative likelihoods of problem gambling are higher (or lower) than suggested by these figures. For example, they may be higher if problem gamblers speaking a foreign language or who are culturally uneasy about survey questionnaires or counselling services are not included in the sampling. As well, problem gambling is a concept rooted in a cultural context, and what may be benign or problematic in one setting may be otherwise in another. The AIGR (1999) has completed a report for the Racing and Gaming Commission of Western Australian on access to services by different cultural groups. A study which reports the results of a major survey of ethnic groups in NSW is due to be released in the year 2000.

People who are separated or divorced, unemployed, living in single-person households are more highly represented amongst problem gamblers. This is also the finding of Jackson et al. (1999b, p. 13). For example, they found that 20.7 per cent of Victorian Break Even clients presenting for a gambling problem are divorced or separated (p. 13) and 12 per cent are unemployed (p. 17). However, the causality is complex. Other results (chapter 7) suggest that work and marital status may be the result of problem gambling, rather than risk factors themselves.

Average personal income appears to be somewhat lower among gamblers in counselling or who were identified by the *National Gambling Survey* as problem gamblers — but the difference is slight. Jackson et al. (1999b, pp. 19-20) also found that problem gamblers have a similar level of income to other adults (figure 6.5). That said, a considerable number of problem gamblers are in lower income brackets (figure 6.5 and appendix Q).

Males and female problem gamblers appear to be equally represented at counselling services. The Commission's *Survey of Clients of Counselling Agencies* suggested that 51.4 per cent of clients were male — close to the 49.8 per cent found for Victorian Break Even clients in 1997-98 by Jackson et al. (1999b, p. 10). However, the Commission's *National Gambling Survey* suggests that males are still somewhat more highly represented among problem gamblers in the general population. This suggests that males may be less willing to seek professional counselling assistance.

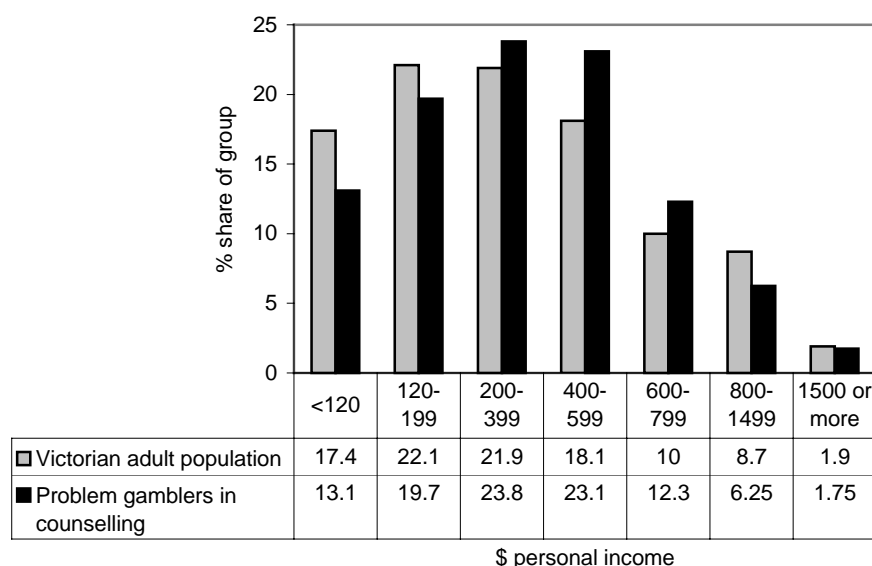
Table 6.17 Who are the problem gamblers?

Australia 1999

<i>Characteristic</i>	<i>In counselling</i>	<i>Problem gamblers</i>	<i>All gamblers</i>	<i>Non-gamblers</i>
	%	%	%	%
<i>Education</i>				
Up to 4th year high school	38.4	31.0	29.5	24.6
Finished high school	26.7	28.7	28.6	24.0
TAFE/ technical education	12.7	9.8	11.2	7.8
CAE/University	21.1	30.5	30.8	43.7
<i>Male</i>	51.4	60.0	50.0	45.0
<i>Foreign born</i>	26.2	19.7	22.3	27.9
<i>Father Australian</i>	60.1	56.9	63.2	58.9
<i>Mother Australian</i>	61.4	63.3	65.9	60.9
<i>Non-English spoken at home</i>	9.7	8.2	4.8	9.2
<i>Aboriginal or Torres Strait Islnd.</i>	1.2	2.4	1.6	1.0
<i>Marital status</i>				
Married or living with a partner	47.3	47.3	66.1	66.3
Separated or divorced	25.1	8.1	5.9	4.6
Widowed	3.3	1.4	3.6	6.5
Single	24.3	43.2	24.3	21.9
<i>Household type</i>				
Single person	24.7	8.5	8.1	10.8
One parent family with children	9.4	3.7	5.0	4.0
Couple with children	16.8	34.9	50.3	48.5
Couple with no children	32.4	21.2	22.2	23.7
Group household	8.4	27.0	11.2	9.8
Other	8.2	4.6	3.0	2.9
<i>Major income source</i>				
Wages/salary	55.3	69.7	63.6	52.8
Own business	11.2	7.0	13.8	18.2
Other private income	0.8	1.6	2.9	4.4
Unemployment benefit	8.4	5.2	2.3	2.0
Retirement benefit	2.0	2.0	3.8	5.1
Sickness benefit	2.3	0.1	0.2	0.3
Supporting parent benefit	3.8	2.3	1.5	0.5
Aged/invalid pension	13.5	9.0	8.5	12.5
Other	2.3	3.1	2.6	2.1
<i>Work status</i>				
Working full-time	42.6	53.5	48.4	41.9
Working part-time	15.3	16.4	16.0	15.3
Home duties	8.9	6.4	10.1	9.2
Student	2.8	10.5	5.3	6.6
Retired (self-supporting)	2.0	2.1	8.9	12.8
Pensioner	13.0	7.0	7.1	9.3
Unemployed (or looking for	12.0	4.1	2.9	2.4
Other	3.3	0.1	1.0	2.0
<i>Average personal income</i>	28 819	30 050	32 120	31 100

Source: PC Survey of Clients of Counselling Agencies, PC National Gambling Survey.

Figure 6.5 Personal income of problem gamblers in counselling
Victoria 1997-98^a



^a Based on a sample of over 2 200 problem gamblers in counselling. The data included two categories of income data that recorded income ranges on a different basis to the remaining data. These were distributed evenly among the appropriate income ranges.

Data source: Jackson et al. (1999b).

The current roughly balanced gender mix of problem gambling represents a large shift in the composition of problem gamblers over the past decade. In their 1991 national study, Dickerson et al. (1996) found that 86 per cent of problem gamblers were male. The prevalence of problem gambling among females has increased by a factor of three over this time. It appears that this ‘feminisation’ of problem gambling has proceeded with the introduction of gaming machines — an issue examined more closely in chapter 8.

Many socio-demographic factors are correlated. For example, young people tend to have lower incomes than middle aged people. Accordingly, results, such as those in tables 6.16 and 6.17, might conceal significant patterns in the likelihood of problem gambling, once these interdependencies are taken into account. To deal with this problem, the Commission undertook a logistic regression analysis of the likelihood of being a problem gambler for those who answered the SOGS (and therefore mainly regular gamblers).

The most important factors associated with a higher likelihood of problems for regular gamblers appear to be age (a negative impact on the likelihood of problem gambling), the frequency of playing gaming machines (a positive influence), the frequency of betting on racing (positive), the frequency of playing at the casino

(positive), and residency within a city (positive). Higher household income appeared to be negatively associated with problem gambling, but the effect was weak and not statistically significant at the conventional 5 per cent level. Once confounding variables are taken into account, other demographic variables (such as sex, education, ethnicity or marriage status) had no apparent effect on the likelihood of developing problems amongst regular gamblers. This does not mean that these variables may not have some influence on the likelihood of problem gambling:

- It is possible that the probability of undertaking regular gambling in the first place is correlated with some of these factors, and that then exposes the person to the risks of problem gambling (for example, more highly educated people appear to be less likely to gamble at all).
- The sample size (140) of problem gamblers in the *National Gambling Survey* means that the standard errors associated with the demographic characteristics of problem gamblers will be relatively high.³⁸

But the overall message from the analysis of the characteristics of problem gamblers is that there are few clear individual factors, other than age, that are associated with a higher likelihood of gambling problems. Certain playing modes — particularly regular gambling on continuous forms, such as gaming machines — appear also to be a significant determinant of higher prevalence rates.

6.11 What is the duration of problems?

Information about the duration of problem gambling is interesting in a policy sense for a variety of reasons:

- first, it suggests whether the costs borne by problem gamblers persist year after year, or disappear after a relatively short duration; and
- second, it provides a guide to the incidence of gambling problems amongst an adult population. If each year, 2.1 per cent of the adult population had a gambling problem, and the duration of the problem was just one year, then this would imply that a large share of the adult population would have gambling problems at some point in their lives. Conversely, if the problems are enduring, then the proportion of the adult population who at some time will develop problems is a small factor (around 2) times the annual prevalence rate.

³⁸ The standard error is about $0.085\sqrt{(p(1-p))}$ where p is the proportion of the group with a given attribute.

The evidence points to problem gambling as an enduring problem for those who are affected. Gamblers from the *National Gambling Survey* who identified themselves as having a current problem had had the problem for an average 9.1 years.³⁹ Some 28 per cent had experienced problems for 10 years or more.

The *Survey of Clients of Counselling Agencies* suggested similar results, with an average duration of problems of 8.7 years.⁴⁰ Again, around 30 per cent of clients experienced problems for 10 years or more (table 6.18).

Table 6.18 The duration of problems amongst clients of counselling services

	<i>Share of problem gamblers</i>
	%
Less than one year	3.1
One to two years	16.5
Over 2 years to 5 years	27.9
Over 5 years to 7 years	12.4
Over 7 years to 10 years	9.8
Over 10 years to 15 years	11.6
Over 15 years	18.6

Source: PC *Survey of Clients of Counselling Agencies*.

Dickerson, Baxter et al. (1995, p. 94) found that nearly 40 per cent of help-seeking problem gamblers had experienced problems for more than 10 years (table 6.19).

However, amongst Queensland help-seeking problem gamblers, less than 10 per cent had experienced problems with this duration (figure 6.6). Females tend to have had a far shorter average duration of problems, probably reflecting the relative recency of mass involvement by women in gambling. This suggests that problem gambling prevalence rates will tend to climb in the future as the existing stock of problem gamblers accumulates.

³⁹ Those who indicated that the problem had been in the past suggested an average duration of 3.2 years.

⁴⁰ Some overseas research suggests a longer duration of problems among help seekers. For example, a US study (Lorenz, Politzer and Yaffee 1990) found that the mean age when members of a Gamblers Anonymous group had first lost control of their gambling was 27 years (a mode of 18 years) and the mean age when they had gained control was 40 years (a mode of 37 years) — which points to a typical duration of 17 to 19 years for this group.

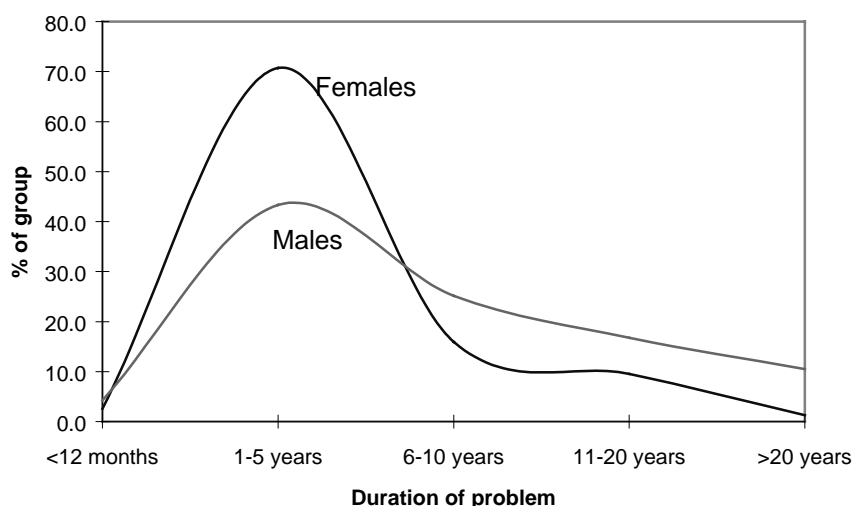
Table 6.19 The duration of problem gambling

<i>Duration</i>	<i>% of problem gamblers by duration of problem</i>	<i>Duration</i>	<i>% of problem gamblers by duration of problem</i>
	Queensland BreakEven clients ^a		South Australian counselling clients ^b
	%		%
0 to 2 years	28.2	Up to 3 months	3.1
3 to 5 years	16.7	3 to 6 months	5.7
6 to 10 years	16.1	6 to 12 months	14.6
11 to 15 years	9.8	1 to 2 years	29.9
15 to 20 years	5.8	2 to 5 years	29.3
> 20 years	23.0	5 to 10 years	9.1
		10 years or more	8.4

^a These data are for 1994, and would be expected to be influenced by the relatively recent liberalisation of gaming machines in Queensland at the time. ^b These data are from November 1996 to May 1998 for a sample of South Australian clients of gambling counselling services.

Source: Queensland data from Dickerson, Baxter et al. (1995, p. 94) and South Australian data from Elliot Stanford and Associates (1998).

Figure 6.6 Duration of problem gambling by gender
Clients of counselling agencies^a



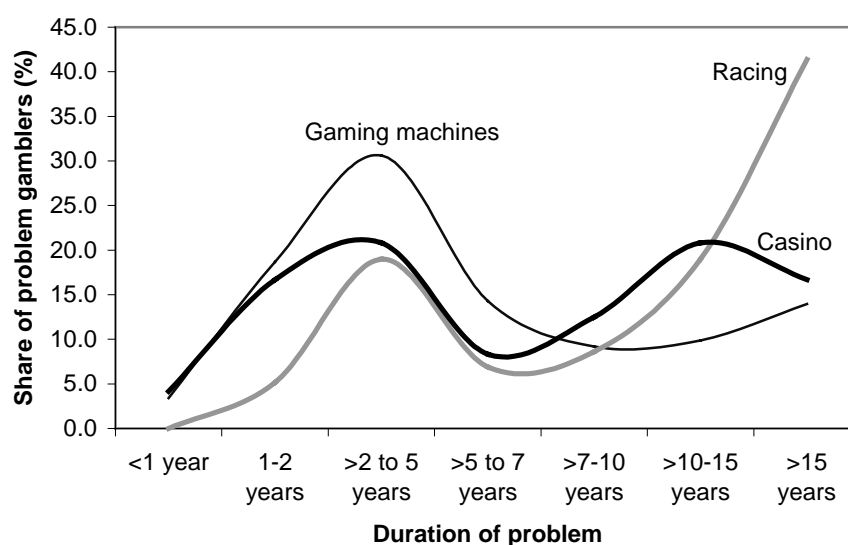
^a The data have been smoothed.

Data source: Relationships Australia Queensland (sub. 62).

People with problems relating to racing appear to have had far more enduring problems than those with problems from gaming machines or casino table games (figure 6.7). About 40 per cent of the clients of counselling agencies with a gambling problem relating to racing have had the problem for more than 15 years — about double that of the two other modes. Many more clients with gaming

machine problems have a very short duration of problems. This probably reflects the more recent liberalisation of gaming machines. The data suggest that clients in states other than New South Wales had a significantly lower duration of machine gambling problems. For example, South Australian gaming machine problem gambling clients had an average duration of problems of 4.8 years compared with 10.9 years in New South Wales. By contrast, there were no statistically significant differences between duration for racing-related gambling problems in different states. These duration data suggest that a whole new cohort of problem gamblers have been created with the liberalisation of gaming machines.

Figure 6.7 Duration of gambling problem by source of problem
Counselling clients^a



^a Clients were asked to nominate the gambling mode that was the principal source of their gambling problems.

Data source: PC Survey of Clients of Counselling Agencies.

The duration data imply that many problem gamblers must have started gambling at a young age. The Commission was told by counselling agencies that many problem gamblers report that they commenced gambling at a relatively early age, and that they even developed problems when they were young. For example, the Festival of Light pointed to the risks of scratchies for young people:

A youth ... told us that he had begun buying Keno and instant scratchies at the age of 16, but had quickly become addicted ... He started buying them with spare change he happened to have. He had a few small wins, and that kept him going so he started to 'spend up big'. 'There was one time I had a spare dollar so I played it on Keno. I won \$3, but ended up spending that also and losing it. I was hooked — so I spent \$10 I was

planning to save, and ended up with nothing... I always thought I would win in the next game' (sub. 107, pp. 3, 9-10).

The *Survey of Clients of Counselling Agencies* confirms this (table 6.20), with 24 per cent of gamblers in counselling indicating that they commenced gambling regularly below the age of 18 years. Five per cent indicated that they had developed problems when under 18 years. There is also a marked difference between males and females, with many more males regularly gambling earlier than females — and also, accordingly, developing problems earlier.

Table 6.20 The age at which problem gamblers in counselling reported they first gambled and developed problems, by gender
Australia 1999

Age category	Age when started gambling regularly			Age when first developed problems		
	Males	Females	All	Males	Females	All
	%	%	%	%	%	%
<=10	3.1	3.2	1.3	0.0	0.0	0.0
11-17	35.0	10.2	22.5	9.1	1.1	5.0
18-24	33.0	18.3	26.6	33.7	11.9	23.4
25-35	13.2	26.9	19.7	29.7	28.1	29.0
36-49	12.7	29.6	20.8	22.6	39.5	30.7
50+	3.1	11.8	9.1	5.0	19.5	11.8
Total	100.0	100.0	100.0	100.0	100.0	99.9

Source: PC *Survey of Clients of Counselling Agencies*.

6.12 Comparison of gambling problems with other public health concerns

As noted by Gerstein et al. (1999, p. 50) and Tabcorp (sub. D232, p. 9), it is instructive to examine how the prevalence of problem gambling compares with other key public policy health concerns. The evidence suggests that the prevalence of current year problem gambling is considerably less frequent than problems with alcohol and tobacco. On the other hand, it is rather more prevalent than current use of illicit injection drugs. It is also considerably more prevalent than the yearly incidence of some other public health concerns such as transport related injury and scalding in infants (both of which are the subject of awareness campaigns — chapter 16).

It should be emphasised that the relative magnitudes of prevalence rates among different sets of public health problems is only one consideration for prioritising policy action. The major consideration is the marginal net benefit associated with

public intervention, which will depend on the effectiveness and cost of interventions.

Table 6.21 The prevalence and incidence of public health concerns

<i>Health concern</i>	<i>Relevant population prevalence rate</i>	<i>Source</i>
	%	
Australia		
Regular smoker ^a	22.4	AIHW 1999 p. 12
Daily consumption of 5 or more standard drinks daily ^b	2.3	AIHW 1999 p. 18
Harmful or hazardous regular consumption of alcohol ^c	7.1	AIHW 1999 pp. 16-18
Use of an injecting drug in the last 12 months ^d	0.7	AIHW p. 26
Severe gambling problems ^e	0.9	<i>PC National Gambling Survey</i>
Moderate gambling problems ^f	1.2	<i>PC National Gambling Survey</i>
Hospitalisation rates for transport-related injury ^g	0.2	AIHW 1998, p.300
Hospitalisation rates for scalds 0-4 year olds	0.1	AIHW 1998, p.300
United States		
Current year alcohol dependence	7.2	National Research Council 1999 p. 81
Current year illicit drug dependence	2.8	National Research Council 1999 p. 81
Current year 'pathological' gambling ^h	0.9	National Research Council 1999 p. 81
Current year 'problem gambling' ⁱ	2.0	National Research Council 1999 p. 81

^a Smokes daily/most days. The prevalence is of the population aged 14 or above. ^b This is based on the share of people aged over 14 years who consume more than 4 standard drinks daily. ^c This is based on males who consume more than 4 standard drinks (the recommended maximum) at least 4 days a week, and on females who consumer more than 2 standard drinks (the recommended maximum) at least 4 days a week. It is unlikely to measure dependence. It is measured as a share of the population aged 14 years and above. ^d These drugs are mainly opiates, but also include a range of other injectable illicit substances. It only relates to use over the last year, and should not be equated with dependence. The prevalence rate applies to the population aged 14 and above. Tabcorp (sub. D232, p. 10), using the same source, cited a figure of 2.2 per cent for drug dependence, but this appears to be lifetime use of heroin. ^e Based on the Dickerson definition used in this chapter (share of the adult population). ^f Based on the residual of people scoring SOGS 5+ who were not included in Dickerson's definition (share of the adult population). ^g Rate based on the whole population. ^h The standard for measuring 'pathological' gambling is different to Australia — if a comparable standard had been used it is likely that the United States measured prevalence rate of so-called 'pathological' gambling would have been less. ⁱ This is based on a threshold for identifying problems that is generally not recognised in Australia.

Source: AIHW (1998, 1999); *PC National Gambling Survey*; NIDA (1999).