4. DISCUSSION

4.1 Introduction

Some of the major findings reported in Chapter Three are discussed in this section. Discussion includes consideration of these findings in relation to previous research summarised in Chapter Two and an examination of their implications for future research and social policy.

As indicated earlier, this is one of only a few prison studies of gambling and problem gambling conducted to date internationally. A particular feature of the present study is that the same information has been obtained from prisoners in four separate prisons. It was intended that each prison would be treated as a discrete entity and that the overall study design was thus, essentially, a series of case studies or replications. To the extent that similar findings emerged from each prison, this would increase our confidence in their validity and suggest that they might also apply to other prison populations.

Although many of the findings are reported separately for each prison, they are also reported for the study group as a whole. In the multivariate analyses conducted using the total, combined sample, prison effects have been considered alongside those of other variables. These prison effects were generally relatively weak. In addition, with respect to age, ethnicity and most serious present conviction, it was found that the combined study group did not differ significantly from the total New Zealand population of male prisoners serving the first year of their sentence. For these reasons, the total study group findings can be generalised to this population with greater confidence than was anticipated.

While the findings of this study probably have wider applicability than was expected when the survey was designed, a need for caution remains in this regard as it is not known whether the study sample differed from the population on measures that were not considered. Furthermore, as mentioned earlier, extreme caution is necessary with respect to the generalisation of the findings to problem gamblers generally. Problem gamblers who are serving prison sentences are a highly selected sample of the total population of problem gamblers, as are problem gamblers who are receiving counselling or treatment for their problems. Future research will establish the extent to which the findings of the present study also apply to problem gamblers in clinical, community and other settings.

The pooling of data across the four prisons also enabled a number of problem gambling subgroups to be examined to an extent that has not hitherto been possible. While these findings must be regarded as tentative, they provide a starting point for the study of problem gambling as a heterogeneous entity. This approach may have important implications for the investigation of causal factors in the development of pathological and problem gambling. It may also have relevance to prevention and treatment.

As with the survey of New Zealand women prisoners (Abbott and McKenna, 2000), the most notable findings of this study are the very high levels of pre-incarceration gambling participation and problem gambling relative to levels in the general adult population (Abbott & Volberg, 1999; 2000).
4.2 Sociodemographic Characteristics of the Study Group in Comparison to Male Prisoners and General Adult Population

The individual prison and combined response rates were high. With respect to age, ethnicity and most serious present conviction, the total study group (the sample) did not differ significantly from the corresponding sector of the 1997 male prison census population or from the eligible participants at the time the study was conducted. However one of the prisons, Waikeria, did differ significantly with respect to most serious present conviction. Given that there is some relationship between this variable and current (but not lifetime) problem gambling, it is possible that this difference may have had an influence on the study findings for this prison. Overall, however, the combined study group is representative of the relevant population on these three measures. Furthermore, as mentioned above, the combined study group was found to be representative of the total New Zealand population of male prisoners serving the first year of their sentences.

At the time of the 1997 prison census, 56 percent of male sentenced prisoners were serving the first 12 months of their present sentence (Lash, 1998; personal communication). The findings of the present study do not apply to prisoners who had served more than 12 months of their sentence. Recently sentenced prisoners were the focus of investigation because the major interest was in prisoners' gambling participation and problems prior to their imprisonment. Had prisoners who had been in prison for longer periods of time been included, it is probable that inaccuracy of recall would have confounded a number of the measures of particular interest (Abbott and McKenna, 2000; Abbott, Williams & Volberg, 1999).

In comparison to men in the general adult population, the study group is much younger and contains more people of Māori and Pacific Island ethnicity. It also contains significantly more men who are New Zealand born, never married, are separated or divorced and lack formal educational qualifications. Prior to imprisonment, they also were much more likely to be unemployed or outside the paid workforce for other reasons, have low incomes and live in households of five or more. As with women included in the female prisons study (Abbott & McKenna, 2000) and prison populations generally, the majority of men in this study were from socially and economically disadvantaged backgrounds. With the exception of ethnicity, the study group as a whole also differed on these indices from problem gamblers in the New Zealand adult population (Abbott & Volberg, 2000).

4.3 Gambling Participation, Preferences, Expenditure and Reasons for Gambling

A major objective of the present study was to assess the past and current gambling participation of recently incarcerated male prisoners. Across the four prisons, overall lifetime and six months prior to imprisonment participation rates in one or more one forms of gambling were similar to rates for men in the general adult population. However, marked differences were apparent for some forms of gambling. In the case of males in the general population, past six months non-casino gaming machine participation ranks sixth. Seventeen percent report having participated in this form of gambling during the past six months (Abbott & Volberg, 2000). For the total prison study group, non-casino
gaming machine participation ranked second after Lotto. Fifty-two percent reported participation during the six months prior to imprisonment. Relative to males in the general population, high levels of participation were also evident for Instant Kiwi, money bets with friends or workmates, betting on horse or dog races, card games for money, TeleBingo, casino gaming machines, other sports betting, housie and Daily Keno. Lower levels of participation were evident for Lotto and other lotteries or raffles.

Differences between the total study group and men in the general population were even more apparent when weekly or more frequent gambling participation was considered. Two-thirds of the prisoners relative to 43 percent of adult males reported gambling this often on at least one gambling form. Given the focus of the present study on problem gambling, it is of interest that very high regular gambling participation was found for non-casino gaming machines, Instant Kiwi and betting on horse or dog races. These are all continuous forms of gambling and, in the case of track betting, a degree of skill is also involved. These three forms were also those most often mentioned as the ones that were most enjoyed during the six months prior to imprisonment.

High levels of gambling expenditure were also reported prior to imprisonment. The mean reported monthly expenditure for the total study group was NZ$305, nearly six times the mean of NZ$53 for adult males in the general population (Abbott & Volberg, 2000). Relative to males in the general population, particularly high expenditure was evident for gaming machines outside casinos, betting on horse and dog races and other casino games. Somewhat higher expenditure was also found for card games and casino gaming machines. Noting that people generally under-report expenditure on some of these continuous forms of gambling (Abbott & Volberg, 2000) and that most prisoners earned less than NZ$30,000 per annum prior to imprisonment, it would appear that many of the prisoners spend a significant portion of their total income on gambling activities.

Reported gambling session lengths were similar to those for adult males generally. Reasons given for gambling were also generally similar to those of males in the general population. The main difference between the two groups was that only five percent of prisoners relative to 25 percent of adult New Zealanders gave supporting a worthy cause as a reason for gambling.

### 4.4 Gambling Participation in Prison

As mentioned in Abbott and McKenna (2000), this topic appears to have been little studied to date. The extent of gambling in prisons is uncertain and its role in the lives of prisoners is not known. Only two small-scale studies were located in the published literature (Bellringer, 1986; Jones, 1990). These studies suggest that even when gambling is not officially sanctioned, it is part of the subculture of at least some prisons. Card games were found to be particularly popular in these studies and a variety of items in addition to money were used as gambling 'currency'.

It is uncertain, from prisoner responses, how widespread gambling is in New Zealand prisons. As in the women prisons study (Abbott & McKenna, 2000), a wide variety of responses were given to the question "How much do people
gambled in prison?" In the present study, 25 percent of prisoners said they did not know or declined to answer. Fourteen percent said that there was no gambling at all, 26 percent a little, 15 percent a moderate amount and 19 percent a lot. Reasons for this diversity of responses are not readily apparent. However, possible reasons include:

- gambling being officially prohibited and a reluctance to give a response or accurate response to interviewers
- prisons being divided into separate sections and uncertainty thus arising with regard to the extent of gambling outside respondents' own wings or sections
- gambling taking place in small groups in covert or semi-covert situations.

Further research, perhaps involving participant observation and extending questioning to prison staff, could help to clarify this matter.

**While only a quarter of men reported having gambled in prison, most of these people did so weekly or more often.** The forms predominantly engaged in this frequently included playing cards for money, taking money bets with other prisoners and betting on sports events other than horse or dog racing. Relative to participation prior to imprisonment, much shorter typical gambling session lengths were reported in prison and gambling more often involved other prisoners rather than being a solitary activity.

**The most frequently mentioned reasons for gambling in prison included, in descending rank order, something to do/relieves boredom, to win money, socialising, for entertainment/fun and for excitement/challenge.** Something to do and socialising were mentioned much more often in relation to gambling in prison than they were in relation to pre-incarceration gambling. Gambling to win money and for excitement/challenge were mentioned less frequently. These reasons suggest possible benefits of gambling for prisoners. However, only 15 percent of prisoners who reported gambling in prison said that gambling affected their quality of life. In response to the question asking how gambling affected their quality of life, approximately equal numbers of positive and negative effects were mentioned.

Given the lack of access to many forms of gambling in prison and limited disposable income, it was not surprising that considerably lower levels of gambling expenditure were reported in prison. However, approximately a fifth of the men who gambled in prison said that they typically spent NZ$51 or more per month and another fifth reported monthly expenditure of NZ$21-NZ$50. This suggests that gambling is a major item of expenditure for many prisoners who gamble in prison. The present study did not investigate where money to gamble came from or what the consequences of this level of expenditure were for prisoners. This topic could be usefully explored in future studies.

Given that prisoner access to money in prison is limited, it was expected that items other than money would be used as gambling stakes. However, in absolute terms and relative to the findings of the women's prison study (Abbott & McKenna, 2000), the use of other items of value as gambling 'currency' was rarely mentioned.

Although the present study sheds some light on gambling in prison and its role in prisoners' lives, much remains to be discovered. Given the potential sensitivity of this topic, especially in prisons where gambling is officially prohibited, surveys will probably need to be augmented by other approaches including qualitative
methodologies. From the present study, it can be concluded that following imprisonment, the participants' gambling changed considerably on various dimensions and that, overall, they gambled much less than was the case prior to incarceration. However, uncertainty remains with respect to the extent of gambling in New Zealand prisons and whether or not there is significant variation across prisons.

4.5 Substance Use and Hazardous Alcohol Consumption

The Alcohol Use Disorders Identification Test (AUDIT) was used in the present study to investigate drinking patterns. The most commonly employed cut-off score on this instrument to identify hazardous drinking is eight. People scoring eight or more have been shown in follow-up studies to have a very high probability of experiencing alcohol-related social and medical problems (Conigrave et al, 1995).

Using the conventional cut-off score of eight, two-thirds of the male prisoners were classified as hazardous drinkers prior to entering prison. Rates were similar across the four prisons. A recent general population survey, using the same measure and cut-off score, obtained a prevalence of 25 percent in the New Zealand male population aged 15 years and older (Ministry of Health, 1999). The corresponding estimate for males aged 15 to 24 years was 41 percent and for Māori adult males was 38 percent. Thus, it can be concluded that the survey participants display very high rates of hazardous drinking, both in absolute and relative terms. Furthermore, most prisoners obtained AUDIT scores much higher than eight. The mean score was 12. This finding, and examination of responses to individual AUDIT questions, suggests that most of these men in fact had established alcohol problems immediately prior to imprisonment.

The conclusion that two-thirds of the male prisoners were hazardous or problem drinkers is consistent with the findings of the recent national prison psychiatric morbidity survey (Department of Corrections, 1999). The morbidity survey found that the lifetime prevalence of alcohol dependence and abuse was 76 percent for sentenced male prisoners. However, in marked contrast to this finding, only two percent were found to currently have these diagnoses. The Department expressed the view that their current measure was invalid and that the lifetime measure provided a better indicator of alcohol problems. The findings from the present survey, which apply to the period immediately prior to imprisonment, are consistent with the Departmental viewpoint.

High rates of tobacco use were also found in the present study. Seventy-one percent said they smoked cigarettes on a daily basis during the 12 months prior to imprisonment. This compares with 26 percent of men and 43 percent of Māori men in the general population who report smoking this frequently (Ministry of Health, 1999). Seventy-one percent also said they had used marijuana at least once during the 12 months prior to imprisonment. Forty-six percent indicated that this was four or more times a week. Just over a third of prisoners reported that they had used other illicit substances during this period. In comparison to tobacco use, more variation was evident across the prisons with respect to the use of other substances. These rates of substance use are all very high.

Unlike the situation with alcohol, a screening or diagnostic measure was not included in the present study to assess the misuse of or dependence on other drugs. These
disorders were, however, assessed in the Department of Corrections psychiatric morbidity survey (Department of Corrections, 1999). Fifty-six percent of sentenced male prisoners had a lifetime diagnosis of cannabis dependence or abuse. Thirty-seven percent had a lifetime diagnosis of dependence on or abuse of other illicit substances. As with alcohol, the Department considered that their survey's current (past month) diagnoses for these disorders were invalid. To date, no national psychiatric epidemiology survey has been undertaken in New Zealand. The only relevant study was conducted in Christchurch during the mid 1980s (Wells et al, 1989). In this community study, the combined rate for all forms of substance disorder, excluding alcohol, was seven percent. Relative to the findings of the Christchurch survey and general population surveys conducted in other countries, rates of illicit substance use and misuse are very high in New Zealand prisons.

### 4.6 Health and Wellbeing

Only five percent of the prisoners rated their health as poor. Seventy-one percent rated it as good and a further 24 percent as fair. These ratings are somewhat lower than those of general population surveys. Seventy percent indicated that they were generally very happy or somewhat happy during the six months prior to their imprisonment. The remainder said they were very unhappy or somewhat unhappy. Ratings of happiness were substantially lower than ratings for the general adult population and lower than the ratings for current problem gamblers in that population (Abbott & Volberg, 2000). Whereas women prisoners were found to have higher happiness ratings following imprisonment (Abbott & McKenna, 2000) for men, happiness ratings were lower. While somewhat peripheral to the main purpose of the investigation, this is an interesting finding that may warrant further investigation. Prison may provide a respite for many women. It is also possible that the male prison environment is harsher than that pertaining to women.

Twenty-three percent of the male prisoners were assessed as currently suffering from clinically significant levels of non-psychotic mental disorder. This assessment was based on GHQ-12 performance. People identified as ‘cases’ by this measure have scores similar to those of people who seek treatment from mental health centres or outpatient clinics (Goldberg & Williams, 1988). This rate is higher than that typically found in male general population surveys.

Fourteen percent of the men in the present survey were classified on the basis of their PDQ-4+ performance as having antisocial personality disorder. This is considerably lower than the rate of 41 percent obtained in the prison psychiatric morbidity study (Department of Corrections, 1999). However, it is more similar to a rate of seven percent that was obtained in a British study that used diagnostic interviews to establish a diagnosis (Gunn et, 1991). In the Christchurch psychiatric epidemiology study, the male general adult population rate was four percent.

The rate for this disorder in the women’s prison study was 18 percent, also substantially lower than the corresponding rate obtained in the Department of Corrections survey (Abbott & McKenna, 2000). The lower rates arose in the present study because the clinical significance scale was applied. When the PDQ-4+ was scored in the same way as it was in the Department of Corrections survey, the rate was 57 percent. This rate is higher than the Departmental survey estimate of 41 percent. Irrespective of the scoring method used, antisocial personality
disorder is, as expected, far more prevalent in the study group than in the general population. Further research is required to determine which scoring procedure produces estimates that best correspond to those obtained using full diagnostic interviews in the New Zealand setting.

By definition, as mentioned earlier, all of the men assessed as having antisocial personality disorder met the PDQ-4+ criteria for childhood conduct disorder. An additional 58 percent were also assessed as having had a childhood conduct disorder. Thus, in total, 72 percent of the prisoners in the present study were deemed to have had this disorder during childhood. For the women sentenced prisoners, the rate was 65 percent.

These conduct disorder rates are very high relative to the prevalence of this disorder in the general population. However, it is a very common disorder in youth correction populations. Less than half of children with this disorder eventually develop the full adult version, namely antisocial personality disorder (American Psychiatric Association, 1994). As mentioned in Abbott and McKenna (2000), there is some uncertainty about the accuracy of the conduct disorder prevalence rates obtained in the present survey owing to the diagnosis being based on retrospective respondent self reports of events and experiences that took place during childhood.

4.7 Gambling-related Offending

Fifteen percent of inmates surveyed reported that they had committed a crime to obtain money to gamble or to pay gambling debts. This is lower than the rate for women (26%) (Abbott & McKenna, 2000). In the case of males, rates varied somewhat across the four prisons, ranging from ten percent to 25 percent. Burglary was the most frequently mentioned offence committed for this purpose, followed by theft, fraud and robbery including armed robbery. A small number of prisoners mentioned drug offences, car theft, shoplifting, breaking and entering and grievous bodily harm. Women reported a somewhat different pattern of gambling-related offending, with over half mentioning fraud, followed by a variety of property crimes and selling illicit drugs (Abbott & McKenna, 2000). These findings are generally consistent with those of studies of problem gamblers that were cited in Chapter One. In these studies, property crimes and fraud predominated.

Nine percent of the prisoners said that they had been convicted for gambling-related offences, suggesting that many offences of this type go undetected or do not result in convictions. The 31 prisoners who reported gambling-related convictions reported a total of 429 convictions, an average of 14 per prisoner. As with the women's prison study, a small number of prisoners accounted for a disproportionate number of convictions. In the present case, five men indicated that they had each had 40 or more gambling-related convictions. This suggests that if these people were identified in prison and effectively treated, this would appreciably reduce gambling-related offending.

Ten percent of the prisoners reported that they had been in prison for crimes related to gambling. However, wide variation was evident across the four prisons, ranging from two to 22 percent. Over half of these prisoners said that this was often or always the case, suggesting that approximately six percent of prison inmates
serving the first 12 months of their sentence in New Zealand prisons are there exclusively or primarily for gambling-related crimes.

As was the case with women prisoners (Abbott & McKenna, 2000), a substantial number of the male prisoners (22%) said that they had gambled instead of committing a crime. Somewhat less (14%) said they had done so during the six months prior to their imprisonment. However, only 27 percent of the 74 men who reported this behaviour said they engaged in it often or always. As mentioned in the women's prison study, this relationship between gambling and crime does not appear to have been considered previously. This finding raises the interesting possibility that gambling may, for some offenders at least, reduce their rate of offending. While unexpected, upon reflection it could be reasoned that if people commit crimes to finance gambling or to pay gambling debts, they might be less likely to commit such offences if they are winning and not financially stressed. It is worth noting that 45 percent of the men who reported committing crimes to get money to gamble or to pay gambling debts said that they did so often or always. In contrast, only 27 percent of the men who reported gambling instead of committing a crime said that this was often or always the case.

Although it has been proposed that some people gamble instead of committing a crime because they are winning and not in immediate need of money for gambling or other purposes, this relationship may arise for other reasons. If people are involved in gambling they may be distracted from engaging in criminal activities, at least in the short-term. It is also possible that gambling may meet social or psychological needs that are also met by involvement in crime. However, this is speculation. It remains for future research to determine the extent of this phenomenon among offenders, problem gamblers and other people in the general population, to find out what types of gambling and offending are involved, and to discover reasons for its occurrence.

4.8 Problem Gambling

Introduction

Discussion, to this point, has focussed on gambling and gambling-related offending for the study group as a whole. Some similarities and differences between prisons have also been mentioned and comparisons made with findings from the women's prison study. Attention now shifts to the examination of problem gambling and problem gamblers.

Probable Pathological and Problem Gambling Prevalence

Based on their SOGS-R scores, just over a fifth of the study group members (21%) were classified as lifetime probable pathological gamblers and 16 percent were 'current' (i.e. during the six months prior to imprisonment) probable pathological gamblers. Relative to probable pathological gamblers in general population surveys, a high proportion had scores of ten or more. In this respect the probable pathological gamblers more resemble New Zealand and Australian clinical populations (i.e. people receiving treatment for pathological gambling) than probable pathological gamblers identified in community surveys (Abbott & Volberg, 2000). A further ten percent were classified as lifetime problem gamblers and seven percent were classified as 'current' problem gamblers.
It can thus be concluded that just under a third (31%) of the male prisoners experienced, at some stage in their lives, significant gambling-related problems, and that most of these people continued to experience such problems immediately prior to entering prison. These rates are very high relative to the combined lifetime probable pathological and problem gambling prevalence rates for New Zealand men living in the community. The combined lifetime probable pathological gambling-problem gambling point prevalence estimate for New Zealand adult males is four percent. Estimates are higher for Māori (7%) and Pacific Islanders (11%). The two latter estimates are for adults, both male and female. The National Survey sub-sample sizes were not sufficiently large to allow reliable estimates to be determined for male Māori and Pacific Islanders (Abbott & Volberg, 2000).

It is of interest that proportionately more women prisoners (45%) than their male counterparts were classified as lifetime probable pathological and problem gamblers. For the general adult population, only two percent of women were in this category. Until further studies of women prisoners are undertaken in other jurisdictions, it is not known whether this finding has applicability beyond New Zealand.

The lifetime probable pathological gambling prevalence rate of 21 percent for the male prisoners is higher than the mean rate of 14 percent obtained for 18 ‘special populations’ surveys included in Shaffer, Hall and Vander Bilt's (1997) North American meta-analysis. Two prison studies were included in this review of institutional surveys. The SOGS-R lifetime probable pathological gambling prevalence rates for these studies were 26 percent (Templer, Kaiser & Siscoe, 1993) and five percent (Walters, 1997). Two relevant studies have also been undertaken in Australia. One (Jones, 1990) involved the assessment of 62 remandees at the Canning Vale Remand Centre in Western Australia. The lifetime SOGS probable pathological gambling prevalence estimate in this setting was 22 percent, virtually identical to that of the present survey. The second study has not yet been published but is referred to in a recent Productivity Commission (1999) report. In this study, 103 recently admitted inmates were assessed and a third were classified as lifetime probable pathological gamblers. The only other study located was conducted in New Zealand with a sample of 100 convicted offenders serving community (non-custodial) sentences. In this study, the SOGS lifetime probable pathological gambling prevalence was 26 percent (Brown, 1998).

If the four prisons in the present study are considered separately, they double the number of surveys of male prisoners conducted to date internationally. The sample sizes for each of these prisons are comparable to those of previous studies and the response rates are higher. As noted in Chapter Three, their lifetime probable pathological prevalence rates varied somewhat, ranging from 15 to 34 percent. Their combined lifetime probable pathological-problem gambling rates ranged from 26 to 45 percent. It is expected that rates within these ranges would probably be obtained for other New Zealand prisons. Furthermore, given that the combined prison sample resembled the corresponding total New Zealand prison population, it is considered likely that the lifetime probable pathological gambling rate for this population will closely approximate that of the total study group, i.e. 21 percent.

Further research is required to determine whether Brown’s (1998) prevalence estimate of 26 percent applies more generally to the approximately 25,000 New
New Zealanders, predominantly males, who are serving community sentences. Further research is also required to establish the prevalence rate for remand prisoners and prisoners who have served custodial sentences that exceed one year. However, on the basis of information now available, it seems reasonable to conclude that somewhere between 20 and 25 percent of the approximately 30,000 New Zealanders who are in prison or serving community sentences are likely to be lifetime probable pathological gamblers. This corresponds to 6,000 to 7,500 individuals.

Prison populations are not included in general population surveys of problem gambling. One implication of the present findings is that problem gambling estimates for the adult population, especially for males given their over-representation in prisons, would be higher if prisoners were included. In jurisdictions or countries such as the United States that have high incarceration rates, the impact could be considerable. However, it needs to be noted that even in countries with high rates of incarceration, the percentage of the total adult population that resides in prisons is small. There are estimated to be 19,700 to 39,100 adult lifetime probable pathological gamblers in New Zealand (Abbott & Volberg, 2000). If the point prevalence rates for recently sentenced male (21%) and female (33%) prisoners apply to the total prison population, this would add somewhat more than 1,000 to the total population estimate.

While people serving community sentences are part of the population that was surveyed in the National Prevalence Survey, given their young average age and high proportion of Māori and Pacific Islanders, this sector of the population is highly likely to be under-represented among those who were interviewed. It seems reasonable to assume further that the non-interviewed people in this category would contain relatively more probable pathological gamblers. In this situation, subsequent post-stratification would not adequately account for under-representation. Consequently, if the probable pathological gambling prevalence rate for the 25,000 people serving community sentences is in fact somewhere in the vicinity of 25 percent, it is probable that there are more people with serious gambling problems in the population than was estimated from the National Prevalence Survey. It is not possible to quantify the size of this effect that, in theory, could add anywhere from zero to five or six thousand probable pathological gamblers to the total. If the effect is present, it could significantly increase the prevalence estimates for young adult males, Māori and Pacific Islanders.

'Lifetime' versus 'Current' Problem Gambling Prevalence Rates

The findings of the present study and the women's prison study are unusual in that both the lifetime and six months prior to imprisonment ('current') prevalence rates do not differ appreciably. In general population surveys, lifetime probable pathological gambling prevalence estimates typically greatly exceed current (past 6 or 12 months) estimates. The difference between lifetime and current problem gambling estimates is usually even greater (Abbott & Volberg, 1991; 1999; 2000). This difference between lifetime and current prevalence estimates in epidemiological surveys is generally assumed to reflect remission or recovery rates for the disorder in question (Abbott, Williams & Volberg, 1999). The greater difference between lifetime and current rates for problem gambling than for probable pathological gambling is consistent with the expectation that people with less serious gambling problems will have a better prognosis than people with more severe problems. Support for this is
provided by the findings of the NZGS longitudinal study (Abbott, Williams & Volberg, 1999).

Although the NZGS longitudinal study found that people with more serious gambling problems were significantly more likely to continue to experience problems when reassessed seven years later, other findings from this investigation indicate that caution is required when the lifetime-current difference is used as an index of problem reduction. This need for caution arises from the finding that the lifetime SOGS-R measure is not stable over time. More specifically, substantial numbers of people who scored as lifetime probable pathological and problem gamblers in 1991 no longer scored in this range on the lifetime measure when re-assessed seven years later. If the lifetime scale provides a valid assessment of whether or not an individual has ever experienced a significant gambling problem at some time in their lives, scores would not reduce in this way. Lifetime scores could increase, however, if people subsequently develop more serious problems than they had experienced prior to their initial assessment.

Lifetime probable pathological and problem gamblers who had lower SOGS-R lifetime scores when re-assessed after an interval of seven years were more likely to be people who were no longer (currently) experiencing problems. This suggests that these people either do not recall past gambling problems, or that they do recall these problems, but do not report them. Irrespective of the reasons for the reduction in lifetime scores over time, this finding has important implications for problem gambling research and the broader field of psychiatric epidemiology (see Abbott, Williams & Volberg, 1999; Abbott & Volberg, 2000). With regard to the present study, one implication is that the lifetime probable pathological and problem gambling prevalence rates are likely to understate the extent of past gambling problems among prisoners. It also follows that the difference between the prisoner’s lifetime and six months prior to imprisonment rates, although less than that found in general population studies, probably understates the degree of actual problem reduction over time.

A question remains as to why the ‘lifetime’-‘current’ prevalence rate difference was modest in the male and female prison studies relative to the difference found in previous studies. There are a variety of possible answers.

First, the participants in these studies were younger than in general population studies. This means that their gambling problems were more likely to be of recent origin and that they had less time to overcome these problems and to forget them. However, it is also possible that younger problem gamblers are more likely than their older counterparts to overcome their problems, especially if their problems are associated with gaming machines rather than track betting (Abbott, Williams & Volberg, 1999; Abbott & Volberg, 2000). Further research is required to clarify relationships between age, gambling preferences and problem gambling development and change over time.

Second, the ‘current’ measure used in the present study was novel in that it referred to the six month period prior to imprisonment rather than immediately prior to their interview. All prisoners were serving the first 12 months of their sentence. Thus, for a given individual, the period assessed could have terminated anywhere from a few weeks to almost 12 months prior to their interview. In other words, the measure employed was less of a ‘current’ measure than is usually the case.
Third, the prisoners who were classified as lifetime probable pathological gamblers had substantially higher SOGS-R scores than their counterparts in general population studies. As mentioned earlier, it has been found previously that people with more serious gambling problems are less likely to overcome them (Abbott, Williams & Volberg, 1999). In this regard, it is of interest that the prison that contained problem and probable pathological gamblers with the highest mean SOGS-R scores (Paparua) displayed much less difference between lifetime and current rates than did the prison (Rolleston) where this group of inmates had the lowest mean scores. It would be helpful to examine differences between current and lifetime problem gambling rates in other populations of problem gamblers who have serious problems, for example clients of problem gambling counselling and treatment centres. Based on the NZGS findings, it is hypothesised that differences in these groups will more resemble those of problem and probable pathological gamblers in the present study than those of problem gamblers identified in community surveys.

Fourth, the probable pathological and problem gamblers in the prison studies differ from problem gamblers living in the community in a variety of ways additional to their problem severity. For example they have much higher rates of hazardous alcohol usage, child conduct disorder, antisocial personality disorder and other forms of psychopathology. It has been found that some of these characteristics, for example alcohol problems, predict the continuation of gambling problems (Abbott, Williams & Volberg, 1999).

Prospective studies, that follow the same sample of prisoners and other groups of problem gamblers over time, are required to identify more clearly why some subgroups have good long-term outcomes and others have poor outcomes. Studies of this type will also be able to assess more directly the hypothesis that prisoners with gambling problems have a poor prognosis relative to problem gamblers such as those in Abbott, Williams and Volberg’s (1999) community study. It would also be helpful if these studies could assess self-recovery processes and the impact of imprisonment and treatment interventions.

**Respondent Reasons for Problem Gambling Reduction**

Another approach that can be taken to examine problem gambling reduction or cessation over time is to ask people who have reduced or overcome their problems how this occurred. This type of retrospective study, while a poor proxy for prospective investigation, can provide useful information and generate hypotheses that can be assessed using more rigorous methodologies.

In the present study, 50 participants who themselves considered that they had had a gambling problem either some time in the past or shortly before their imprisonment were asked if they had experienced times when they had been free or mostly free of gambling problems for six months or more. Over half (58%) said that they had had at least one period of this type. Men who reported problem free or mostly problem free periods were asked how they had overcome their problems.

Over two-thirds (69%) of the prisoners said they had overcome their gambling problems through their own efforts and over a third (35%) said they had done so because they were in prison. Other means given less frequently included help from friends, help from family and assistance through involvement in GA
or GAMANON. Only one respondent mentioned a professional agency, namely an alcohol or drug treatment centre. Because some people gave more than one response, these people were asked what was the main way they overcame their problems. Through their own efforts was the only or main explanation given by 59 percent of the prisoners. Twenty-one percent mainly attributed this change to being in prison. Fourteen percent considered that help from friends or family was most important. One referred to GA or GAMANON and one gave treatment at an alcohol or drug treatment centre as the main factor.

Although only a relatively small number of women prisoners mentioned periods when their gambling problems ceased or reduced significantly, their own efforts and imprisonment were also the most frequently mentioned way by which this was accomplished. In Abbott, Williams and Volberg’s (1999) study, 12 of the 13 respondents who reported a cessation or reduction in their gambling problems said this was mainly through their own efforts. The remaining respondent mentioned family support.

The main difference between the male and female prison and the longitudinal study findings was the greater importance of external agents, particularly imprisonment, in the prison samples. However, in this context, it should be recalled that relatively few of the lifetime probable pathological and problem gamblers reported being problem free during the six months prior to their imprisonment. This suggests that, in the case of prisoners, these methods do not appear to be particularly effective in producing long term recovery from gambling-related problems. While this may be so, some uncertainty arises from the finding that people who have gambling problems in the past tend to under-report them some years later. As mentioned earlier, this may mean that there is considerably more improvement over time than is suggested by comparing lifetime and current SOGS-R scores. This illustrates one of the important limitations of assessing or inferring change over time from retrospective accounts of past events and underlines the importance of conducting longitudinal studies. It would be helpful if future studies of this type examined self-recovery in this population and the role that imprisonment plays in the development and cessation of problem gambling. It would also be of interest and practical relevance to examine how such 'interventions' compare with involvement in mutual help groups such as GA and counselling.

Problem Gambling and Criminal Offending

As in the women’s prison study, lifetime probable pathological gamblers were responsible for most of the gambling-related offending that was reported in the men’s prison study. It will be recalled that 15 percent of the total sample of male prisoners indicated that they had committed a crime to obtain money to gamble or to pay gambling debts and that ten percent said they had been imprisoned for crimes related to their gambling. Forty-three percent of the lifetime probable pathological and problem gamblers indicated that they had committed a crime to get money to gamble or to pay gambling debts. Only five percent of the non-problem gamblers reported having committed this type of offence. Similarly, whereas 33 percent of the combined problem gambling group said that their gambling had led to problems with the police, only one percent of non-problem gamblers reported likewise. Two percent of the non-problem gamblers had been in prison for charges related to their gambling. However, 27 percent of the problem gamblers said they had.
The majority of problem and probable pathological gamblers (64%) who reported having committed crimes to get money for gambling or to pay gambling debts said that they did so often or always. In this respect they differed from the small number of non-problem gamblers who reported this type of offence. All of the people in this latter group said they did so rarely or sometimes.

While offending by problem gamblers to obtain money for gambling and gambling debts has been studied in a variety of contexts (Abbott & Volberg, 1999), offending of this type by non-problem gamblers does not appear to have been investigated previously. Although offending to obtain money for gambling may be rare within the sector of the population that has not had a custodial prison sentence, because the large majority of the population does not have gambling problems, it could aggregate to account for a significant amount of total gambling-related offending. This is a potentially important matter in the assessment of the overall social and economic costs of gambling. However, this is a topic that people are unlikely to be candid about in general population surveys. Its investigation poses a considerable challenge to researchers.

Two hypotheses were advanced in Chapter Two concerning the relationship between problem gambling and gambling-related offending. One proposed that offending takes place relatively late in the development of problem gambling in a substantial number of problem gamblers who would not otherwise engage in criminal activities. This offending is seen as being motivated by the need to obtain money to finance gambling activities and/or to pay gambling debts and predominantly involves property crimes and fraud. In other words, people involved in this type of offending are problem gamblers first and criminals second. The second hypothesis proposed that gambling-related crimes are part of a more general pattern of offending among people who are engaged in a variety of criminal and other antisocial activities. While their gambling-related offending is also related to the need to obtain money for gambling and gambling debts, it is superimposed on non-gambling-related offending and may include violent and other types of crimes as well as property offences and fraud. In this situation, people engaged in criminal-related offending are criminals first and problem gamblers second.

The link between problem gambling and gambling-related offending in the second situation could arise in various ways. One scenario is that problem gambling and gambling-related offending develop in association with conduct disorder and/or substance misuse or dependence during childhood or adolescence. Another is that problem gambling arises independently of a conduct, antisocial personality or other mental disorder in people who are already engaged in non-gambling-related criminal offending.

As discussed in Abbott and McKenna (2000), the women's prison study and previous research have provided some support for both of these hypotheses in their various forms. In the case of the women's study, however, the great majority of problem gamblers appear to be criminals first and problem gamblers second. While a significant number of the problem gamblers in that study engaged in gambling-related crimes, in addition to other types of offending, many reported engaging exclusively in crimes that were not related to gambling. Few women reported only gambling-related offences or having commenced their offending 'careers' with gambling-related criminal activities.
In the present study, only five percent of the lifetime problem and probable pathological gamblers and seven percent of the ‘current’ problem and probable pathological gamblers reported that their early offending related to gambling. Nine percent in both of these categories reported that their first conviction was gambling-related. These findings are consistent with the hypothesis that the great majority of problem gamblers in the prison population are criminals first and problem gamblers second. However, it is also apparent that a small minority of the problem gamblers committed gambling-related crimes from the outset. It is likely that these men were problem gamblers before they engaged in gambling-related criminal activities given that two-thirds said their early offending was undertaken to pay gambling debts and the remainder said it was to maintain their patterns of gambling. Prospective research is required to assess this assumption and identify factors that precipitate gambling-related offending on the part of problem gamblers.

Men who acknowledged that they had had a gambling problem at some time were asked when they first noticed that they had a problem. Only fourteen percent said that this occurred before the age of 16 years. However, 71 percent of lifetime problem gamblers reported that they engaged in criminal activities before the age of 16 and 90 percent met the diagnostic criteria for childhood conduct disorder prior to this age. Significantly less non-problem gamblers (65%) had this diagnosis. Seventy-eight percent of lifetime problem and probable pathological gamblers who had a history of conduct disorder reported that they first started offending before the age of 16 years and 68 percent said they first started gambling during this period. Only 18 percent of the small number of problem gamblers who did not have this diagnosis reported offending prior to the age of 16 and only 27 percent said they started gambling at this time. These findings are also consistent with the hypothesis that the large majority of problem gamblers engage in criminal and other antisocial behaviour prior to the development of their problem gambling and gambling-related offending. However, again longitudinal research is required to provide more definitive information.

With respect to most serious offence ever convicted for, there was no significant difference between problem and non-problem gamblers in any of the four prisons or in the combined sample. This applied to comparisons involving both lifetime and six months prior to imprisonment problem and probable pathological gamblers. Similar percentages in both the problem gambling and non-problem gambling groups committed crimes involving violence, property offences, drug offences and fraud. This finding is inconsistent with the hypothesis that problem gamblers are predominantly involved in property crimes and fraud and that they rarely commit violent offences.

When the prisoners’ most serious present conviction was considered, a somewhat different pattern emerged. With respect to their most serious present conviction, in two of the four prisons the problem gamblers (both lifetime and six months prior to imprisonment) and non-problem gamblers differed significantly. In both cases problem gamblers reported significantly more property convictions. In one of these prisons they reported less drug and traffic offences. For the total study group, there was also a statistically significant difference between problem and non-problem gamblers. In the case of six months prior to imprisonment problem gamblers, 32 percent reported that their most serious present conviction was for a property offence. This compared with 15 percent for the non-problem gamblers. The former
group also differed in that they reported lower rates of conviction for drug and traffic offences. These findings are consistent with the hypothesis that problem gamblers are more likely to commit property-related offences.

While there appears to be some support for a relationship between 'current' gambling problems and present property offending, it needs to be noted that the most frequently mentioned present conviction for past six months problem gamblers remained violence against persons. Forty-two percent of the six months prior to imprisonment problem gamblers and 40 percent of the lifetime problem gamblers mentioned a violent criminal activity. Furthermore, these rates for violent convictions do not differ significantly from those of the non-problem gamblers. From this it can be concluded that problem gamblers, especially those with problems at the time of their imprisonment, are more likely than non-problem gamblers to be currently serving a sentence for a property crime. They are no less likely than other prisoners, however, to be serving a sentence for a violent offence.

The findings mentioned in the previous paragraph provide partial support for the notion that problem gamblers are more inclined than other prisoners to be involved in property crimes. In this respect they differ from the findings of the women's prison study that found no support for this relationship. However, the findings did not apply in two of the four male prisons and they do not provide corroboration for the hypothesis that problem gamblers are predominantly or exclusively engaged in property crimes. At this juncture it should be noted that the data being discussed relate to most serious conviction, not to offending per se. It also needs to be appreciated that we are considering a highly atypical group of problem gamblers, namely the small subgroup that has received a custodial sentence. In Chapter Two, reference was made to a number of studies that have found that problem gamblers in non-prison settings do predominantly commit non-violent property offences.

The male prison study findings that are under discussion here also suggest that, following the development of problem gambling, some problem gamblers' offending profiles shift to include more property-related crime. This possibility is also raised by the finding that whereas 67 percent of the past six months prior to imprisonment problem gamblers indicated that their most serious conviction ever was for violence against persons, only 42 percent gave this as their most serious present conviction. The difference between these same two measures was less for non-problem gamblers. Additional information, of some relevance to this discussion, specifically relates to gambling-related offending.

With respect to gambling-related offending, the study participants were asked to indicate the crimes that they had ever carried out to gamble or to pay gambling debts. Although 43 percent of the combined lifetime problem/probable pathological gamblers reported committing a gambling-related crime, when this group was divided into three categories in terms of problem gambling severity, significant differences were evident. Seventy-six percent of prisoners with SOGS-R scores of ten or more reported that they had committed a crime to get money for gambling or to pay gambling debts. Smaller numbers of prisoners with scores of five to nine (46%) and three or four (9%) indicated that they had committed crimes for this purpose. Problem gamblers with high SOGS-R scores also reported carrying out many more gambling-related crimes and indicated that much larger sums of money were involved. Forty-eight percent of prisoners with SOGS-R scores of ten or more said they had lost over NZ$1,000 gambling in one day. Corresponding percentages for
those with scores of five to nine and three or four were 20 percent and nine percent respectively.

The findings referred to in the preceding paragraph are consistent with the hypothesis that gambling-related offending is related to more serious gambling problems and that this association arises primarily from the need to finance escalating patterns of problematic gambling and gambling debts. However, only ten percent of the prisoners in the most serious (SOGS-R score of 10 or more) reported that their early offending was related to gambling and only slightly more (17%) said their first conviction was related to gambling. This implies that even in the case of the problem gamblers with very severe problems, the large majority engaged in non-gambling-related offending prior to the development of their problem gambling disorder.

Although problem and non-problem gamblers were found to be similar with respect to their most serious offences and convictions, which were predominantly violent in nature, offences that were committed specifically to obtain money for gambling or to pay gambling debts very rarely involved violence. Burglary was mentioned most often, followed by theft, robbery and fraud. These findings provide corroboration for the hypothesis that gambling-related crimes primarily involve money or property.

The finding, mentioned earlier, that nearly two-thirds of probable pathological and problem gamblers who engaged in gambling-related crime said that they did so often or always, suggests that for these people, this type of offending displaces or largely displaces other types of offending.

To conclude this section, with respect to the two hypotheses under consideration, there is support for the view that most problem gamblers in the present study were involved in a variety of criminal activities prior to the development of their gambling problems. Ninety percent of these men also had a diagnosis of childhood personality disorder and their early criminal offending was predominantly an expression of this disorder rather than a consequence of problem gambling. Conduct disorder and, in some cases subsequent antisocial personality disorder, may also have played a role in the later development of problem gambling. Following the development of problem gambling, most continued to engage exclusively in non-gambling related criminal activities. However, a subgroup emerged that engaged in gambling-related crimes predominantly or exclusively and had very low rates of violent offending. A further subgroup engaged in both gambling and non-gambling related crimes. The extent of involvement in gambling-related offending was strongly associated with the severity of problem gambling and, probably, gambling-related debts. All of these men can probably be regarded as criminals first and problem gamblers second.

In addition to the problem gamblers described in the previous paragraph, there was a small group of problem gamblers that appear to have developed gambling problems prior to the onset of offending. These people committed gambling-related crimes from the outset and can probably be described as gamblers first and criminals second. This pattern of findings is very similar to that pertaining to women prisoners (Abbott & McKenna, 2000). In both cases, it must be cautioned that these descriptions are based on retrospective accounts that cannot be independently verified and may be prone to distortions of recall and reporting. As mentioned at various points, longitudinal research commencing during at least mid childhood or
early adolescence is required to address these hypotheses in a more rigorous manner.

**Risk Factors for Problem Gambling**

**Introduction**

Epidemiology is primarily concerned with establishing the distribution of particular disorders within populations or sectors of a population and identifying risk factors for these disorders (Abbott, 1994). The identification of risk factors is important in that they may be implicated in the causation of the disorder under investigation. Risk factors and high-risk subgroups within the population also provide potential targets for public health education and prevention programmes. Factors associated with low risk of the disorder are also important in identifying causal agents and mechanisms that promote resistance. Traditionally, a variety of demographic and social variables are considered in this regard. Agents or factors that theory or prior research indicates may be associated with the disorder of interest are also considered. In the case of pathological or problem gambling, as discussed in Chapter Two, participation in various forms of gambling have been examined in this regard and some forms, including gaming machines and track betting, have been shown to be strongly linked to problem gambling.

Prevalence of gambling disorders in parents and other family members and relatives is also often considered in epidemiological studies and may point to potential genetic, environmental or social learning determinants of disorders. Co-morbidity is another consideration. Co-morbidity refers to the presence of other disorders in association with the disorder that is the focus of investigation. This type of information can also help to pinpoint causal factors, including common factors that might, to varying degrees, underlie the associated disorders. Alcohol problems and antisocial personality disorder number among the mental disorders that have been examined in relation to problem gambling (Abbott & Volberg, 1999; 2000).

Many physical and mental disorders have multiple risk factors. Because these risk factors are often, themselves, inter-related, it is difficult to tease out their particular effects and determine their relative importance. Multivariate analysis can assist in clarifying the nature and relative strength of such relationships and, where appropriate, was employed in this study. Inferring causation in this situation is an even more challenging undertaking. It requires an accumulation of information from multiple sources and the use of research designs that are more powerful than cross sectional surveys of the type reported in the present study. Longitudinal, case control, experimental and quasi-experimental designs are all important in this regard. As indicated in Chapter Two, very few such studies have been undertaken in relation to problem gambling. Further discussion of this issue is provided elsewhere (Abbott & Volberg, 1999; Abbott, Williams & Volberg, 1999).

In the present study, a number of different blocks of variables were examined to determine whether they contained risk factors for problem gambling. In these analyses, lifetime problem and probable pathological gamblers were grouped together and compared with non-problem gamblers. In this study, there was a very high association between six months prior to imprisonment and lifetime SOGS-R performance. Because the two SOGS-R scales were measuring essentially the same underlying construct, presentation of the findings was confined to one of the
SOGS-R measures. The lifetime scale was chosen because it is part of the standard presentation of the SOGS-R and has been used in many other studies in New Zealand and elsewhere. The six months prior to imprisonment scale is unique and was developed for the New Zealand prison studies. Use of the lifetime scale also increased the number of problem gamblers somewhat, thus enhancing the statistical power of the analyses.

**Sociodemographic Risk Factors**

In phase one of the National Prevalence Study (Abbott & Volberg, 2000), a number of sociodemographic risk factors for lifetime and current problem gambling were identified. In the present study, only prisoners who were unemployed prior to imprisonment and younger prisoners (under the age of 36) were found to have significantly higher rates of problem gambling. These two attributes were found to be strong risk factors for problem gambling in the 1991 New Zealand national survey (Abbott & Volberg, 1991; 1994; 1996). However, they did not emerge as risk factors in the 1999 National Prevalence Survey (Abbott & Volberg, 2000). This raises the possibility that although not currently risk factors for the general adult population, unemployment and youth may remain risk factors for some sections of the population, including prisoners.

In the present study, reasons for the associations between these two risk factors and problem gambling are unclear. In the case of unemployment it is not known whether this state preceded or followed the development of problem gambling. It could be a cause, an effect, or both. In the case of age, it is possible that the relationship arose because the prevalence of problem gambling has increased in recent years among younger offenders but has not increased or has increased less among older offenders. This would be a reasonable assumption if the 'lifetime' SOGS-R scale was a valid measure of lifetime problem gambling. However, as found in Abbott, Williams and Volberg (1999), 'lifetime' problem gamblers who were re-assessed using this measure seven years after their initial assessment received significantly lower scores. This was especially the case for people who no longer reported (currently) experiencing gambling problems. If this applies in the present study, the association could instead have arisen because a number of the older prisoners overcame their earlier gambling problems and either forgot or failed to report them. However, as discussed earlier, there were other indications that gambling problems evidenced greater continuity over time among prisoners than among problem gamblers studied in non-custodial and non-clinical settings. Discussion of these two sociodemographic risk factors again highlights the importance of longitudinal research to help clarify the nature of relationships between risk factors and problem gambling.

**Gambling Participation Risk Factors**

In epidemiological studies, there is a particular interest in examining relationships between disorders and exposure to agents that are considered to be important in their causation. In the case of communicable diseases, the agent is a biological organism such as a bacterium or virus. When problem gambling is approached from a public health perspective, the agent is participation in gambling activities.

In the present study, in analyses involving the total study group, lifetime and past six months participation in all forms of gambling considered had statistically significant associations with problem gambling. However, playing card games for money,
betting on horse or dog races and playing non-casino or casino gaming machines had the strongest associations with problem gambling when the effects of participating in other forms of gambling were controlled statistically in multiple logistic regression analyses. Past six months preferences for non-casino gaming machines and betting on horse or dog races were also strongly associated with problem gambling.

These gambling participation and preference findings are generally consistent with those of phase one of the National Prevalence Survey (Abbott & Volberg, 2000). They are also consistent with the large body of international research showing strong links between problem gambling and regular participation in gambling activities that are either continuous in nature and/or involve a degree of skill. The findings are also similar to those of the women's prison study with the exception of the relative importance of housie. This form of gambling, which is more common among women than men in New Zealand, appears to be more strongly linked to problem gambling among women prisoners.

As discussed in relation to sociodemographic risk factors, it is difficult in cross sectional surveys to determine the temporal sequence of events with precision. In the case of gambling participation, it is possible that the prisoners engaged in some forms of gambling, including those most strongly associated with problem gambling, after they had developed gambling problems. The same could apply to gambling preferences.

It will be recalled that the prisoners were asked if there was ever a time in their lives when the amount of money they gambled made them nervous. Problem gamblers were much more likely to report such times than the non-problem gamblers. They were also asked what form of gambling they were engaged in at the time when they first became nervous. The forms most frequently mentioned, in all cases by approximately a quarter of the men, were betting on horse and dog races, playing non-casino gaming machines and playing card games for money. These findings suggest that participation in these forms preceded the development of problem gambling, resulted in some loss of control over gambling and may have contributed to the development of more serious gambling problems.

In addition to asking questions about their participation in and preference for particular forms of gambling, the prisoners were also asked how old they were when they first gambled, how much time they usually spent gambling, who they usually gambled with and what was the largest amount of money they had ever lost gambling in one day. Most of these questions may be regarded as providing measures of aspects of exposure to the agent, gambling.

For the study group as a whole, problem gamblers reported commencing gambling at a significantly younger age than non-problem gamblers. This was also the case for the New Zealand general adult population (Abbott & Volberg, 2000). However, in contrast to the situation with the general population where over a third of the problem gamblers did not commence gambling until they were adults, in the present study only four percent of the participants were in this category.

Relative to non-problem gamblers, the problem gamblers also reported spending much longer periods of time gambling during typical gambling sessions and reported
much larger gambling losses. Although these differences were also evident in the
general adult population, they were not as great as they are in the present study.
This difference between the two studies is in keeping with the finding that the male
prison sample contained substantially more problem gamblers with very high SOGS-
R scores.

The prisoners with gambling problems were also similar to problem gamblers in the
general adult population in that they significantly more often reported gambling alone
rather than with other people. While not an ‘exposure’ factor per se, gambling alone
might place regular gamblers at greater risk by removing the presence of people who
help to moderate gambling excesses. However, it is also possible that the presence
of people, in some circumstances, may contribute to gambling problems and likely
that a number of people who develop problems elect to gamble alone. The role that
the presence of friends, family members and work-mates have on gambling and
problem gambling does not appear to have been examined in any depth. It is a topic
that could be expected to have some relevance to understanding the development
and maintenance of problem gambling.

As in the National Prevalence Survey and other NZGS studies, the prisoners
were asked if one or both of their parents had ever had a gambling problem. In
all of these studies, having a parent with a gambling problem was a significant
risk factor for problem gambling. Similar findings have been obtained in a number
of studies conducted in other countries (Abbott & Volberg, 1999). It is of interest that
the male lifetime probable pathological gamblers most often mentioned that they
believed that their father had a gambling problem (31% reported this) whereas their
female counterparts most often mentioned their mothers (33%). However, 21
percent of the male probable pathological gamblers also reported that their mother
had a problem and 29 percent of the women reported that their father had. These
findings suggest that the like sexed parent may have a more important influence on
the development of problem gambling than the parent of the opposite sex does.
Similarly, the male prisoners more often reported that they had a brother with
gambling problems (16%) than they did sisters (7%) whereas, for female prisoners,
the situation was reversed (sisters 20%; brothers 15%).

Abbott and McKenna’s (2000, p.119) comment in the women’s prison study is
applicable here:

The association of problem gambling with parental gambling and problem
gambling requires further study to disentangle the causal mechanisms
involved. There may be both genetic and social learning mechanisms
involved, as well as links arising through cross-generational transmission of
physical and sexual abuse and various forms of substance misuse and
dependence. The findings of the present study suggest that extending such
investigation to other family members and relatives may assist in clarifying
these mechanisms and causal pathways. Future studies of these
relationships will also need to give consideration to, and control for, the
effects of other factors such as ethnicity and various indices of social
inequality and privation.

Co-morbidity

A number of health and mental health measures were examined to assess the extent
to which they were associated with problem gambling. These measures included
substance use prior to imprisonment, non-psychotic mental disorder, hazardous alcohol consumption, antisocial personality disorder and childhood conduct disorder.

Problem gamblers reported drinking alcohol and smoking cigarettes significantly more often than non-problem gamblers prior to imprisonment. They also used illicit drugs other than cannabis more frequently. As discussed earlier, over two-thirds of the problem gamblers engaged in hazardous alcohol consumption immediately prior to imprisonment. Although non-problem gamblers also had a high rate of hazardous alcohol consumption, the proportion of people with low AUDIT scores in this group was higher than that of the problem gamblers, suggesting that their problems were less severe and that fewer were alcohol dependent or suffered from alcohol misuse disorder. Similarly, although the majority of non-problem gamblers had a diagnosis of childhood conduct disorder, significantly more problem gamblers had this disorder. As discussed earlier, significantly more also had the adult version of conduct disorder, namely antisocial personality disorder.

Although conduct disorder was associated with problem gambling in the women's prison study, hazardous alcohol consumption and antisocial personality disorder were not. Neither were tobacco, alcohol or illicit drug use. However, when each of the male prisons was considered separately, there were instances where these relationships were not statistically significant, suggesting that the failure to obtain significant differences in the women's study may have been at least in part attributable to the small sample size and lack of statistical power. The male problem gamblers also differed from their female counterparts in that, for the study group as a whole, they did not currently have higher rates of psychological disturbance as indexed by the GHQ-12.

The female prison co-morbidity findings appear to be consistent with the hypothesis proposed by Lesieur and Blume (1991) that many women problem gamblers engage in gambling to reduce negative emotions associated with traumatic events in childhood and with more recent trauma and ongoing stressful life circumstances. The male findings, on the other hand, suggest a stronger association with conduct disorder and more persistent antisocial personality traits, as well as with substance misuse. Further research is required to establish whether or not common factors underlie these co-morbid conditions or whether they arise independently.

In addition to the categorical 'caseness' measures that were derived from the psychological screening tests, performance on these tests was also considered as a continuous variable. The SOGS-R and GHQ-12 have previously been scored this way, based on the assumption that the underlying conditions assessed by these measures may be regarded as ranging in severity as well as as discrete clinical entities (Abbott & Volberg, 1999; 2000; Kearns, Smith & Abbott, 1992). However, this appears to be a novel way of treating PDQ-4+ performance. Correlations between these various measures were then calculated and the resulting tables of inter-correlations examined.

As mentioned in Chapter Three, very high correlations between the three major problem gambling measures (the lifetime and past 6 months prior to imprisonment SOGS-R and Fisher Screen) were evident. This indicates that they are predominantly assessing a common underlying construct and that one measure may be used as a proxy for the others. This was the main reason why the main results relating to problem gambling were not presented separately for each of these measures. This finding also questions the necessity, expressed by some authorities
in the field, to replace the SOGS and SOGS-R with new measures based on DSM-IV diagnostic criteria (Abbott & Volberg, 1999).

Consistent with the findings recently discussed, higher levels of problem gambling were found to have a moderately strong relationship with higher PDQ-4+ (antisocial personality disorder) scores and weak, but statistically significant, relationships with higher levels of hazardous drinking. Interestingly, in contrast to the women's prison findings, higher levels of problem gambling were significantly, but weakly, associated with lower levels of current (GHQ-12 defined) psychological disturbance.

**Multivariate Analysis of Predictors of Problem Gambling**

The various risk factors and co-morbid conditions that had some association with problem gambling were considered together in a multivariate logistic regression analysis to determine which were the strongest independent predictors of problem gambling when the effects of the other predictor variables were controlled statistically.

**In this analysis, gambling participation variables, specifically usual time spent gambling and the largest amount of money lost gambling in a single day, had by far the largest odds ratios.** Having played casino gaming machines was the only specific form of gambling participation that emerged as a significant, albeit much weaker, predictor. The failure of other forms of gambling participation shown to be very strongly associated with problem gambling was likely to be a consequence of their strong link with the two dominant predictors (time spent gambling and largest amount of money lost). Had these two variables been suppressed in the multivariate analysis, continuous forms of gambling such as gaming machine participation and track betting would possibly have emerged as the dominant predictors.

Having a childhood history of conduct disorder was also a strong predictor and the only health or mental health measure to emerge in this analysis. So too was having ever felt nervous about the amount of money spent gambling. However, as mentioned earlier, this variable may have been more appropriately considered as part of the problem gambling construct and not included in the analysis. Parental problem gambling was also confirmed as a moderately strong predictor when the influence of other factors with stronger associations with problem gambling were taken into account.

While highlighting a number of the more important risk factors and correlates of problem gambling, it is important to appreciate that the results of this analysis are heavily dependent on the particular mix of variables included. Had additional measures been added, or some of those that were included removed, a somewhat different pattern of results would have resulted. Interaction terms, made up of composites of predictor variables, were not incorporated in the analysis. It is likely that some hybrid variables of this type will be particularly strong predictors of problem gambling. However, there are potentially thousands of such variables that could be considered and their identification and analysis was beyond the scope of this study. As more relevant information accumulates and stronger theories are developed, it should be possible to be more systematic and focussed in examining variables of this type.
Problem Gambling Subgroups

When the prison samples were combined, the total number of problem gamblers was sufficiently large to enable a variety of subgroups to be examined separately. This is one of the advantages of studying problem gambling in prison settings - its high prevalence makes it easier to locate substantial numbers of people with the disorder. The great majority of general population surveys of problem gambling have involved samples from one to two thousand people (Abbott & Volberg, 1999). Given the low prevalence of this disorder in the general population, the number of problem gamblers identified has been too small to meaningfully examine and compare subgroups of problem gamblers. Even in the large New Zealand and Swedish surveys (Abbott & Volberg, 1991; 1996; 2000; Rönnberg, Volberg & Abbott et al, 1998), there have been severe constraints on this type of subgroup analysis. The main disadvantage of using prison samples is that problem gamblers in custodial settings differ in a number of respects from problem gamblers living in the general community. This means that findings from prison studies cannot be readily generalised to the total population of problem gamblers.

Findings from a number of problem gambler subgroup comparisons were outlined in the preceding chapter. These subgroup findings are discussed further here.

Māori and Non-Māori

In the 1991 and 1999 New Zealand national surveys, (Abbott & Volberg, 1996; 2000), Māori were found to be a group that was at high risk for problem gambling. Māori were also found to have lower rates of self recovery or problem remission over time than non-Māori (Abbott, Williams & Volberg, 1999). Given that over half of the problem gamblers are Māori in the present study and that little is known about problem gambling among Māori, this group was selected for further examination.

In what appears to be the only published study on Māori problem gambling, Volberg and Abbott (1997) identified a number of similarities between gambling and problem gambling in this group and Native American tribes studied in the United States. These indigenous populations both have relatively recent histories of colonisation, forced dispossession of their land, and economic and social marginalisation (Bodley, 1999). In more recent times, these people have continued to be disadvantaged relative to the general population in terms of education, income, housing and other socioeconomic indices. This disadvantage is reflected in higher rates of mortality and morbidity, including alcohol and other forms of substance misuse and dependence (Ministry of Health, 1999; Volberg & Abbott, 1997). A number of these shared characteristics have also been shown to be risk factors for problem gambling (Abbott & Volberg, 1996; 1999; 2000).

High Māori problem gambling prevalence rates are partly explained by sociodemographic factors known to be linked to problem gambling. However, a number of studies have shown that Māori ethnicity retains a strong association with problem gambling when the effects of these risk factors are controlled statistically (Abbott & Volberg, 1991; 1996; 2000; Abbott, Williams & Volberg, 1999; Volberg & Abbott, 1994). Furthermore, Māori remained a high risk group in the 1999 National Prevalence Survey, even though a number of the risk factors found to be important in the 1991 national survey (e.g. youth and unemployment) were no longer evident. These findings indicate that there remain additional, as yet unidentified, factors associated with Māori ethnicity that generate higher problem gambling prevalence.
and problem gambling chronicity. It has been suggested that Māori, and perhaps other Polynesian groups, may in part be at high risk because they appear to number among the relatively few populations studied that did not have a pre-colonial history of gambling as it is defined in this study (Abbott & Volberg, 1999). This is reflected in their languages not including words for gambling.

While Māori generally have higher problem gambling prevalence rates than non-Māori, it will be recalled that Māori and non-Māori problem gambling rates were similar in both the present study and in the women's prison study.

Again, in both the present and women's prison studies, Māori and non-Māori problem gamblers did not differ significantly with respect to any of the sociodemographic variables considered. As a consequence, it is unlikely that differences between the Māori and non-Māori problem gambler groups in the present study are attributable to sociodemographic variables. With regard to the various gambling participation measures, which include the strongest predictors of problem gambling for the total study group, there were few significant differences between the two groups. The only differences were that Māori problem gamblers had more often played cards for money at some time and less often reported having played Lotto or bet on horse or dog races during the six months prior to imprisonment.

Māori problem gamblers more often reported that they had a parent with a gambling problem (50% versus 30% for non-Māori). The only other differences between these two problem gambling groups concerned their patterns of offending. As in the women's prison study, Māori reported much higher rates of violent offending, both in terms of their most serious offence ever committed and with respect to their current sentence (Abbott & McKenna, 2000). They were much less likely to report that their most serious offence was for a property-related crime and, relative to non-Māori problem gamblers, few (14% versus 42%) were serving a sentence for a property crime at the time of their interview.

The findings for Māori women prisoners differed in a number of respects from those for Māori males in the present study. Māori women who were problem gamblers were much more likely than their non-Māori counterparts to have had a diagnosis of childhood conduct disorder. They also reported higher rates and levels of alcohol consumption prior to imprisonment and had substantially higher rates of hazardous alcohol consumption. It will be of interest to see whether or not these gender differences for Māori also apply to Māori problem gamblers in community and clinical settings. They caution against assuming that the findings for Māori men apply to Māori women or vice versa.

**Hazardous Alcohol Consumption**

In the present study, but not in the women's prison study, problem gamblers had significantly higher rates of hazardous drinking than non-problem gamblers. As mentioned earlier, a number of previous studies of problem gamblers have found a strong association between problem gambling and alcohol problems. Again, as mentioned earlier, although this association has been reported on a number of occasions, little is known about problem gamblers with co-morbid alcohol problems and whether or not they differ from problem gamblers without alcohol problems.
In the women's prison study, 22 of the 23 problem gamblers with concurrent hazardous drinking patterns were Māori. In the present study, there was no difference between Māori and non-Māori problem gamblers in this respect, and just over three-quarters of both groups were AUDIT cases. One implication of this high degree of co-morbidity is the necessity for prison-based problem gambling education and treatment programmes to be multi-modal, covering at least gambling and alcohol and, ideally, extending to other addictive substances.

In the present study, as expected, problem gamblers with hazardous alcohol consumption also reported very high frequencies and quantities of alcohol use. Seventy percent said that they drank ten or more drinks on a typical day drinking. None of the other problem gamblers reported this level of daily consumption. The former group also significantly more often reported having used marijuana during the 12 months prior to imprisonment. However, the two groups did not differ with respect to tobacco or illicit drug use. Neither did they differ in terms of conduct disorder, antisocial personality disorder or non-psychotic mental disorder.

With regard to gambling participation, the most notable difference between these two problem gambling groups concerned lifetime and recent non-casino gaming machine participation. The group with co-morbid hazardous drinking had significantly higher levels of participation. They were also much less likely to report long typical gambling sessions and having lost large sums in a day's gambling. The significance of these findings is unclear. Perhaps they frequently combine their heavy drinking sessions with gaming machine play and time and money spent on drinking competes with and helps to constrain gambling losses. However, this is speculative. It might be argued that excessive alcohol consumption reduces control over gambling behaviour and helps to facilitate gambling losses. This is a topic that warrants further investigation using both interviews and naturalistic observation.

Perhaps the most notable difference between these two groups, in both this and the women's prison study, was that the problem gambling group with hazardous drinking patterns significantly more often reported serving a current sentence for violent offending. As mentioned in the women's prison study, because the problem gamblers with hazardous drinking patterns did not differ in this respect from non-problem gamblers with hazardous drinking patterns, this suggests that an interaction effect might be present. Specifically, hazardous drinking in combination with problem gambling is associated with violent crime whereas neither hazardous drinking nor problem gambling is associated with violent crime in their own right. However, it is also possible that this association may be spurious, arising through associations with other variables that are linked to these measures. In the present study, Māori ethnicity and antisocial personality are most unlikely to be implicated because the two problem gambling groups did not differ with respect to these variables. However, other unidentified variables might play a role in this regard. Sophisticated multivariate modelling is required to establish whether or not such effects are operating.

Other factors may be identified that account, or partially account, for the apparent interaction effect discussed in the previous paragraph. However, there are reasons why excessive alcohol intake and problem gambling might operate synergistically to increase the probability of violent crime among problem gamblers, a group that
generally has a low probability of violent offending. Problem gambling typically gives rise to the need to obtain large sums of money. As personal resources become depleted, a significant number of problem gamblers resort to crime, typically non-violent property crime, to finance gambling and gambling debts. The heavy consumption of alcohol is associated with acute and chronic neuropsychological and behavioural changes, including reduced impulse control and an increased propensity for violent behaviour (Abbott, 1984). In the case of problem gamblers with increasingly severe problems and pressure to obtain large sums of money to gamble or pay debts, heavy alcohol consumption and diminished impulse control may increase the probability that criminal offending for this and other purposes will include violence.

**Conduct Disorder and Antisocial Personality Disorder**

In Chapter Three, problem gamblers were shown to have significantly higher rates of childhood conduct disorder and adult antisocial personality disorder than non-problem gamblers. The association of antisocial personality disorder with pathological gambling has been well documented in clinical samples and its presence at one time was deemed to preclude a diagnosis of pathological gambling (Abbott & Volberg, 1999; American Psychiatric Association, 1980). Since 1987, there has been provision to have both diagnoses concurrently (American Psychiatric Association, 1987). Although these two disorders occur together relatively often in clinical settings and, as has been demonstrated in the present study, in prison settings, until now problem gamblers with this disorder do not appear to have been compared with other problem gamblers. Similarly, studies were not located in the published literature that examined problem gamblers with the precursor to adult personality disorder, namely childhood conduct disorder.

With respect to the sociodemographic and gambling-related measures, it was evident in Chapter Three that there were few significant differences between the 90 percent of the problem gamblers who had a history of conduct disorder and the ten percent who did not. The former group was found to be much less likely to have a secondary school qualification and, they were much more likely to report having commenced gambling, committed their first criminal offence and to have been convicted prior to the age of 16 years. In contrast, over half of the non-conduct disordered prisoners reported first offending after the age of 20 years compared to only three percent of those in the conduct disorder group. These are similar to the findings of the women’s prison study. In the present study, conduct disordered male prisoners also had higher lifetime conviction rates for violent offending and lower rates for drug-related offences.

Although the two problem gambler groups (with and without conduct disorder) were similar with respect to their general patterns of gambling-related offending, the conduct disordered problem gamblers very rarely indicated that their early offending was related to gambling or that their first conviction was gambling-related. In contrast, 18 percent of the non-conduct disordered prisoners said their early offending was gambling-related and over a quarter (27%) said their first conviction was gambling related.

From the foregoing, it appears that the majority of conduct disordered problem gamblers started gambling during childhood as a part of a more general pattern of risk-taking, antisocial and criminal behaviour. Their early criminal offending was
rarely gambling-related and, as discussed earlier, it is highly likely that their gambling problems emerged after they had established a pattern of predominantly or exclusively non-gambling-related offending. The non-conduct disordered group, on the other hand, started offending later in life and contained a significant minority whose first offending was gambling-related. This minority of problem gamblers more closely fits the conventional problem gambler offending profile whereby gambling-related offending emerges following the genesis and progression of gambling problems. However, even in this group, the majority of problem gamblers appear to have commenced offending prior to developing gambling problems and report that their early offending was not gambling-related.

A third of the problem gamblers with conduct disorder were found to progress to the adult version of this disorder, antisocial personality disorder. Apart from the problem gamblers with this disorder having significantly higher levels of past and recent participation in a variety of forms of continuous and non-continuous gambling, few differences were evident between the two groups. In comparison to problem gamblers without antisocial personality disorder, those with the disorder reported significantly lower levels of happiness prior to imprisonment and higher rates of non-psychotic psychological disorder at the time of their interview. These findings are of interest given that people with antisocial personality disorder typically display a lack of guilt and remorse in relation to the effects of their behaviour on victims and other people in their lives (American Psychiatric Association, 1994).

In the present study neither the problem gamblers with conduct disorder nor those with antisocial personality disorder indicated that their parents had higher rates of problem gambling than problem gamblers without these disorders. In this regard, they differ markedly from problem gamblers in the women's prison study. In the case of women, there was a very strong relationship between reports of parental problem gambling and these two disorders. This relationship was so strong that Abbott and McKenna (2000) suggested that genetic factors and/or social learning in their families of origin appear to have a disproportionate impact on the development of problem gamblers with conduct and antisocial personality disorder. While this possibility warrants further study, the findings of the present study imply that if this is the case, it may apply to females but not to males. These findings again underline the importance of considering gender effects and differences in studies of problem gambling.

**Gambling-related Offending**

Gambling-related offending is believed to be so widespread among problem gamblers that, since 1994, it has been included in the diagnostic criteria for pathological gambling (American Psychiatric Association, 1994). It is, therefore, of interest that in the present study the majority of problem gamblers did not report engaging in gambling-related criminal activities. As reported in Chapter Two, this is also the case in general population studies of problem gambling. However, in treatment or mutual help settings, the majority of problem gamblers do acknowledge this type of offending. Given these previous findings, it was expected that an even higher percentage would report such offences in prison studies.

Problem gamblers who reported having got into trouble with the law because of their gambling were compared with other problem gamblers to see whether or not factors could be identified that might help to explain why some problem gamblers commit crimes to finance their gambling when others do not.
As indicated in Chapter Three, the two groups differed significantly in a number of ways. The major difference, in terms of gambling participation, was the much higher level of participation on the part of the ‘offending’ group in betting on horse and dog races. This group also reported lower levels of participation in Lotto and other lotteries and raffles, the most popular forms of non-continuous gambling. The ‘offending’ group was also characterised by longer usual gambling sessions and larger gambling losses. They also reported more often having a parent with gambling problems and usually gambling alone. Although they did not differ from other problem gamblers with respect to their most serious offence ever convicted for involving violence, they were much more likely to report that their most serious conviction and most serious present conviction were for a property offence or fraud. They were also more likely to say that their early offending and first convictions were gambling-related.

This pattern of findings is consistent with the view that this group of problem gamblers had more serious gambling problems that resulted in higher gambling losses. The findings suggest that track betting may be more strongly implicated in this regard than other forms of gambling. In contrast to other problem gamblers in the present study, their offending was more frequently directed towards obtaining money for gambling and to pay gambling-related debts.

Gambling in Prison

While only 40 percent of problem gamblers reported that they gambled in prison, they were significantly more likely to report this behaviour than non-problem gamblers. Of the problem gamblers, those who gambled in prison reported much higher pre-incarceration gambling participation rates in a variety of continuous forms of gambling, including some with an element of skill involved. They also reported higher household incomes, having commenced gambling at a younger age, and both more often getting into trouble with the law because of gambling and committing crimes to get money for gambling or to pay gambling debts. This group also reported higher alcohol consumption and use of illicit drugs prior to imprisonment. These findings suggest that the men who gambled in prison had more serious and, perhaps, more long-standing gambling problems than those who did not. In addition, these men may have had more money to gamble with. There is also the possibility that their gambling in prison may have partly served as a substitute for alcohol and illicit drugs. Further research is required to assess these possibilities.

It would also be useful if future studies examined how problem gamblers, perhaps especially those with more serious problems, cope with the cessation of gambling during their time in prison. Similarly, future investigation could examine the long-term impact of such periods of abstinence and compare the post-prison problem gambling and social adjustment of problem gamblers who gambled in prison with those who did not. It is possible that gambling cessation in prison may assist in reducing or over-coming gambling problems. It would be of interest to assess this possibility and to compare the long-term outcomes of different interventions with people convicted of gambling-related offences. Questions that might be considered in this regard include:

- Do those who receive a custodial sentence have a better or worse long-term outcome than those who receive a non-custodial sentence?
• Does the addition of professional treatment and/or participation in mutual help groups to these dispositions make a difference?

Self-recognition of Gambling Problems

Self-recognition of gambling problems is widely assumed to be an important step on the pathway to initiating changes in one's own life to reduce problems, participation in mutual help groups such as GA, or seeking professional assistance. Consequently, the 45 percent of problem gamblers who indicated that they considered that they had a gambling problem were compared with the slightly larger number that did not, to see what factors, if any, differentiated these two groups.

Like the group that gambled in prison, men who said that they had a gambling problem reported higher levels of participation in some continuous gambling forms. They differed in that the forms involved were mainly restricted to casino gaming machines and non-casino gaming machines. They were also more likely to report having a preference for non-casino gaming machines.

In comparison with the problem gamblers who did not indicate that they had a gambling problem, those that did significantly more often reported losing over NZ$1,000 in a single day's gambling and gambling alone. Significantly more men in this group also said that their first conviction related to gambling and that they had engaged in a wide range of gambling-related criminal activities. For example, nearly half said they had been in prison because of charges related to their gambling. Only 12 percent of the other problem gamblers reported likewise. These findings suggest that self-recognition of gambling problems may be associated with more severe gambling problems and increased contact with the criminal justice system in conjunction with gambling-related offending. Further research is required to clarify the nature of these relationships and how they arise. It would also be useful to know whether or not prisoners who acknowledge that they have a gambling problem are more likely to take up treatment if it is offered and, if they engage in treatment, have better outcomes.

These two groups of problem gamblers also differed in that the problem self-recognition group contained significantly more men who were employed prior to imprisonment and who did not report having a religion or who were Roman Catholics. The group that did not acknowledge having problems contained significantly more 'other Christians', i.e. people who were not members of mainstream denominations. The reasons for these associations are uncertain given that these two groups did not differ with respect to other sociodemographic variables. In the National Prevalence Survey, 'other Christians' had low gambling participation and problem gambling prevalence rates. These churches also generally have a less tolerant attitude towards gambling (Abbott & Volberg, 1999). Perhaps this inhibits problem recognition among church members. Again this requires further investigation in prison and other populations.

Given the assumption that self-recognition of problems is an important factor in help seeking and treatment outcome, it is surprising that the topic appears to have been little investigated in relation to problem gambling. This study provides some relevant information and generates hypotheses that could be pursued in more focussed studies.
Parental Gambling Problems

The last two groups compared were the problem gamblers who indicated that one or both of their parents had a gambling problem and the problem gamblers who did not. Interest in this comparison stemmed from the possibility that these groups might differ in other ways and that different factors might be involved with the development of their gambling problems. The two groups differed on only two sociodemographic measures that do not have obvious relevance to problem gambling or its development. The parental problem group also more often reported having first been convicted at an early age and had significantly more contact with the criminal justice system as a consequence of their gambling problems. No other differences were found and it is unclear how those that were identified related to parental gambling problems or the development of problem gambling.

The Development of Problem Gambling

The topic of problem gambling development has been discussed at various places throughout this report. Mention has been made, for example, of the strong association between reports of parental gambling problems and the study participants’ problem gambling. This appears to be gender-linked, with the men more influenced by their fathers’ problem gambling than their mothers’. In the case of women, they appear to be more influenced by their mothers’ problem gambling (Abbott & McKenna, 2000). Other familial relationships were also mentioned. It would appear timely to examine these data along with the findings from other studies to see if the patterns identified to date are consistent with what would be expected from different models of genetic transmission. This matter, however, is beyond the scope of the present study and will require input from human geneticists.

As indicated earlier, the association between parental problem gambling and problem gambling in their adult children could also come about in ways other than through biological inheritance. Social learning in the family of origin is one of the alternative explanations. While this has not been addressed explicitly in the present study, study participants were asked about gambling in the families they grew up in. As indicated in Chapter Three, probable pathological gamblers more often reported that people in their family of origin gambled a lot. Men with less severe gambling problems also reported somewhat higher rates. Men who reported that they did not gamble or gambled only occasionally and regular non-continuous gamblers more often reported that people in their family of origin did not gamble at all. These findings are consistent with the hypothesis that early socialisation plays a role in subsequent gambling involvement and problem gambling development. However, as cautioned elsewhere in this report, retrospective accounts of childhood experience and behaviour are a poor substitute for the direct investigation during childhood and subsequent prospective study. Gambling research of this type is still in its infancy.

The study participants were also asked how much their friends gamble. While the majority of probable pathological gamblers and prisoners generally said that their friends did not gamble a lot, probable pathological gamblers much more often reported that their friends did gamble a lot. On the other hand non-gamblers and infrequent gamblers, as well as regular non-continuous gamblers, more often reported that their friends did not gamble at all. From these associations, it is not
possible to deduce whether people selected friends who had gambling patterns similar to their own or whether their gambling patterns were significantly influenced by people in their existing social networks. Both seem to be likely possibilities.

Earlier, it was mentioned that problem gamblers were much more likely than other prisoners to report gambling alone. It would be of interest, in future studies, to see whether or not problem gamblers who gamble alone are those whose friends do not gamble a lot. The role of family members, friends and work-mates in the development and maintenance of gambling and problem gambling is another topic that warrants further investigation.

Discussion has already addressed the finding that, relative to members of the general population (Abbott & Volberg, 2000) the men in the present study, on average, commenced gambling at a very young age and that this was associated with the subsequent development of problem gambling. Links with childhood conduct disorder were also discussed.

Relative to men in the general population (Abbott & Volberg, 2000), a higher percentage of the male prisoners reported that the amount of money they gambled had at some time made them nervous and that this had occurred in conjunction with participation in a small number of continuous gambling forms. Seventy percent of the men who had this experience first did so before the age of 21 years. This finding is consistent with other indications that the men who developed gambling problems in this study generally did so at a younger age than is typical of problem gamblers in the general population. One of these other indicators of early problem development was the finding that half of the men who acknowledged that they had or had had a gambling problem (who were all probable pathological or problem gamblers) said they first noticed this before the age of 21 years.

**Help Seeking**

The prisoners who acknowledged having a gambling problem were asked if they had ever wanted help to stop gambling. Approximately three-quarters indicated that they had and almost all of these men were lifetime probable pathological gamblers. The two exceptions were problem gamblers.

Although a significant number of men who recognised that they had a gambling problem said that they had at some time wanted help, less than a third reported that they had sought help. Alcohol or drug treatment centres and mutual help groups (GA and GAMANON) were most often mentioned in this regard, followed by mental health professionals, family and friends, and general medical practitioners. Only one prisoner mentioned a specialist problem gambling service, namely the national gambling helpline.

High levels of alcohol, cannabis and other illicit drug use were evident among problem gamblers in the prison sample. In addition, as mentioned previously, very high rates of lifetime substance dependence and abuse were found in the Department of Corrections psychiatric morbidity study (Department of Corrections, 1999). Consequently, the use of alcohol and drug treatment centres was probably appropriate for the men who sought this type of assistance. However, it is not known how well these services address problem gambling specifically. It is known that while many general medical practitioners consider that they have a role in the treatment of problem gambling, most do not believe that they are appropriately equipped to
provide effective help (Sullivan, et al, 1998). It is surprising, given the large number of men who annually seek help from specialist problem gambling telephone and counselling services, that they were not approached more often. This indicates that more specific outreach from these services to prisoners and people within the wider corrections population should be considered.

The large majority of lifetime problem gamblers also had significant gambling problems at the time they entered prison. This applied both to those who recognised that they had problems and those who did not. The majority of those who acknowledged that they had problems also said that they wanted to stop gambling but did not feel able to. However, of the men who recognised that they had problems, less than a quarter reported that they had sought help for their gambling problems during their present imprisonment. Of the men who sought help, only a quarter said that it had been obtained. Of the large group of problem gamblers, only three men were in this category. Two indicated that the help received had been helpful; one indicated that it had not.

From the foregoing, it is apparent that very little help of any kind was accessed by problem gamblers while they are in prison, even though many were aware that they had problems and a significant minority reported that they had sought help to overcome their gambling problems. As noted earlier, the majority of men in this category have serious gambling problems.

In the case of men who do not recognise that they have a gambling problem, some form of awareness raising and motivational counselling may be required prior to therapy. As many of these men have less severe problems, services for this group may need to include interventions that focus on ways to reduce and control gambling and prevent future problem escalation.

Given that many men with gambling problems, both severe and moderate, have co-morbid psychiatric conditions including alcohol and other forms of substance misuse, it may be appropriate to embed problem gambling interventions within more comprehensive addictive behaviours programmes that also include generic coping skills. However, given the very high prevalence of problem gambling in the prison population, it is important that this disorder is also specifically and appropriately addressed and not lost within a generic programme. It is also possible that many men with serious gambling problems might prefer to receive treatment specific to this disorder and could be resistant to participation in a generic or substance abuse programme. Research is required to clarify these matters.

The case for problem gambling interventions in prison settings is strengthened by the finding that problem gambling contributes to criminal offending, especially to property crimes, and that many of the men who reported past periods of problem gambling remission indicated that their offending stopped or reduced. Apart from assisting prisoners with their general rehabilitation, effective intervention for problem gambling could be expected to have a significant impact on crime reduction.
The Effects of Other People's Gambling

In comparison with men surveyed in the general population (Abbott & Volberg, 1999; 2000), the male prisoners reported very high rates of gambling problems among family members and other people who are important in their lives. Over a half of the men said someone in their life had a gambling problem. In the case of women prisoners, over three-quarters indicated that someone in their life had a gambling problem (Abbott & McKenna, 2000). While problem gamblers more often reported that this was the case in both studies, such reports were also common among prisoners who did not, themselves, have gambling problems. Problem gambling in other people was shown in Chapter Three to have a variety of adverse impacts on the prisoners’ lives.

As mentioned in the women’s prison study, the extent and impact of other people’s problem gambling on prisoners is such that consideration should be given to including ways of dealing with the effects of the gambling problems of these people within prison education and rehabilitation programmes. In many cases the prisoners most affected by other peoples' problem gambling will themselves have significant gambling problems. In a significant number of cases, however, they will not.

4.9 Conclusion

This study is important because, when considered as four separate surveys or case studies, it doubles the number of published prison studies of problem gambling conducted internationally and provides information on a number of matters that have been little investigated previously. When the separate prison samples were combined, the sample was sufficiently large to enable many aspects of problem gambling to be examined that have not previously been studied. While providing information that is interesting and relevant to criminal justice and health policymaking, this aspect of the investigation also raises a number of questions that provide direction for future research.

It was not intended that the findings from this study would be able to be generalised to the national population of sentenced male prisoners who are serving the first year of their sentences. However, given that the combined sample did not differ significantly from this population on a number of relevant variables, it is concluded that the findings probably do have wider applicability. This said, it cannot be assumed that they apply to men who are serving non-custodial sentences or who have been in prison for more than 12 months. It is also important to appreciate that the prisoners included in this study differ from problem gamblers living in the community or who present for counselling in a variety of ways. While some of the findings may be applicable to other problem gamblers, this will require further research to either confirm or refute.

The primary purpose of this study was to study gambling and problem gambling among recently sentenced male prisoners per se. It is expected that the findings will be of particular interest to scholars in the fields of gambling studies and criminology and it is hoped that they will be useful to policymakers and others working in the criminal justice and health sectors. The authors hope that the findings may also bring some benefit to prison inmates in New Zealand and elsewhere.
REFERENCES


