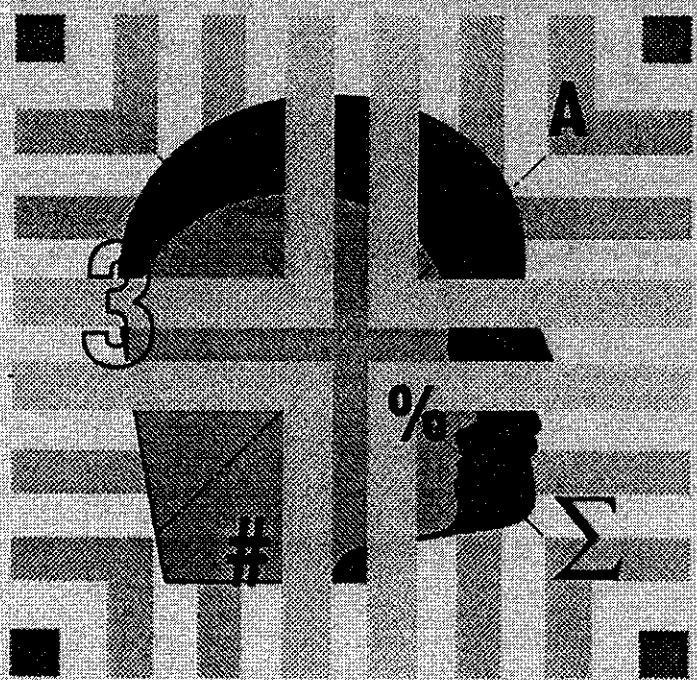
GAMBLING AND PROBLEM GAMBLING IN NEW ZEALAND



A Report on Phase One of the National Survey

Dr Max Abbott
Dr Rachel Volberg

Data Collection and Analysis by National Research Bureau Ltd

December 1991

DEPARTMENT OF INTERNAL AFFAIRS
TE TARI TAIWHENUA

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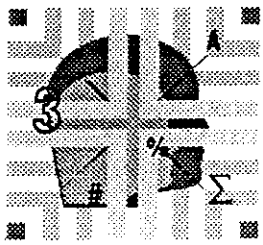

Principal Researchers:
Dr Max Abbott
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Data Collection and Analysis was
conducted by National Research Bureau

NRB Researchers collaborated with the
principal researchers in this presentation
of the findings of the survey

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We thank each of the more than 4,000 people who were interviewed in this survey for giving their time and contributing to our knowledge of gambling and gambling related problems in New Zealand. We also acknowledge the National Research Bureau s Research team, especially Project Supervisor, Debra Hall, and its nationwide network of interviewers.

Our appreciation is given to the many other people who assisted the project in various ways including members of the Survey Consultative Committee and its chairperson. Professor A.J.W. Taylor, Victoria University of Wellington, Department of Internal Affairs and Department of Statistics staff, seven anonymous reviewers of the first draft of the research proposal, and Belinda Hitchman.

Finally we acknowledge the interest and support of the Minister of Internal Affairs, the Hon. Graeme Lee.

PROJECT MANAGEMENT

This survey was conducted for the Department of Internal Affairs. The project team included the following teams and organisations:

- Max Abbott, Ph.D., Dip Clin.Psych., MNZCCPsych.(Project Manager & Principal Investigator) Auckland Institute of Technology
- Rachel Volberg PH.D. (Co-Principal Investigator), Policy Research Associates. New York State
- Mark Dickerson. Ph.D . (Consultant) University of Western Sydney. Macarthur
- Mental Health Foundation of New Zealand (Administering body) Parnell, Auckland
- National Research Bureau Ltd (data collection and analysis), Mt Eden, Auckland
- Consultative Committee appointed by the Secretary for Internal Affairs and chaired by Professor A.J W. Taylor, Victoria University of Wellington
- Department of Statistics (independent audit of methodology)

FOREWORD

In 1990 the Department of Internal Affairs conducted a review of gambling. The Review Committee made a number of recommendations, including one that research be undertaken to establish the incidence of problem gambling in New Zealand, and that such research be funded by the New Zealand Lottery Grants Board.

In response to this recommendation, the Minister of Internal Affairs the Hon Graeme Lee agreed to fund a research project into problem gambling. As a result an Auckland psychologist, Dr Max Abbott, was contracted by the Department of Internal Affairs to head a project looking at problem gambling. This was to be the first such project undertaken anywhere in the world. An American gambling researcher, Dr Rachel Vollberg, was employed as co-principal investigator on the project. Professor Mark Dickerson, an Australian psychologist with a background in gambling research, was employed as a consultant.

This report reviews the results of Phase One of the survey, which investigates the incidence of problem and pathological gambling among a sample of over 4,000 New Zealanders. Because the study was modelled on studies undertaken in several states in the United States, comparisons are made with the American studies. The results indicate that New Zealand appears to have a high incidence of problem and pathological gambling.

The results of Phase Two of the study will be available in 1992. Phase Two will involve interviews with 200 of the Phase One respondents so that the characteristics, such as attitudes towards gambling, of those with and without gambling problems can be compared. There will also be a chance to provide confirmation of some of the Phase One results.

This report will provide valuable information to anyone with an interest in gambling, whether from a policy, treatment, participant or industry viewpoint. The extremely interesting results obtained show that the survey was well worth undertaking.

R Perry Cameron
Secretary for Internal Affairs

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AIMS

The general aim of the survey reported here and in the following Phase Two report, was to determine the extent and nature of excessive gambling in New Zealand. The more specific aims addressed in the Phase One report include:

1. Determining the lifetime and current prevalence rates of problem and pathological gambling in the adult New Zealand population.

2. Identifying demographic, social and other factors which discriminate between pathological gamblers and other people.

3. Comparing the current participation of the adult population in various types of gambling and the prevalence of problem and pathological gambling with the findings of North American prevalence surveys.

4. Providing a baseline to enable assessment of future changes in the prevalence of problem and pathological gambling, and gambling activities generally, within the adult New Zealand population.

5. Providing information to assist public policy decisions about the legislation and promotion of new forms of gambling, as well as the provision of services to problem and pathological gamblers.

* * * * *

SUMMARY

The Survey

- This report outlines the major findings of Phase One of a 1991 survey of gambling involvement, and the extent and nature of gambling-related problems, in the New Zealand adult population. It is the first truly national survey of problem and pathological gambling to have been conducted anywhere in the world. The report presents information on a topic previously little investigated in this country, and provides a baseline to enable monitoring of future changes.

- People were interviewed by telephone and asked about their involvement in and expenditure on gambling activities. The interview also included a modified version of the South Oaks Gambling Screen, a 20-item scale derived from the diagnostic criteria for pathological gambling disorder published in the American Psychiatric Association's DSM-III. 4053 people aged 18 years or older were interviewed, selected at random from telephone-'owning' households throughout New Zealand.

- Phase Two of the survey, which involves in-depth, face-to-face interviews with a subsample of 200 respondents selected from the Phase One sample, will be reported separately.

Gambling Involvement

- Over 95% of the sample said that they had participated in at least one type of gambling activity at some time. Lotto had the widest following, with 87% having bought a ticket and 42% indicating that they buy tickets once a week or more. Other common forms of gambling activity, in order of participation, included Instant Kiwi (13% buy once a week or more), lotteries/raffles (7% buy once a week or more), betting on horse/dog races (4%), gaming machines (3%), and bets with friends or workmates (2%).

- Lotto was also the form of gambling activity people reported that they enjoyed participating in most, followed by horse/dog racing, Instant Kiwi, gaming machines, lotteries/raffles, card games and betting on events.

- 57% of people said they take part in gambling activities to win money. Other reasons given, in descending order of frequency, included fun or entertainment, to support worthy causes, to socialise or because of social pressure, and for the excitement or challenge.

- The average monthly expenditure was $37 per person. This gives an estimated annual expenditure for the country of almost $970 million. Of this, Lotto takes the largest share (35%), followed by horse/dog racing (16%), card games (15%), Instant Kiwi (9%), lotteries/raffles (7%), gaming machines (5%), and betting on events (5%).

- While gambling was commonplace throughout the population, there were significant differences between social and demographic groups with regard to gambling involvement, reasons for gambling and expenditure.

- Men, especially young men, were more likely to engage in gambling activities on a regular basis. Men spent twice as much per month as women. Although more men than women regularly buy Lotto tickets, over one half (53%) of female gambling expenditure goes on this form of gambling compared to 28% for men. Men were much more likely than women to bet on horses/dogs, play gambling machines and play cards for money.

- Older people were over-represented among regular Lotto players and horse/dog betters, although people aged 18-24 years spent proportionately more on horses and dogs than any group other than those aged 65 years and over.

- The following forms of gambling were more frequently engaged in on a regular basis by younger people: gaming machines, betting with friends or workmates, cards and dice.

- Pacific Islanders had very high levels of gambling participation relative to other ethnic groups in Lotto (54% were weekly players), Instant Kiwi (22%) and horse/dog races (19%).

- Unemployed people were over-represented among regular Instant Kiwi players (18% play weekly), horse/dog betters (7%) and gaming machine participants (7%).

- The majority of young people said that they gambled to win money. The desire to win as the main stated motivation decreased with age. Younger people were also more likely to say that they gambled for fun or entertainment, or that they did so for excitement or challenge. Men too more frequently reported gambling for fun, excitement or challenge, and were less likely to say that they did so to support a worthy cause. Men also more often said they gambled for social reasons including pressure from peers or family.

- Although Lotto was the most frequently engaged in form of gambling and attracted considerably more expenditure than any other type of gambling activity, the average spent per month was significantly higher for some other types (for people who regularly engaged in them), namely horses/dogs, dice, Housie and cards. While some people spent very large sums of money on gambling on a regular basis, particularly on the types just listed, most spent modest amounts.

- Both involvement in and expenditure on gambling activities have increased considerably in New Zealand since the introduction of new forms of legalised gambling from 1987 onwards. Similar trends have occurred in a number of other countries, including the U.S.A. In comparison to the United States, a significantly larger percentage of adults in this country report having participated in gambling activities at some time in their lives. In the United States, similar socio-demographic groups are over-represented among regular gamblers.

Problem and Pathological Gambling

- Although most people who gamble do not experience major problems associated with their gambling, clinical and anecdotal experience in this country, and epidemiological surveys in other countries, indicate that a significant minority do experience gambling-related problems that result in considerable suffering and disruption or damage to personal, family and vocational pursuits. Problems vary in severity and duration. At the most severe end of the spectrum, problem gamblers are judged to be suffering from a serious form of psychiatric disorder, pathological gambling.

- Based on responses to the modified South Oaks Gambling Screen used in the survey, the **lifetime prevalence of pathological gambling** was found to be 2.7% (±0.5%). In other words, between 47,000 and 69,000 people in New Zealand are estimated to have, at some time, suffered from this form of psychiatric disorder.

- A further 4.25% (±0.6%) reported that they had at some time experienced difficulties with gambling to the extent that they can be classified as **problem gamblers**. This amounts to another 78,000 to 105,000 people. A larger percentage still acknowledged experiencing one or two problems at some time. These respondents were not included in the problem gambling category, but probably do represent a less severely compromised subgroup on the continuum of people experiencing no problems associated with their gambling through to pathological gambling.

- **Current (six month) prevalence** rates were 1.2% (±0.3%) for **pathological gamblers** and 2.1% (±0.4%) for **problem gamblers**. Figures for the adult population are 19,000 to 32,000 and 36,000 to 54,000 respectively. The total number of people in the population currently suffering from problem or pathological gambling is thus estimated to fall between 55,000 and 86,000.

- 45% of respondents who had at some time been pathological gamblers were currently classified as such, and a further 20% were currently problem gamblers, leaving 35% who were in the current no-problem group, presumably having recovered through some form of treatment or remission. 42% of people who had at some time been problem gamblers were currently in the same category.

- The above prevalence estimates should be treated with caution until Phase Two of the present study has been completed. Phase Two includes further validation of the South Oaks Gambling Screen.

- The factors found to be most strongly associated with problem and pathological gambling were ethnicity, age, gender, employment status, and a history of parental gambling problems.

- Exceedingly high rates of problem and pathological gambling were found among Pacific Island (approximately 6 times the NZ European/Pakeha rate) and Maori (over 3 times the Pakeha rate) respondents. High prevalence persisted when gender, age, employment status and family income were controlled statistically.

- Two-thirds of all the current pathological gamblers and just under half of the problem gamblers were aged 18-29 years, suggesting a significant increase in problems among young New Zealanders in recent years.

- Men were more likely than women to have experienced gambling problems in the past and during the 6 months immediately prior to the survey. One in ten men had had a gambling problem at some time. Eight out of ten of the current pathological gamblers were men.

- One in five people in the unemployed group had had a gambling problem at some time, a very large over-representation of both problem and pathological gamblers.

- Lower occupational and educational status were both associated with higher rates of gambling problems, although the relationships were weaker than for the previous socio demographic variables.

- Overall, although problem and pathological gamblers were found to be heterogeneous groups coming from all walks of life, they were greatly over-represented among those socio-demographic categories that are also the major consumers of gambling activities, namely non-white, young, males, unemployed, lower socio-economic people. Almost identical patterns have been found in recent North American surveys.

- Auckland had slightly higher rates of problem and pathological gambling than other parts of the country. This was largely a consequence of its ethnic composition.

- Although most people with gambling problems did not report having a parental history of such problems, of those whose parents did have a problem, 17% (±6%) exhibited some degree of gambling problem themselves.

- Pathological and, to a somewhat lesser extent, problem gamblers were found regularly to participate in a much wider variety of gambling activities than people without problems and to spend more money on average on all forms of gambling. However, regular participation in and expenditure on continuous[1] rather than non-continuous gambling activities was significantly higher among the problem and pathological groups. Most favoured continuous forms of gambling among these two groups included betting on horses/dogs, dice and card games, gaming machines and Instant Kiwi. Just over one quarter of problem gamblers' gambling expenditure went on horse or dog racing. The figure rose to a little under one half for pathological gamblers. Gaming machines were the only other major form of gambling to take a large percentage of problem and pathological gamblers' expenditure. These findings are broadly similar to the results of North American studies mentioned above.

- Current pathological gamblers were more likely than the no-problem and problem groups to cite excitement and challenge, and to win money as reasons why they participated in gambling activities. They were significantly less likely to say they gambled to socialise or support worthy causes.

1 "Continuous" gambling activities are those where winnings can be immediately "re-invested" within the same "session", e g. gaming machines. Lotto and raffle tickets are examples of "non-continuous" forms of gambling.

- Although almost 7% of the sample was classified as having at some stage been a problem or pathological gambler, only 2% of respondents said they felt that they had had a problem with gambling. Less than 1% acknowledged having a problem during the past six months. The current combined problem/pathological prevalence rate was 3.3%, yet less than 1% recognised that they had a problem. Thus it would seem that most people with gambling problems are not aware of having, or do not acknowledge to others that they have, a problem.

- The probable and pathological lifetime prevalence rates obtained are very high relative to previous surveys that have used the South Oaks Gambling Screen. Indeed, the New Zealand current (6 month) prevalence rates are similar to lifetime prevalence rates from Volberg's surveys in five U.S. states where a wide range of legal gambling opportunities have been available for many years. They are significantly higher than Iowa, where opportunities for legalised wagering are new.

- Current prevalence rates for problem and pathological gambling are not yet available for other countries. The New Zealand lifetime estimates, however, are almost double the rates for most U.S.A. states surveyed to date. This finding, while it indicates that gambling-related problems are widespread in New Zealand, does not necessarily mean that the New Zealand prevalence is higher than parts of the United States. Respondents in the North American surveys may have been more reluctant to disclose problems to interviewers, either because of cultural differences or the way in which the SOGS was modified and administered in the present study.

- Most people who at some stage in their lives met the criteria for pathological gambling were found to be currently experiencing problems. This suggests chronicity for the majority. However, a significant minority shifted from the pathological to non-problem category. These shifts will be further investigated in Phase Two of the survey.

- People under the age of 30 years were over-represented among problem and pathological gamblers in the recent North American surveys. This group was much more strongly implicated in the New Zealand survey, with one half of the problem and pathological gamblers under the age of 30.

- The numbers of people within most of the high risk categories will probably increase during the 1990s. This in turn can be expected to result in higher prevalence rates in the future.

- The findings of the survey provide information that would be helpful in developing and targetting prevention, early intervention and treatment programmes for problem and pathological gamblers. They also provide a baseline to allow monitoring of future changes in gambling participation and prevalence rates.

* * * * *

INTRODUCTION

Background

The range of legal forms of gambling in New Zealand has expanded considerably during the past few years with the introduction of Lotto, gaming machines and Instant Kiwi Public involvement in gambling has increased, and expenditure on major gambling activities almost doubled during the three year period from 1988 to 1990. (Department of Internal Affairs, 1990). Total 1990 expenditure on five major gambling products was estimated to be $557.1 million.

Given the substantial changes in the gambling environment, and considering that New Zealand's gambling legislation had been in existence for more than 13 years, Government called for a review of gambling. A Review Committee was appointed in 1989 and produced its report in late 1990. It summarised previous research on gambling within New Zealand, as well as submissions made to it by various organisations and individuals (Department of Internal Affairs, 1990).

The Department of Health, in its submission to the Review, stated that *"in recent years, pathological gambling has become recognised as a mental disorder with serious economic and social consequences. Insofar as it reflects the inability of an individual to control his or her behaviour, it is not unlike alcohol or drug addiction"* (p.15). The report echoed the view of American researcher, Durand Jacobs that public understanding of gambling problems is where our understanding of alcoholism was 40 or 50 years ago. (Jacobs, 1986)

Both the Review and the earlier Report of the Committee of Enquiry into Casinos (1989) found a lack of objective information on problem gambling, especially in New Zealand. The Review report stated that lack of information did not mean that there is no problem in New Zealand, but rather that there is uncertainty as to its scale.

On the basis of submissions received and literature reviewed, the Committee came to the conclusion that *"problem gambling does exist in New Zealand, that it can create financial and social crises in families, and that it could be worsened by the proliferation of gambling opportunities"* (p.20).

The Review Committee report included the results of 1985 and 1990 Department of Internal Affairs-AGB McNair Ltd national surveys of public participation in and attitudes towards gambling. Although these surveys did not include measures of gambling-related problems, they did ask respondents whether or not they thought there was a problem in New Zealand with people being heavily involved in gambling and whether they thought there should be special help and support available to assist people to give up their excessive gambling. The majority of 1990 respondents (71%) agreed or strongly agreed with the statement that there was a problem, and this figure was an increase from 66% in 1985. Similarly, the proportion of respondents who believed that people who want to give up gambling should be given special help, increased from 86% to 91% over the same period.

The Review Committee itself recommended that there be significant changes to legislation governing gambling, and it also recommended that research be undertaken to establish the prevalence of problem gambling in New Zealand.

On 28 May 1991 the Secretary for Internal Affairs, with the approval of the Minister, entered into a contract with Dr Max Abbott, the Project Director, to conduct a national prevalence survey of problem and pathological gambling.

The present report outlines the major findings of phase one of the survey, based on interviews with over 4000 people It covers gambling involvement and the extent and nature of gambling-related problems in the New Zealand adult population It is the first national survey on this topic to have been undertaken in New Zealand, and the first nationally representative study to have been conducted anywhere in the world. Apart from providing information on matters previously little investigated in this country, it gives a baseline to enable the monitoring of future changes, e.g. to assess the impact of major new forms of gambling such as casinos. Phase Two of the survey, which will be reported separately, involves in-depth interviews with 200 respondents, including problem and probable pathological gamblers, selected from the Phase One national sample. It will provide a validity and reliability check on the Phase One prevalence estimates, and is expected to yield significant information regarding the development of gambling problems and their effect on other aspects of people's lives.

Pathological Gambling

Although gambling has become an increasingly significant part of the social and economic life of a number of countries during the past 10 to 15 years, until the 1980s, excessive gambling losses, like excessive drinking was generally regarded as individual failing rather than a social or medical problem. There was little recognition that gambling might cause problems for individuals and society, or that increased overall participation in gambling activities could give rise to significant social costs.

In 1980 the American Psychiatric Association included pathological gambling in its **Diagnostic and Statistical Manual, DSM-III**. It is now recognised as a serious form of psychiatric disorder and classified as a Disorder of Impulse Control. Pathological gambling is described thus in the most recent edition of the **Diagnostic and Statistical Manual (DSM-111R)** (1987):

> *"Essential features ..... are a chronic and progressive failure to resist impulses to gamble and gambling behaviour that compromises, disrupts, or damages personal, family or vocational pursuits. The gambling preoccupation, urge, and activity increase during periods of stress. Problems that arise as a result of gambling lead to an intensification of gambling behaviour. Characteristic problems include extensive indebtedness and consequent default on debts and other financial responsibilities, inattention to work, and financially motivated illegal activities to pay for gambling"* (p.324-325).

Continuum of Gambling-Related Problems

In addition to pathological gamblers, there is a much larger category of people who do not display sufficient symptoms to receive a formal diagnosis of pathological gambling but who nevertheless experience problems, sometimes of a serious nature, in association with their gambling. This group is usually referred to as problem gamblers Others prefer the term "potential pathological gamblers". Both terms reflect the increasingly popular view that there is a continuum ranging from non-gambler - occasional gambler - moderate to heavy gambler, with variable degrees of control - problem/potential pathological gambler - through to pathological gambler who would meet the clinical criteria for the DSM-III diagnosis. Dickerson (1989), Consultant to current project, has proposed the term "excessive gambling" to embrace problem and pathological gambling and recognise this continuum and the variety of problems that can occur in association with gambling.

Retrospective studies of pathological gamblers indicate that it typically takes 10 years or more for their disorder to fully develop. However, recent research in the United States suggests that the age at which people start gambling and the type of gambling engaged in, both influence the speed at which problems develop. Specifically, there appears to have been a recent and substantial increase in young problem and pathological gamblers whose problems have developed rapidly (2-3 years) and who favour gambling machines, lotteries and bingo In this they contrast with older pathological gamblers who more typically engage in casino, race track or sports betting. Many of these 'short onset' pathological gamblers, in addition to being young, are of low socio-economic status and members of ethnic minorities (Lorenz, 1990). In the United States, this apparent diversification of, and perhaps increase in, the prevalence of pathological gambling, has been associated with a change in the types of criminal activity engaged in by pathological gamblers. In addition to the 'white collar' crimes such as fraud, embezzlement, writing bad cheques and tax evasion, it appears that shoplifting, drug dealing, prostitution, hustling and armed robbery are now more commonly resorted to by pathological gamblers (Brown, 1987; Lesieur & Klein, 1987).

Extent of Excessive Gambling

Very few prevalence surveys of gambling problems in general populations have been undertaken and no truly national surveys using appropriate measurement procedures have been conducted previously. The first survey was undertaken by the United States Commission to Review the National Policy Toward Gambling (1976). It estimated that approximately 0.8% (8 per 1000) of adults surveyed could be classified as pathological gamblers. This survey used an attitudinal scale rather than a behavioural measure of involvement validated according to acceptable psychiatric standards. Dickerson and his colleagues in Australia have developed an instrument that has generated population estimates ranging from 0.25% to 1.7% depending on the strictness of the criteria used (Dickerson, M. & Hinchy, J. 1988). Volberg (Volberg & Steadman 1988, 1989), during the late 1980s, conducted a series of state-wide surveys using a telephone-administered, standardised screening questionnaire, the South Oaks Gambling Screen (SOGS). The percentages of adults surveyed who at some stage in their lives met the criteria for pathological gambling ranged between 0.1 for Iowa, a state where gambling activities have until recently been restricted, to 2.1 in Massachusetts which, along with five of the other states surveyed, had both longer histories of a variety of legal opportunities to gamble and higher rates of both probable and pathological gambling as measured by SOGS Problem gambling rates ranged from 1.6% (Iowa) to 2.9% (California). Further information regarding these studies is included in the discussion section of this report.

The only previous New Zealand study that has investigated problem gambling in a systematic way, was conducted in Christchurch during 1986. 3.6% of adults surveyed reported that they had at sometime experienced a problem in association with their gambling, and 0.4% were deemed to have been pathological gamblers. These figures, if they could be validly extrapolated to the New Zealand population as a whole, suggest that up to 100,000 New Zealand adults have experienced gambling problems, and 10,000 had been or were currently pathological gamblers. Unfortunately, although the methodology used in this general survey of major forms of psychopathology was generally sound, the estimates of problem and pathological gambling were based only on a few questions, and the recency of problems among the identified pathological gamblers was not reported for two of the seven cases. The small number located did not allow meaningful comparison with the wider community to identify factors that are associated with or predict serious gambling-related problems. The Christchurch investigators observed that *"given the increased advertising pressure to take part in the state lottery, Lotto* [introduced after they conducted their survey] *and the pressure to liberalise gambling with the possible legalisation of casinos, the current low level of pathological gambling may well rise markedly"* (Wells, Bushnell, Joyce et al. 1989).

* * * * *

THE SURVEY METHODOLOGY

The Sample

The overall sample comprised 4053 interviews, made up of 3933 conducted from the primary sampling pattern discussed below, and supplemented with 120 interviews with Maori (90) and Pacific Island (30) respondents, to augment that part of the sample which was disadvantaged by the telephone interviewing methodology. The sample was weighted to correctly reflect the age, gender and household size characteristics of the New Zealand population.

Sampling Pattern

The survey population was all people resident in New Zealand, aged 18 years and over, living in private dwellings, which have a telephone. The sample was stratified by population within each of the 18 telephone directory areas.

In each household, the person with the "next birthday" was the eligible respondent. Households where the eligible respondent refused or was unavailable, and those where the household was constantly unavailable, were replaced. There was no substitution permitted within households. Up to eight calls were made to each number to establish contact with the respondent, being five calls to the household, plus three to the eligible person if necessary.

Only one interview was allowed per household, since it was felt by the principal researchers that the gambling activities of people living together may be inter-related, a factor outside the scope of this study.

Supplementary Sample

A similar approach was used to obtain the 120 supplementary Maori and Pacific Island respondents. The only variation was that the ethnicity question was asked immediately after the eligible respondent was reached and if he/she was not of the required ethnic group, the household was deemed to have no eligible respondent.

Interviewing

Interviewing was conducted by telephone. Telephone interviewing has the disadvantage of under-representing sectors of the population which do not have telephones, particularly Maori and Polynesian households, which have a telephone ownership incidence of 75-80%, compared to around 95% in the general population. It was for this reason that a supplementary sample of 120 interviews was drawn specifically from Maori and Polynesian households, to alleviate their under-representation to some extent.

Interviewing was conducted by a team of trained interviewers from the National Research Bureau Ltd, based in 18 centres throughout New Zealand. Interviewers were personally briefed by their supervisors, and were also supplied with detailed notes on the conduct of this survey. A field audit of 10% of interviews was conducted, with supervisors recontacting one in every ten respondents to confirm that the interview had taken place.

Where an eligible person was unable to complete the interview due to a language difficulty, he/she was recontacted by an interviewer who spoke his/her language. Such interviews were conducted in a number of languages including Mandarin, Cantonese, Samoan, Tongan and Nuiean.

The Questionnaire

The South Oaks Gambling Screen (SOGS) is a measurement instrument developed in the U.S.A for use in identifying whether a person is a problem or probable pathological gambler. Full details are given in Appendix 1. In summary, the scale measures a score out of a possible 20 points, based on the respondent's gambling-related behaviour, and how he/she feels about it. The scale is not based on the level of involvement in gambling or the amount spent. The SOGS is based on the diagnostic criteria for pathological gambling published in the DSM IIIR. It also provides a measure of less severe problems that fall short of a formal psychiatric diagnosis. The modified form of SOGS used in this study yields both lifetime and current measures of problem and pathological gambling. Problem gamblers have a score of 3 or 4 on the scale, while probable pathological gamblers score 5 or more out of the possible 20 points.

The questionnaire, which includes the SOGS, was developed in consultation between the principal researchers and NRB. This development was aided by input from the Consultative Committee, the Department of Statistics, and Associate Professor Mark Dickerson. The questionnaire is essentially based on questionnaires used in similar studies by Dr Volberg in the USA, with small changes to account for different terminologies in New Zealand. It was also modified to yield a measure of current gambling problems in addition to the usual lifetime measure and to provide more detailed information on gambling participation and expenditure. The questionnaire was pilotted by NRB to ensure that the questions were understandable, and allowed respondents to easily report their gambling related behaviour.

The questionnaire included some sensitive information, self-reporting of socially disapproved behaviour, but voluntarily given on the basis of confidentiality. The refusal rates for each question will be discussed in the results.

On average, the questionnaire (as shown in Appendix 1) took 12 minutes to administer.

Response Rate

Overall, the response rate to this survey was 66%, i.e. two thirds of all those contacted and identified as an eligible person, agreed to take part in the survey. Given the sensitive nature of the topic under investigation, the response rate of 66% was satisfactory and comparable with rates for previous New Zealand telephone and face-to-face surveys on health and social issues (Black & Caswell, 1990). A detailed analysis of the outcomes of calls in given in Appendix 2.

The Sample Achieved

A comparison of the actual sample to that which would be expected (based on 1986 Census figures) is shown below.

Table 1: The Sample Achieved

	Actual	Expected
Gender		
Men	1843	1953
Women	2210	2047
Age		
18-24 years	534	683
25-29 years	481	468
30-39 years	1005	872
40-49 years	739	646
50-64 years	731	766
65+ uears	563	565
Ethnic minority groups		
N.Z. Maori	323	378
Pacific Islander	95	128

Note that these actual figures were subsequently weighted by age, gender and household size as described in Appendix 2, to correct for the bias introduced by interviewing only one person per household.

Analysis of Results

All questionnaires were returned to NRB in Auckland, for data entry. A machine edit of all fields was performed to check for allowable codes. Cross tabulation, and some statistical analysis allowed the investigation of the parameters discussed in this report.

All findings discussed in this report are statistically significant at a 95% confidence level, unless otherwise stated.

Bilcultural Audit

Department of Internal Affairs Bicultural Officer, Bill Cooper, examined and approved the research proposal.

Department of Statistics Approval

The Department of Statistics was consulted for input into the questionnaire, and the conduct of this survey. The survey was approved by the department, subject to the inclusion of the following information in any publication of data from the survey.

- a statement of the limitations associated with telephone interviewing methodology, as described above under "Interviewing";
- a statement of refusal rates, as given under "Response Rates" above, and also in Appendix 1, as well as an indication of the refusal rate to each question, which is included in the findings.

* * * * *

INVOLVEMENT IN GAMBLING ACTIVITIES

In New Zealand, opportunities for involvement in gambling were, until recently, relatively limited. However, with the introduction in recent years of Lotto, Instant Kiwi, gaming machines and the like, there has been a widening of these opportunities.

Those interviewed were told that the survey was about betting activities, or games in which there is an element of luck or chance. In asking about involvement in these types of activities, we ensured wide coverage of all activities, by specifically naming each of the alternatives, as listed below, and only then allowing the respondent to add to our list.

The specified gambling activities were.....

- Lotto tickets
- Instant Kiwi tickets
- Other instant scratch tickets
- Other lotteries, or raffles of any kind
- Housie, played for money
- Betting on horse or dog races
- Gaming machines, such as one-armed bandits, or slot machines
- Overseas casinos
- Card games, played for money
- Dice games, such as Crown & Anchor, played for money
- Gaming or casino evenings
- Money bets with friends or workmates on the outcome of some event
- Football pools

Under "Any other gambling activities", respondents mentioned betting on mah jong, two-up, backgammon, pool, and investments in the sharemarket.

The common link in all these activities is that they are activities which involve an element of chance, played for money, where the original stake is at risk - in other words, gambling.

The Non-Gamblers

There was a small subgroup in the sample, 4.5% of all people, who said that they have never participated in any of the listed gambling activities, nor any others. Women were twice as likely as men to have never bet (6% vs 3%).

Lotto

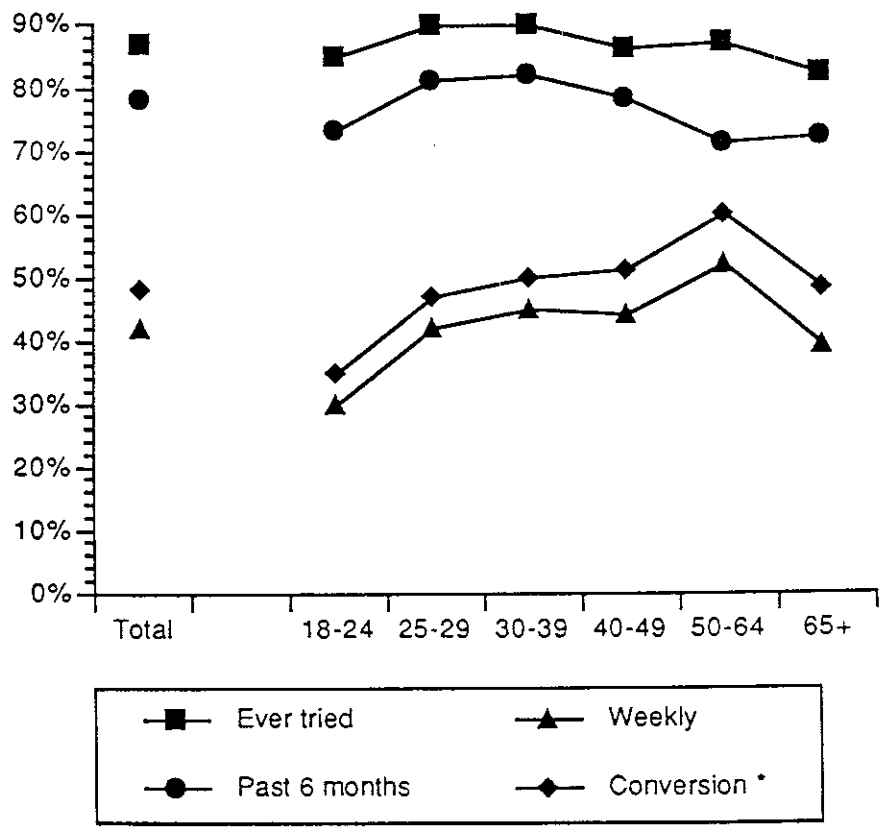
Of all the gambling activities considered, Lotto has the widest following. Overall, 87% of all people have ever bought a Lotto ticket. Recent participation, in the past 6 months, is 78%; while over four out of ten people (42%) said that they buy a Lotto ticket regularly, once a week or more often. That is, almost half of those who have tried Lotto, have become regular weekly participants.

Lotto has been most successful in attracting those in the 50-64 year age group to become regular players. The youngest 18-24 year age group, while no less likely to have tried Lotto, are significantly less likely to have become regular players.

Other demographic effects are .....

- Men (46%) are more likely than women (38%) to be regular players.
- Pacific Islanders are the ethnic group most likely to be regular players (54%).
- those employed in skilled (55%), semi-skilled (53%) or unskilled (45%) occupations (i.e. "blue collar workers") have the highest level of regular participation, as well as the highest level of trial (93%).

Fig.1 Involvement in Lotto



* Conversion indicates the % of trialists who have become weekly players. For example, 87% have ever tried Lotto; 42% as regular players - thus $\frac{42}{87} \times 100 = 48\%$ conversion of trialists to regular players.

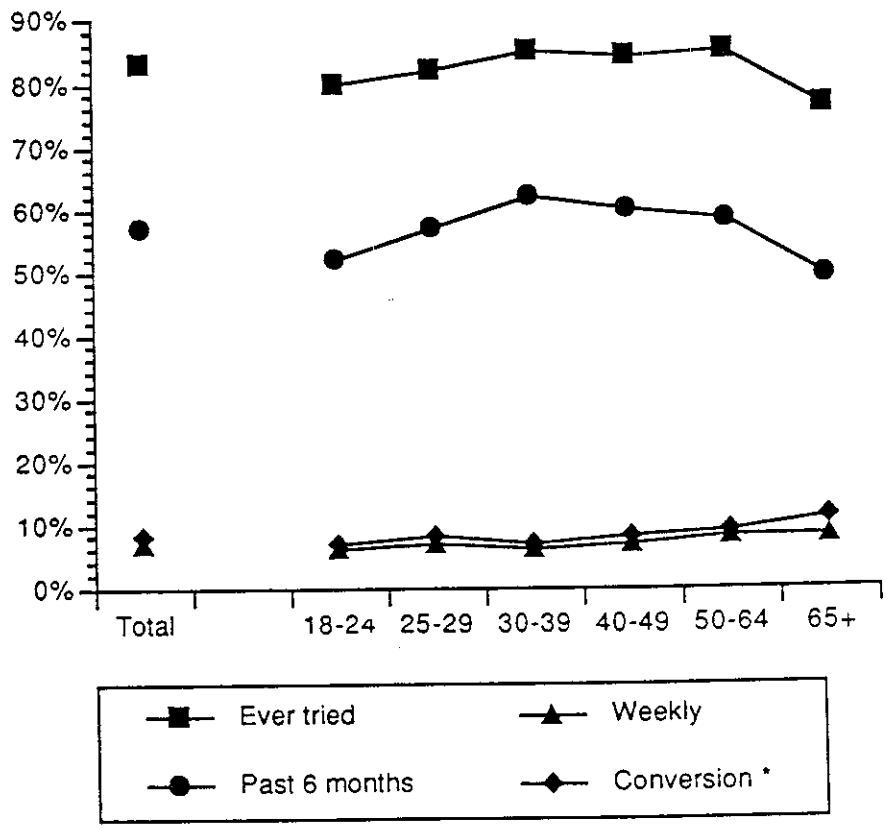
Other lotteries, or raffles of any kind

Interviewers were instructed that all raffles were to be included here, even if they were for charity fundraising purposes, since the essential definition of gambling - the investment of a stake with the opportunity to win a prize and the risk of losing the stake - includes activities such as this. As with Lotto, most people have, at some time or another, purchased a raffle ticket, or a ticket in some other lottery (82%). More than half (57%) of all people have done so in the past 6 months. A small group, 7%, indicated that they bought this sort of ticket regularly once a week or more often.

Those aged 65 or older were significantly less likely to have ever, or recently, bought these types of tickets. However, this group was just as likely as others to be amongst the regular week participants in this form of gambling.

The only other demographic effect of note is that NZ Pakeha/Europeans were the ethnic group most likely to have ever taken part in this activity (85%).

Fig.2 Involvement in other lotteries/raffles



* Conversion indicates the % of trialists who have become weekly players

Instant Kiwi

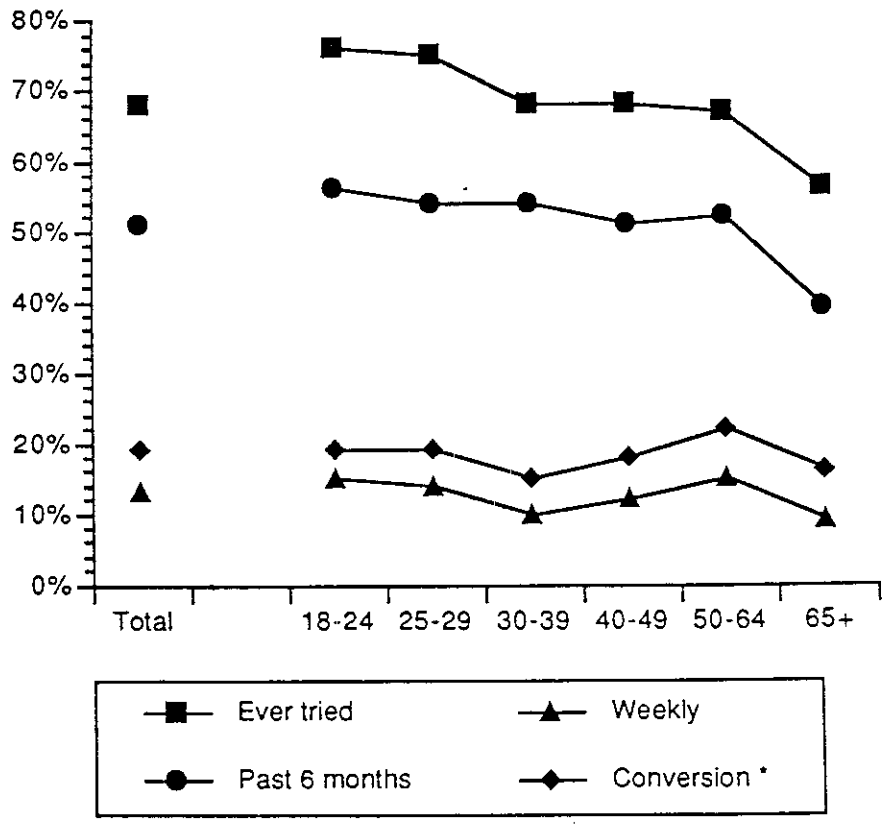
Despite its relatively recent introduction, 68% of all people said that they had ever bought an Instant Kiwi ticket. The vast majority of these, 51% of all people, had done so in the past 6 months. However, only 13% indicated that they were regular buyers of Instant Kiwi tickets, buying at least once a week or more often. That is, around one in five of those who have tried Instant Kiwi, have become regular buyers.

As with Lotto, it is those in the 50-64 year age group that have been most attracted to become regular players. In this case, the young 18-24 year olds show a similarly higher level of regular participation, with a significantly higher level amongst those aged 18-29 years. Those aged 65 and older show lower levels of trial and regular participation in Instant Kiwi than do other age groups.

In other demographic groups .....

- Pacific Islanders were the ethnic group most likely to be regular players (22%), despite having a lower than average level of trial (61%).
- those who are unemployed show relatively higher levels of trial (74%) and regular participation (19%).

Fig.3 Involvement in Instant Kiwi



* Conversion indicates the % of trialists who have become weekly players

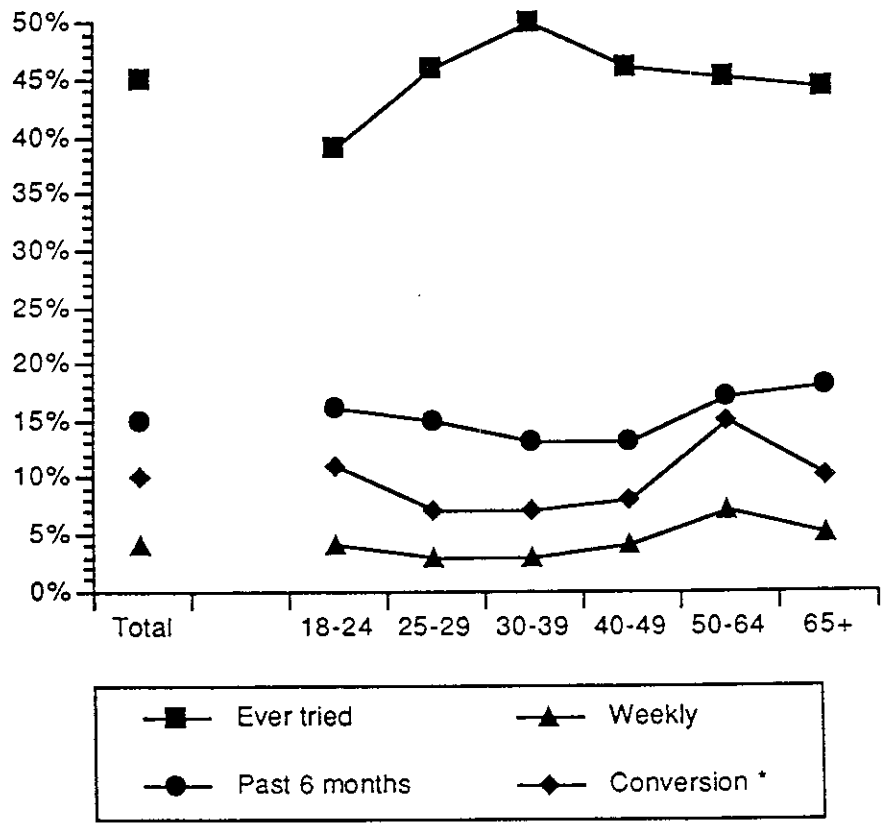
Betting on Horse/Dog Races

Just under half of the adult population (45%) has ever placed a bet on a horse or dog race. However, only 15% indicated that they had done so recently, in the past 6 months. A very small group, 4% overall, said that they are regular, weekly participants in betting on horse or dog races. That is, only 10% of those who have ever tried this form of betting, have become regular weekly players.

The highest level of trial of this form of gambling was in the 30-39 year age group, but it is those aged 50-64 years who are most likely to have become regular players. Young people are significantly less likely to have tried this form of gambling.

This is a male dominated activity, with men more likely to have ever tried (49%), and to be regular players (7%). The Pacific Island group was the ethnic group most likely to be regular players (19% vs total sample 4%). Those who were unemployed similarly show above average regular participation (9% vs 4% total).

Fig.4 Involvement in horse/dog racing



* Conversion indicates the % of trialists who have become weekly players

Gaming Machines

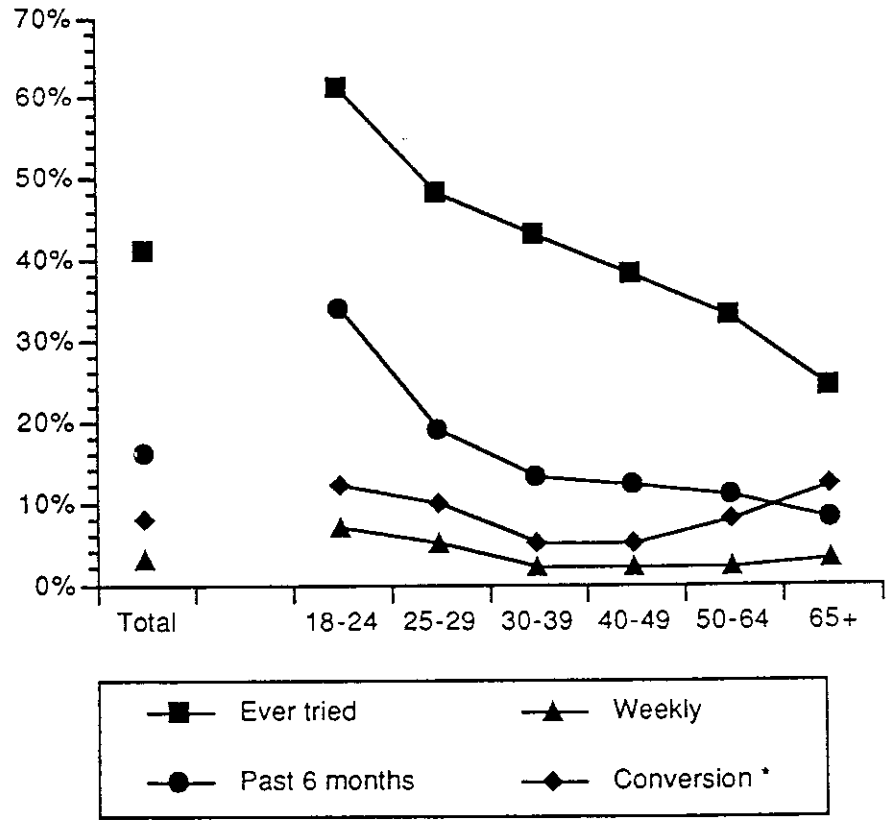
Gaming machines have been tried by 41% of people, but only 16% said that they had bet on these machines in the past 6 months. A very small group, some 3%, said that they spent money on this form of gambling regularly, once a week or more often.

Playing of gaming machines is very strongly correlated with age, with younger 18-24 year olds being significantly more likely to have tried these machines. However, while the young age group also shows high conversion to regular weekly participation, there is similarly high conversion amongst the small group of those aged 65 years or older, who have tried this form of gambling.

Other demographic effects are .....

- men were more likely to try (21%) and also to particpate regularly (5%) than women.
- amongst the various ethnic groups, Pacific Islanders showed a lower level of trial than others (23%), but were no less likely to be regular weekly players (5%).
- the unemployed (7%), those employed in skilled (7%) or semi-skilled occupations (6%) and those who are currently students (6%), showed relatively higher regular participation in this form of gambling.

Fig.5 Involvement in gaming machines



* Conversion indicates the % of trialists who have become weekly players

Money Bets with friends or workmates

Almost four out of ten people said that they had, at some time, taken a money bet with someone else on the outcome of some event. Only 16% said that they had done this recently, in the past 6 months, with a very small group (2%) indicating that it is a regular weekly activity.

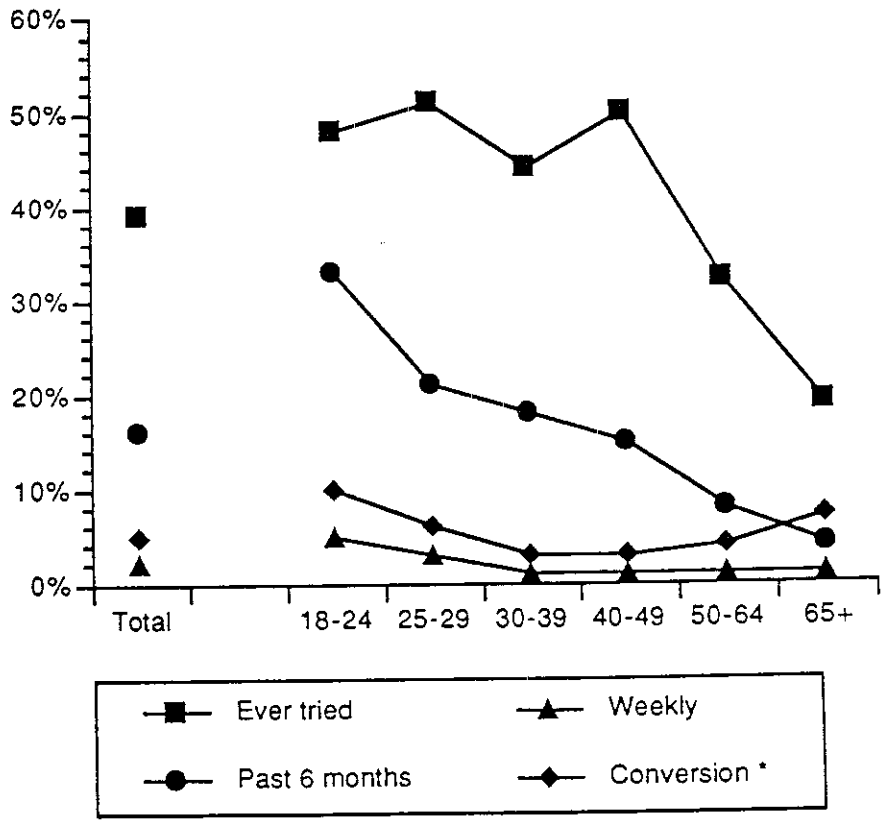
Participation in this type of gambling is strongly related to age, with a significantly lower level of trial amongst those aged over 50 years (32%), and particularly low amongst those aged 65 or older (19%). In the youngest 18-24 year age group, 10% of those who have ever taken this type of bet said that they do so regularly every week.

Money bets with friends tends to be a male activity, both at trial (49%) and at regular participation (4%).

Retired people (22%) and homemakers (28%) were least likely to have ever tried this activity, or to be regular participants.

Amongst the various ethnic groups, the NZ Maori group were more likely to have ever tried this activity (45%), but were no more likely to be regular participants.

Fig.6 Involvement in money bets



* Conversion indicates the % of trialists who have become weekly players

Casinos / Casino Evenings

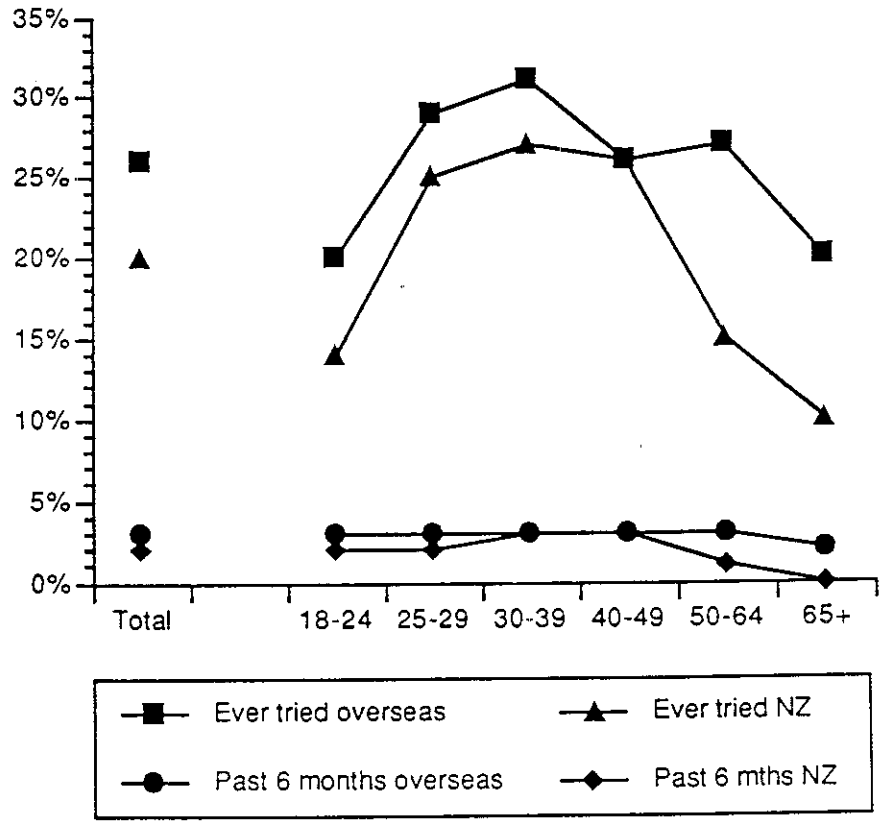
Just over one quarter of all people have ever taken part in gambling in an overseas casino, and only 3% had done so recently in the past 6 months.

Gaming or casino evenings, the closest to legal casino gambling available in New Zealand, has been tried by 20% of people. Recent participation in this form of gambling was very low, at only 2%.

Both of these forms of gambling have attracted the highest levels of trial in the middle age groups.

The level of trial of these activities increases with increasing household income, and in the 'white collar' employed groups.

Fig.7 Involvement in Casino type gambling



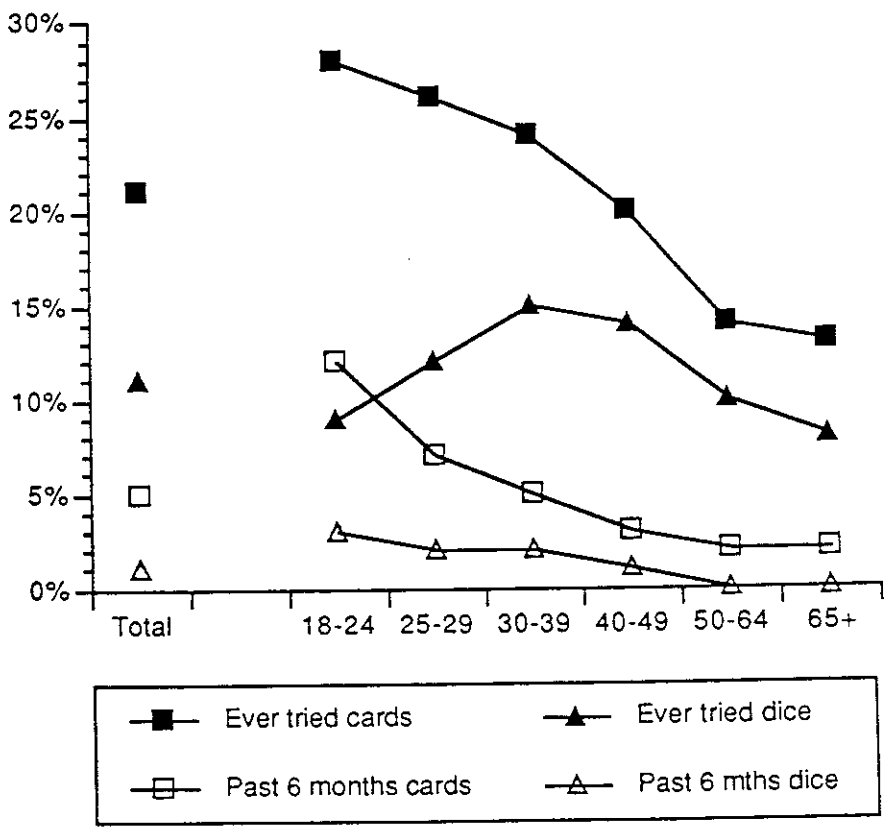
Card/Dice Games, played for money

Just over one in five people (21%) said that they had, at some time, played card games for money, with 5% saying they had done so in the past 6 months. Involvement in card games for money was strongly age related, declining strongly in the 50 year and older age groups.

Dice games for money had been played by just over one in ten people (11%), with only 1% having taken part in the past 6 months. As with cards, there is a steady decline in involvement in the older age groups.

There were very small groups of people who said that they play either cards or dice regularly, once a week or more often (n = 41 and n = 8 respectively). Of the small group of regular cards players, more than one third (n = 15) are in the Maori or Pacific Island ethnic groups. Around half (n = 21) were aged 18-24 years, and two thirds (n = 27) were men.

Fig.8 Involvement in Card and Dice Games



Other Instant Scratch Tickets

Almost one quarter (23%) of people have ever bought an instant scratch ticket (other than Instant Kiwi), with 11% having done so in the past 6 months. Involvement in this type of gambling is more likely amongst those aged less than 30 years.

A small group of people (n=55) said that they buy this type of ticket regularly, with the majority of these (n=33) aged less than 30 years. Over one third of this group (n=20) were in the Maori or Pacific Island ethnic groups.

Housie, played for money

Overall, 18% of people said that they had ever played housie for money, with a very small group, 3%, having done so in the past 6 months.

A very small group (n=40) said that they were regular weekly housie players. Almost half of these (n=18) were in the Maori or Pacific Island ethnic groups, while almost three quarters (n=29) were women.

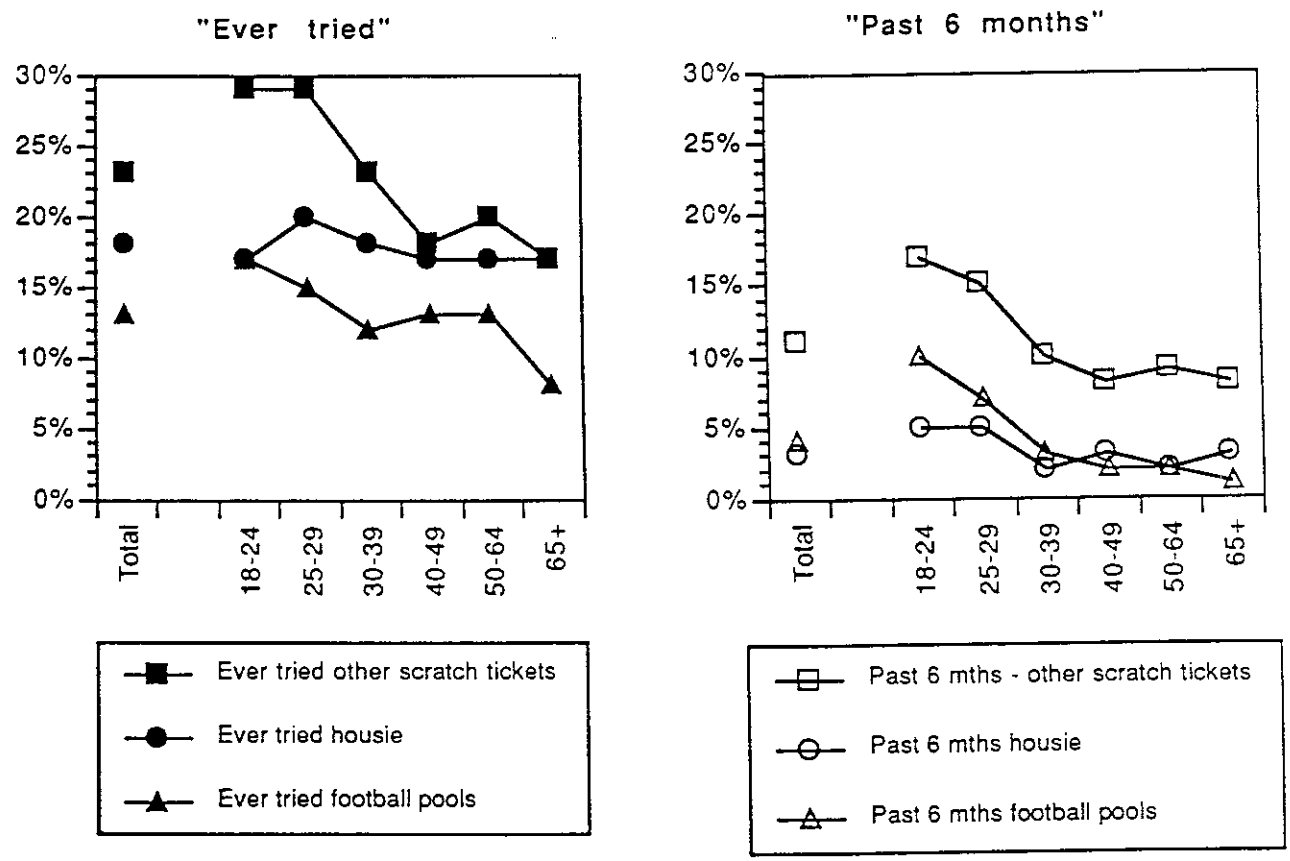
Football Pools

Overall, 13% of all people indicated that they had ever bet money on football pools, with 4% having done so recently in the past 6 months. Football pools appear to have a significantly greater appeal to younger people, with 10% of the 18-24 year age group having taken part recently.

Other

Only 3% of people mentioned any other gambling activity which they had ever bet money on Activities mentioned in this regard included mah jong, backgammon, pool and the share market.

Fig.9 Involvement in other gambling activities



Reasons for Gambling

All people who had ever taken part in any of the gambling activities listed were asked to say why they took part in these activities. The reasons given were grouped together into similar categories, with the following results.

Overwhelmingly, the main reason given for taking part in gambling activities was to win money. This was mentioned by 57% of all people, almost twice as often as the next most favoured reason. The desire to win declined as a gambling motivation amongst those in the older age groups. The comments below are typical of this category.....

"the chance to become a millionaire"

"you never know your luck"

"to win a big prize"

"you can't win if you don't have a ticket"

One in three people said that they gamble for fun or entertainment, saying that they took pleasure in gambling activities, or saw it as fun or recreation. Again, this reason was less frequently given by older respondents, and was also mentioned less by women than men.

19% said that they gambled to support worthy causes, seeing purchases of raffle tickets and the like as a charitable donation, or a way to help local school children in their fundraising activities. This reason was stronger as age increased, and also amongst women.

15% said that they gamble to socialise.....

"extension of friendship"

"joining in with the boys"

..... and amongst these people were some who indicated that they were pressured into gambling by others; peer pressure, social pressures, or even pressure from the family. Men were more likely than women to say they gamble for social reasons (16% vs 13%).

A similar number, 15%, gamble for the excitement or challenge, with the following comments typical of this group.....

"the thrill of winning"

"to beat the odds"

"it gets the adrenalin going"

"the instant outcome"

In this category, the differentiation between men and women was stronger (17% vs 12%).

Further discussion on the reasons for gambling, among different groups of gamblers, is shown on page 53.

Favourite Gambling Activities

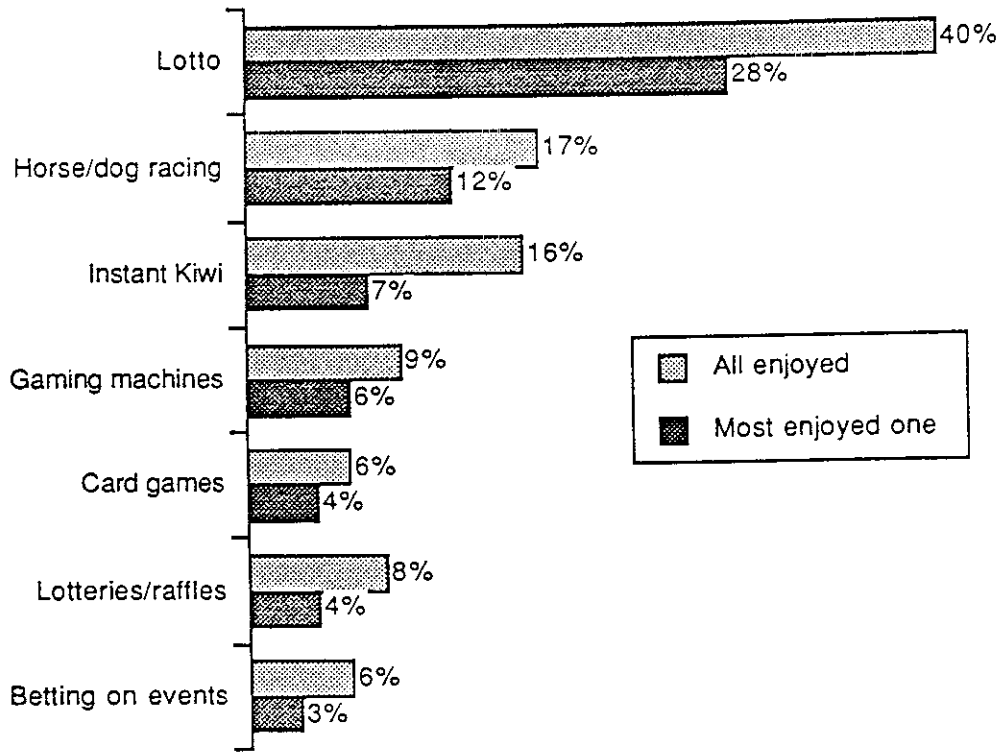
Those who take part in gambling activities were asked to say what one gambling activity they most enjoy taking part in, and then what others they also particularly enjoy.

One quarter of all people said that they had no favourite gambling activity, in addition to the 5% who never bet. Lotto was the activity most frequently mentioned as the most enjoyable, by 28% of all people, with betting on horse or dog races a distant second choice, favoured most by 12% of people.

Lotto remained the most enjoyed gambling activity when all mentions were taken into account, being particularly enjoyed by 40% of all people (which is in line with the 42% who said that they take part regularly every week). Betting on horse or dog races remained the second most enjoyed activity (17%), closely followed by Instant Kiwi, which was particularly enjoyed by 16%.

For Lotto and Instant Kiwi, these figures approach those for regular weekly participation (42% and 12% respectively). However, we find that only 4% regularly participate (weekly) in horse/dog racing, despite it being most favoured by 12%, and particularly enjoyed by 17% overall.

Fig.10 Gambling activities most enjoyed



Expenditure on Gambling Activities

All people who had taken part in each gambling activity in the past 6 months were asked to say how much they spend on that activity in a typical month, rounded to the nearest $5 or so. In this question we focus on the outlay, rather than amounts won or lost. This gives a common baseline for all respondents, irrespective of whether they win or lose, which may change from one session to the next.

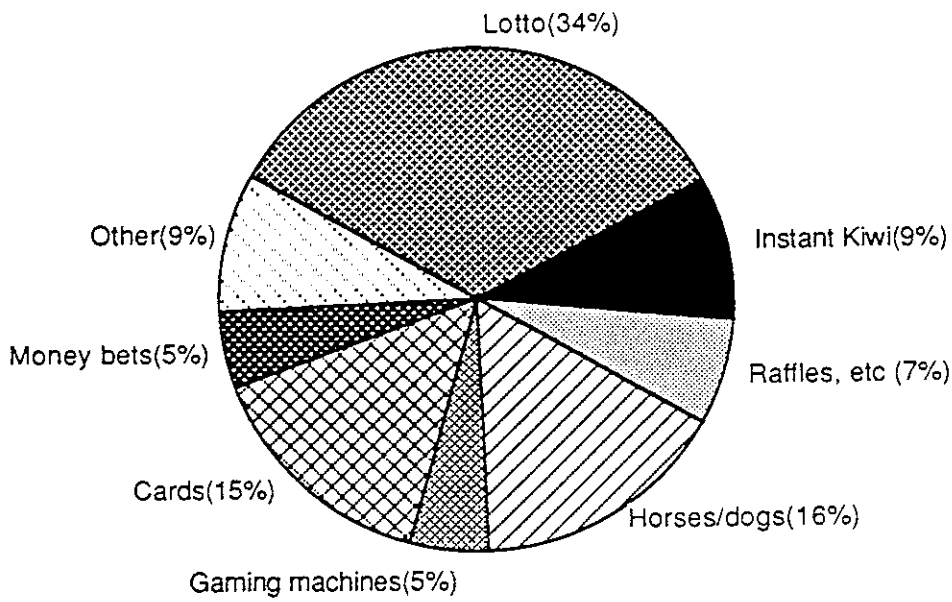
In each case, there was a small group who were either unwilling, or unable to say how much they spend. This "don't know" group ranged from 4% of the sample for "other lotteries or raffles of any kind", to 3% for Lotto, 2% for Instant Kiwi and money bets, to 1% or less for the other activities.

The typical monthly expenditure for each activity is calculated, and then divided by the total sample (excluding the don't know group, but including all others) to give average monthly expenditure per person. In addition, we are able to determine the percentage of gambling money spent on that particular activity.

In total, the people interviewed indicated that they spent approximately $150,000 on gambling in a typical month. This amounts to around $37 for every person aged 18 and over in New Zealand, making an estimated annual expenditure for the country of almost $970 million. This compares to a Department of Statistics estimate of $1080 million spent on gambling in the 1990/91 year, based on the Household Expenditure and Income Survey.

Of this amount, Lotto takes by far the greatest share (35%), followed by horse/dog racing (16%) and card games (15%). However, here it should be noted that expenditure on card games is concentrated to relatively few "big spenders", while betting on Lotto, and horse or dog racing is more evenly distributed.

Fig.11 Share of expenditure

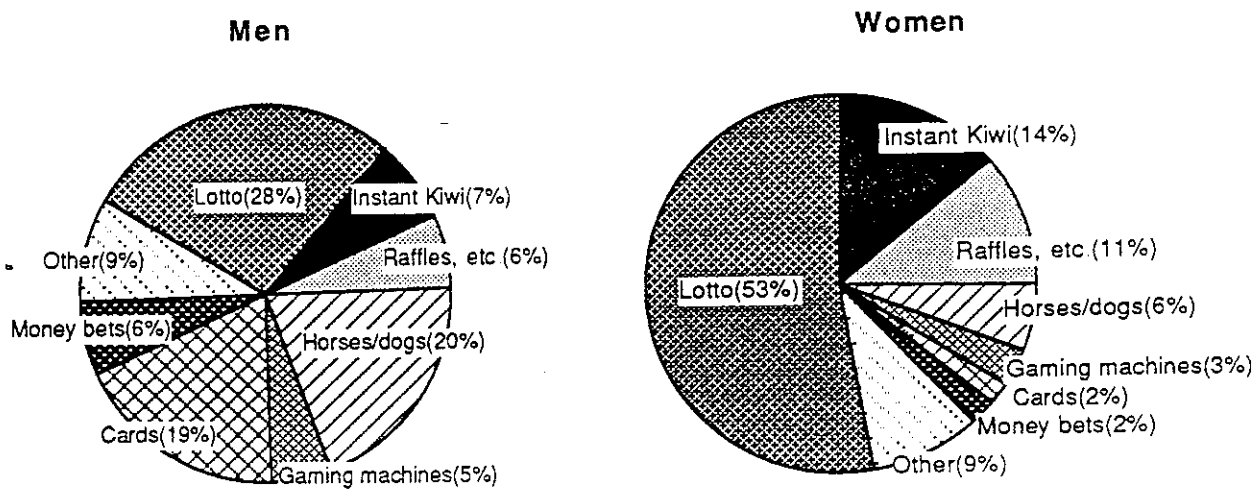


These figures equate to a monthly expenditure of $13 on Lotto for every person in New Zealand aged 18 years or older.

As with involvement, expenditure varied widely across the various demographic groups.

Men spend , per head of adult population, more than twice as much as women ($55 and $20 in a typical month respectively). The expenditure allocation in these two groups is quite different, with women allocating more than half to Lotto (53%, vs 28% for men).

Fig.12 Share of expenditure - Gender effect



The average monthly expenditure per person declines sharply in the older age groups, ranging from $46 per head (18-24 years, and also 30-39 years) to $20 per head amongst those aged 65 years or older. The proportion of expenditure allocated to Lotto varied widely, ranging from 21% in the youngest (18-24 year) age group, to 49% amongst those aged 50 years and older The proportion of expenditure allocated to horse/dog racing was high at 21% in the 18-24 year group, fell to only 9% amongst the 25-39 year group, and rose again to 19% (40-64 year olds), peaking at 26% for those aged 65 and older.

In the table below, we look at the per person expenditure in a typical month on each gambling activity .....

- per head in the adult population
- per person who has taken part in the past 6 months
- per person who takes part regularly at least once a week.

As discussed, Lotto attracts the highest expenditure per person on a population basis. However, when those who have not played recently are excluded, we find that those who have recently played cards for money have by far the highest expenditure per person, in excess of $100 per month. As noted, this figure is due to a few "large spenders" in the sample. Betting on horse/dog races ranks second, with $42 per person amongst recent players.

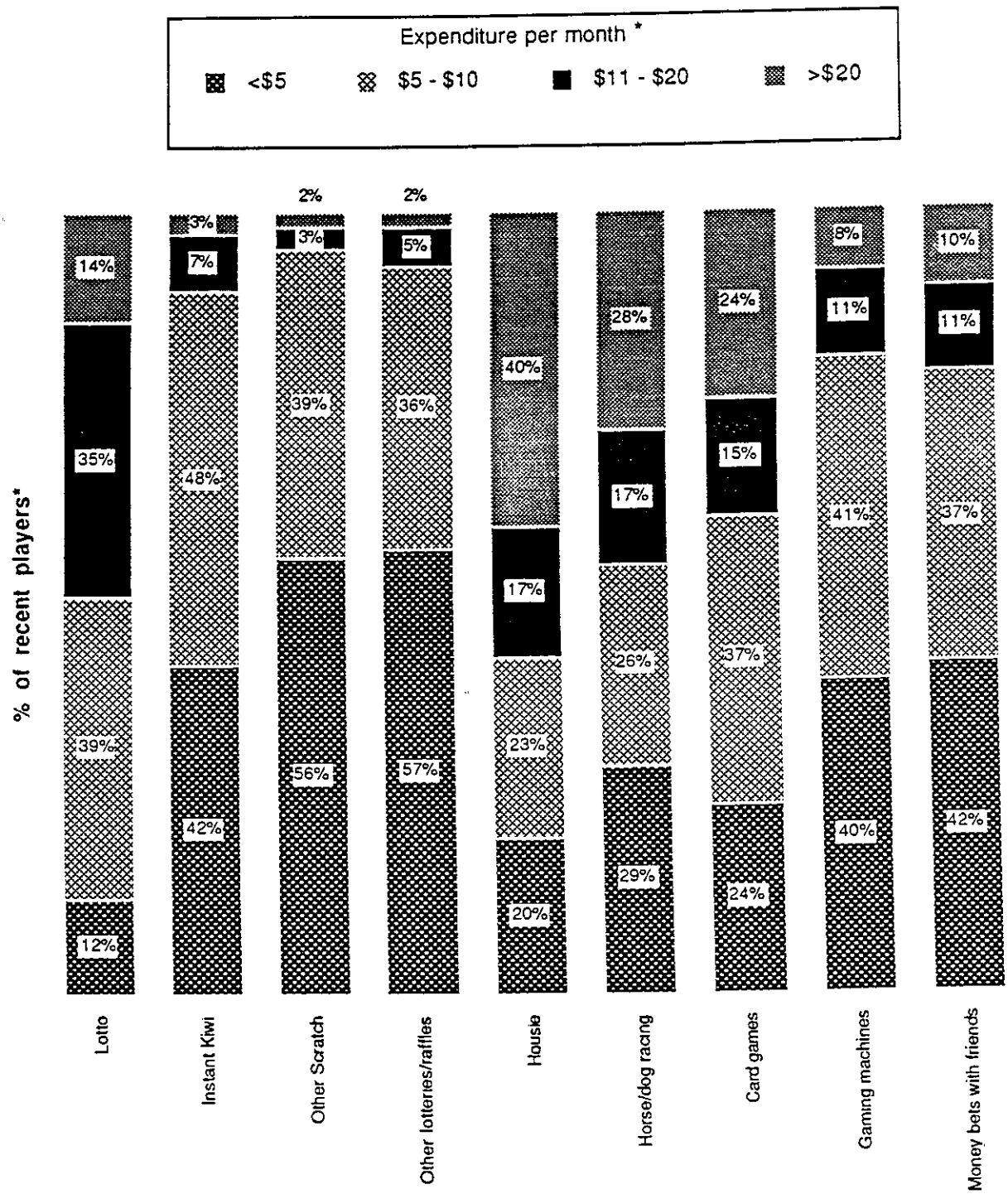
Amongst regular weekly players, we find that bettors on horse/dog racing have the highest average monthly expenditure, followed by the small groups which play dice ($69) or Housie ($57) regularly.

Table 2: Monthly Expenditure

Typical monthly expenditure (average) on	Per person in population $	Per person who has taken part in last 6 months $	Per person who regularly takes part $
Lotto	13	17	24
Instant Kiwi	3	6	12
Other scratch	<1	4	11
Raffles, etc.	3	5	12
Housie for $	1	29	57
Horses/dogs	6	42	106
Gaming machines	2	11	31
Casinos	1	40	-
Cards for $	5	119	47
Dice for $	<1	20	69
Money bets	2	13	41
Football pools	<1	10	30

The graph below shows the distribution of expenditure (amongst those who have taken part in each activity in the past 6 months). Clearly, the majority of players spend quite modest amounts, up to $20 in a typical month, on each of the activities. Exceptions to this are Housie, horse/dog racing and card games, where more than 20% of recent players spend over $20 per month.

Fig.13 Distribution of expenditure



* Based only on those who have played in past 6 months and were able to say how much they spend in a typical month.

* * * * *

PROBLEM AND PATHOLOGICAL GAMBLING

Prevalence

In this New Zealand study, we sought to identify the following groups, using the SOGS scale, as discussed on page 11 and in Appendix 1:

- those who have ever had a gambling problem ("lifetime prevalence") divided into problem gamblers and probable pathological gamblers.
- those who have a current gambling problem, with "current" defined as "in the past 6 months", again separating problem gamblers and probable pathological gamblers.

The details of responses to the SOGS questions are shown in Appendix 3.

Lifetime Prevalence

As discussed, the majority of people have at some time taken part in gambling activities. Most of these people do not report experiencing major problems associated with their gambling behaviour. However, a significant minority, somewhere between 5.8 to 8.2 per cent of the adult population (125,000 - 174,000) apparently do.

In the overall sample, we identified that .....

- 2.7% (±0.5%)* of respondents have at some time had problems with gambling which are so serious that they would have been classified as probable pathological gamblers. This would indicate that between 47,000 and 69,000 people in New Zealand have at some time been pathological gamblers.
- a further 4.25% (±0.6%) have at some time had problems with gambling to the extent that they would have been classified as problem gamblers. This would amount to another 78,000 to 105,000 people in New Zealand.

Current Prevalence

The current prevalence of gambling problems indicates those who have had a problem in the past 6 months. In the overall sample .....

- 1.2% (±0.3%) of respondents have recently exhibited behaviour which would classify them as current pathological gamblers (i.e. between 19,000 and 32,000 people).
- 2.1% (±0.4%) have characteristics which would classify them as current problem gamblers (i.e. between 36,000 and 54,000 people, in addition to those in the current pathological group).

* At 95% confidence, between 2.2% and 3.2% of the population are classified as probable pathological gamblers.

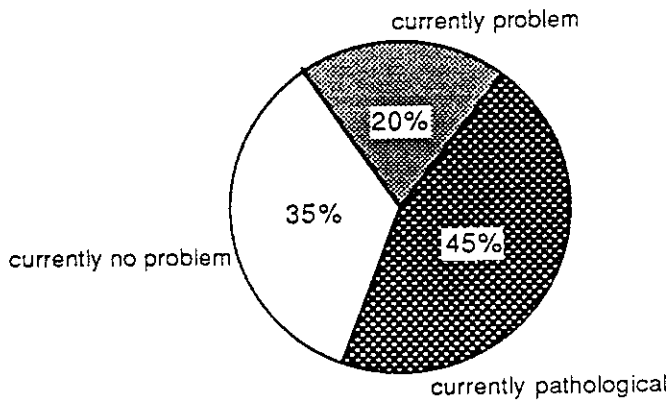
Lifetime Changes in Status

It is of interest that 45% of those who have at some time been pathological gamblers are currently (in the past 6 months) classified as such. Around one third (35%) of those who were classified as pathological gamblers are currently in the group with no problems, while two thirds continue to have problems.

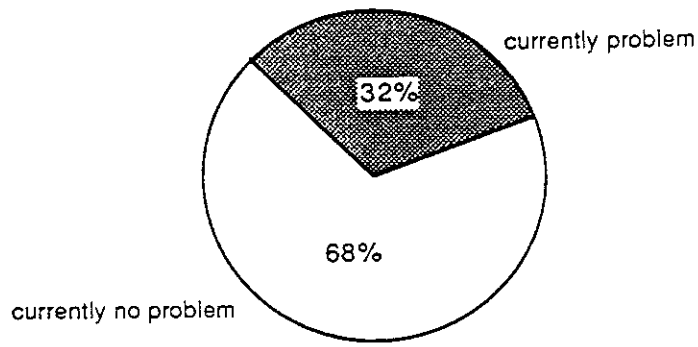
32% of people classified as problem gamblers at sometime remain in the problem group 68% currently fall outside the problem and pathological categories. Changes over time in gambling involvement and expenditure will be investigated further in Phase 2 of this research study.

Fig.14 Current status of ever pathological and ever problem groups

Ever Pathological (N = 109, small base, treat with caution)



Ever Problem (N = 170, small base, treat with caution)



* * * * *

Characteristics of Problem/Pathological Gamblers

A statistical analysis of the South Oaks scores and various demographic variables was conducted to identify the variables which have the strongest relationship to the level of gambling problems.

Firstly, considering a simple Pearson Chi-square test[1] of each variable against the gambling score (lifetime prevalence) .....

Table 3: Chi-square Analysis

Variable	Chi-square	DF*	PROB*
Age	68.4	10	0.000
Gender	47.1	2	0.000
Household size	32.9	10	0.000
Employment status	83.5	14	0.000
Occupation of main income earner	44.6	14	0.000
Marital status	53.4	10	0.000
Educational level	22.4	10	0.013
Religion	20.6	16	0.196
Household income	17.8	10	0.059
Ethnic group	78.0	2	0.000
Parents with gambling problem?	38.3	4	0.000

* DF = degrees of freedom

PROB = the probability of the measured effect being due to chance rather than a real difference

From this we see that household income and religion can be discounted, at 95% confidence levels, as significant influences on the level of gambling problems, with educational level also of lower significance (<99% confidence).

1 The use of the Chi-square test is described in any standard statistics text.

Furthermore, we considered the interdependence of various variables, notably .....

- employment status of the respondent was strongly related to household income (correlation coefficient r = 0.49), the occupation of the main income earner (0.71) and, to a lesser extent, the educational level (0.25).
- the occupation of the main income earner in the household was strongly related to the household income (0.60), age of the respondent (-0.32), the respondent's educational level (0.23) and the number of people in the household (0.28).
- the respondent's educational level was related to the household income (0.26).
- the household size was related to age (-0.31) and the household income (0.26).

Clearly, with these interrelationships, it is important to identify those factors which are <u>most strongly</u> related to the high gambling scores, and use these to profile the at risk group or groups of people. From our analysis, we conclude that the most significant factors are .....

- age
- gender
- ethnic group
- employment status
- a history of parental gambling problems.

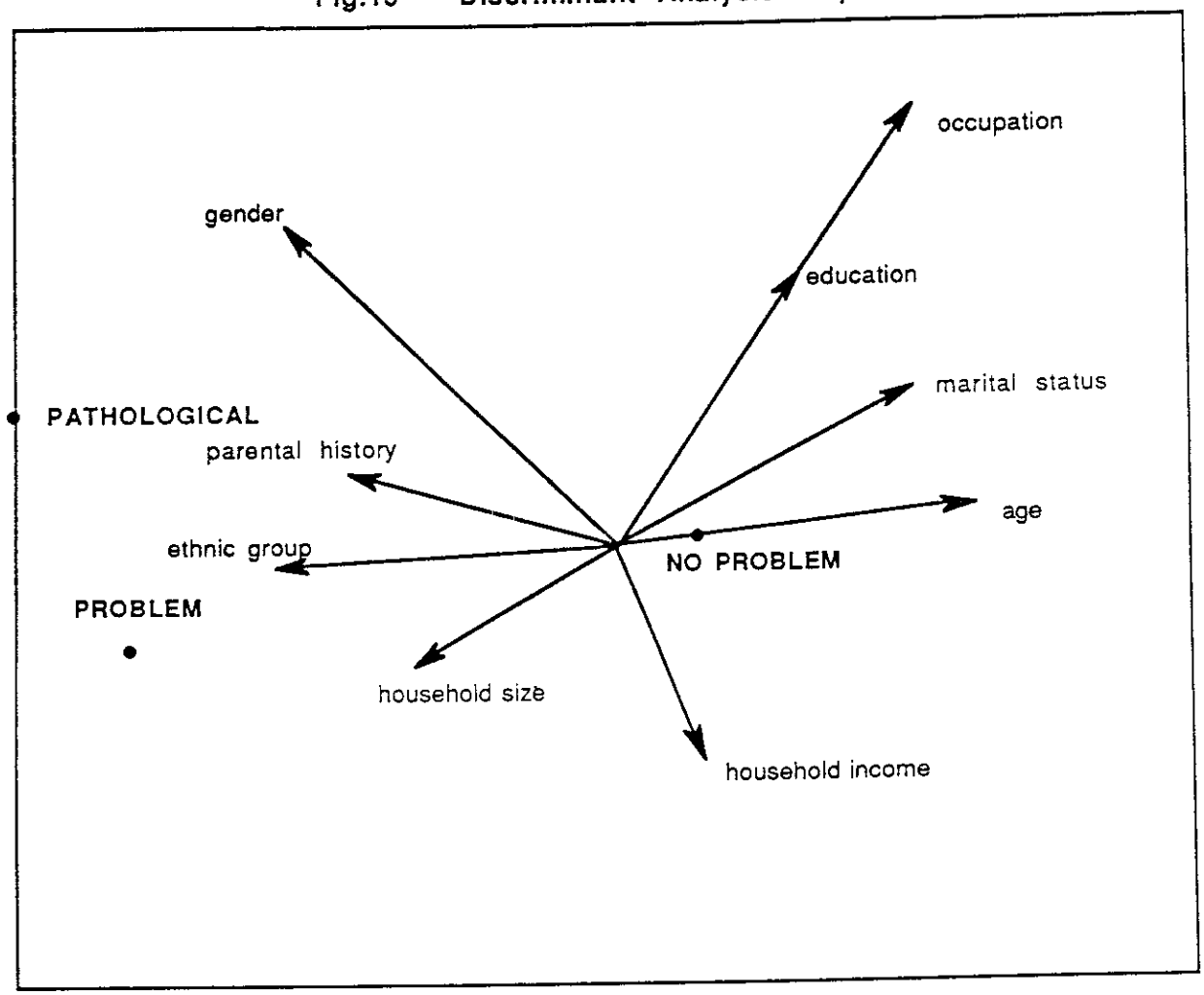
This is confirmed by the discriminant analysis shown overpage.

Discriminant Analysis

The map below is the result of discriminant analysis using the "ever" SOGS groupings - no problem, problem and probable pathological - as the dependent variable, with the following discriminant factors .....

- age
- marital status
- highest educational level
- occupation
- gender
- parental gambling history
- ethnic group
- household size
- household income

Fig.15 Discriminant Analysis Map



Test of residual roots

- Roots 1 through 2 (horizontal separation)
  Chi square statistic = 213.3 DF=18 PROB = 0.00
- Roots 2 through 2 (vertical separation)
  Chi square statistic = 5.48 DF=8 PROB = 0.70

Note that the second root is not significant.

Interpretation

- The variables considered do not discriminate significantly between the pathological and the problem groups.
- There is significant discrimination between the no problem group and the two other groups, particularly with regard to the age and ethnicity variables.

FACTORS WHICH DIFFERENTIATE PROBLEM GAMBLERS FROM OTHERS

Age

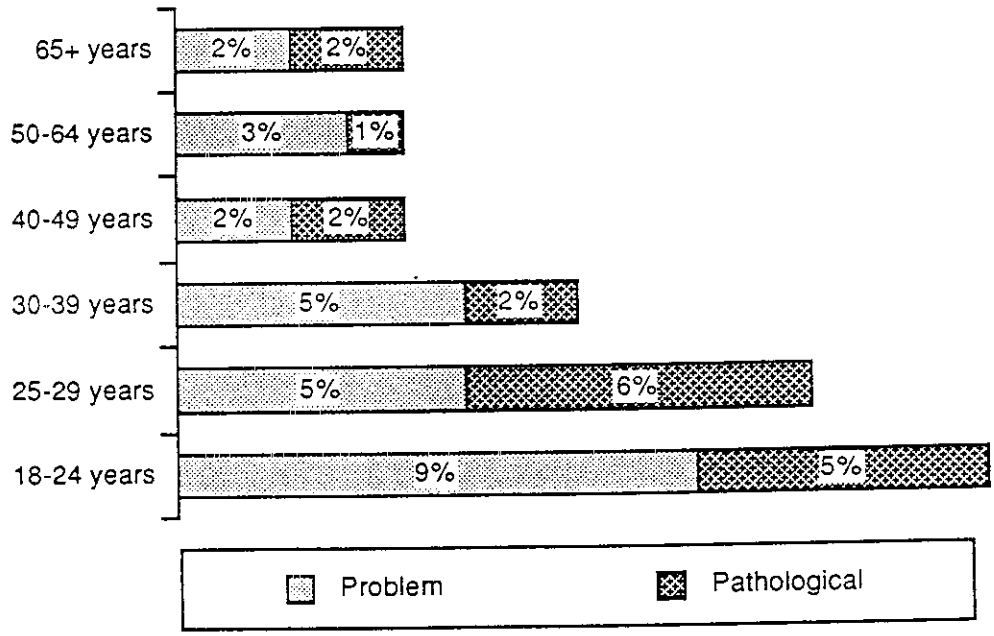
Gambling problems are strongly related to age, as shown previously.

Considering the groups of pathological and problem gamblers which we identified .....

- 54% of pathological gamblers, and 67% of current pathological gamblers, are in the 18-29 year age group.
- 48% of problem gamblers, and similarly 48% of current problem gamblers, are in the 18-29 year age group.

These figures compare to 29% of the population in this age group, and represent a significant ($p < 0.001$) difference in the level of gambling problems in the younger groups.

Fig.16 Prevalence of Gambling Problems - by Age



(Based on lifetime SOGS scores)

In the 18-24 year age group, 5% have, despite their youth, already developed pathological gambler characteristics, while a further 9% have some degree of gambling problems. The levels of current pathological and problem gambling in this 18-24 year age group are 3% and 4% respectively.

Gender

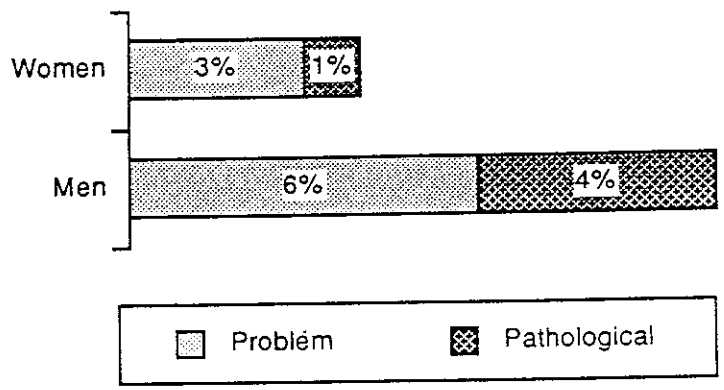
There is a strong link between gender and gambling problems.

Amongst the groups identified .....

- 79% of pathological gamblers, and 80% of current pathological gamblers, are men.
- 64% of problem gamblers, and similarly 55% of current problem gamblers, are men.

This compares to 49% men in the whole population, and provides support for the hypothesis that men are significantly more likely than women to develop gambling problems ($p < 0.001$).

Fig.17 Prevalence of Gambling Problems - by Gender



(Based on lifetime SOGS scores)

The results of this survey suggest that one in ten men have at some stage had a gambling problem, with 4% having had pathological gambling characteristics. Considering the levels of current gambling problems, we find that 2% of men fall into the current pathological group (vs less than 1% of women). The current problem groups are comparable, at 2% each of men and women.

Ethnic Group

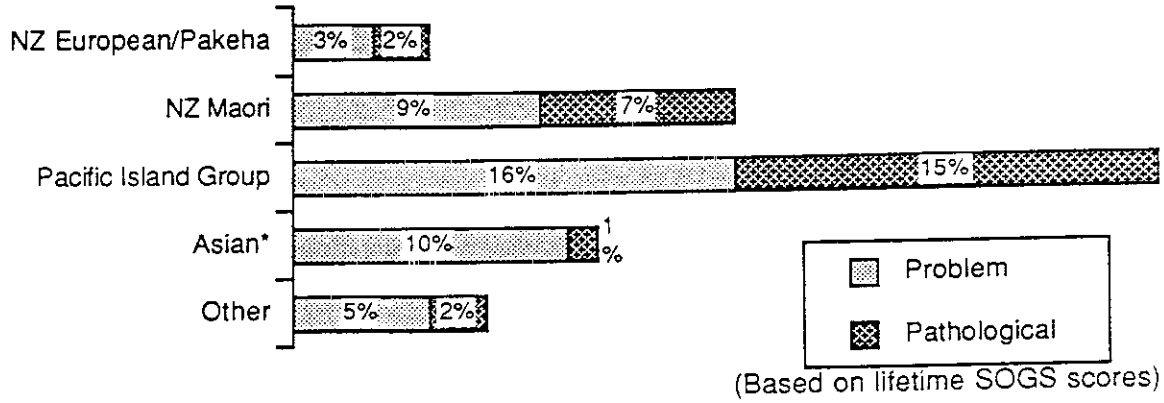
The ethnic group of the respondent is the single strongest influence on the prevalence of gambling problems.

In the pathological/problem groups in our sample .....

- 23% of pathological gamblers, and 22% of current pathological gamblers, are Maori.
- 18% of both problem gamblers, and current problem gamblers, are Maori.
- 18% of pathological gamblers, and 25% of current pathological gamblers, are Pacific Islanders.
- 12% of both problem gamblers, and current problem gamblers, are Pacific Islanders.

These figures compare to an incidence in our sample of 9% Maori and 3% Pacific Islanders (n=352 and n=130 respectively, on a weighted base).

Fig.18 Prevalence of Gambling Problems - by Ethnic Group



* Caution: based on less than 100 people

The ethnic minority groups show a significantly ($p < 0.001$) higher level of gambling problems (either problem or probable pathological), estimated at 16% (±4% at 95% confidence) amongst those of Maori origin, and 31% (±8% at 95% confidence) amongst the Pacific Island group. Similarly the level of current gambling problems increases from 3% of the Pakeha group (problem and pathological) to 7% of the Maori group and 18% of the Pacific Island group. Note that these figures must be treated with caution. We have no way of knowing whether or not those who do not have a telephone would show similar levels of gambling problems, or at this stage, whether the SOGS instrument can be validly used in populations other than North America where it was validated.

Further analysis showed that the higher prevalence of gambling problems amongst minority ethnic groups persists .....

- amongst men and women;
- across all age groups
- across all employment levels
- and is not dependent on household income.

That is, we can confidently (at 95% confidence) say that, amongst those with telephones, Maori and Pacific Island people are significantly more likely than others to experience gambling problems (as measured by the SOGS instrument), irrespective of their socio-economic or demographic status.

Employment Status and Occupation

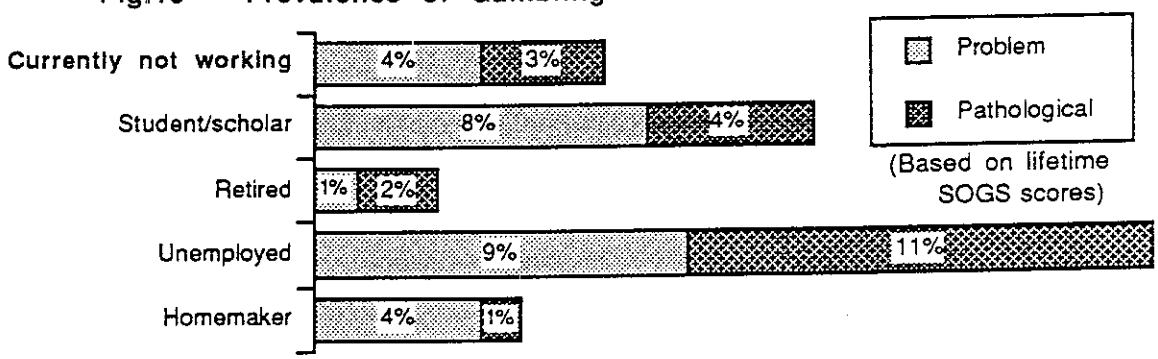
The prevalence of gambling problems was not influenced by whether the respondents were currently working in paid employment.

Considering the non-working group .....

- 17% of pathological gamblers, and 29% of current pathological gamblers, are unemployed

This compares to only 4% of the sample in the unemployed group.[1]

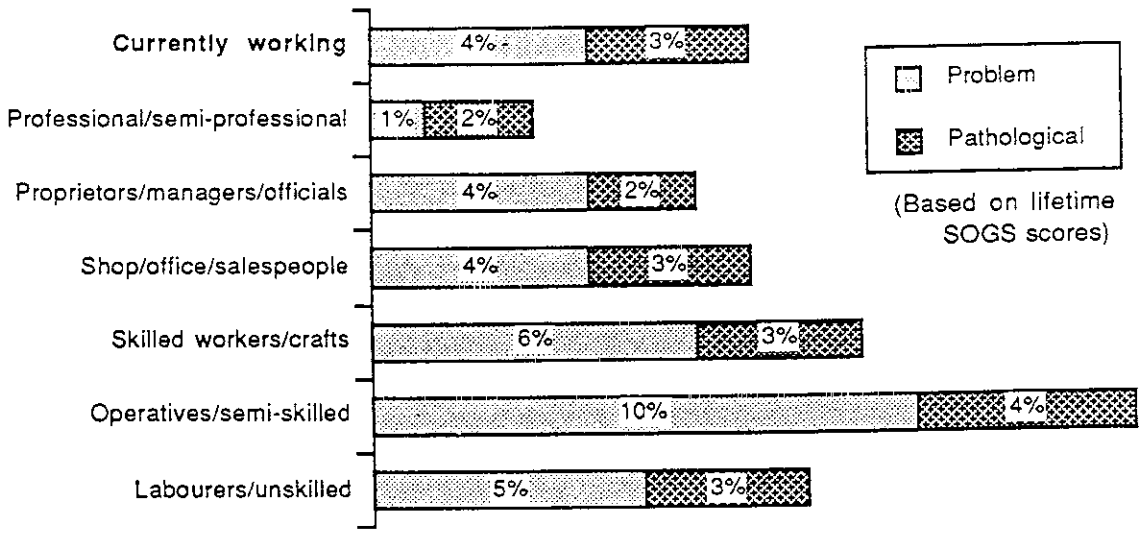
Fig.19 Prevalence of Gambling Problems in non-working group



One in five amongst the unemployed group have at some time had a gambling problem (±6% at 95% confidence), with 12% of this group in the current problem or pathological gambling groups.

Amongst those currently working, gambling problems are spread across all occupational groups, with small over-representations amongst skilled and semi-skilled workers.

Fig.20 Prevalence of Gambling Problems in currently working group



The low incidence of gambling problems amongst professional and semi-professional people is consistent with the influence of tertiary education on gambling problems, as discussed over page.

1 The size of the unemployed group is much lower than the official unemployment statistics. This is due, we believe, to two factors. Firstly, the exclusion of non-telephone homes, and secondly, a contextual effect in that our employment question asked people to state their occupation, rather than their current employment status.

Education (Highest level attained)

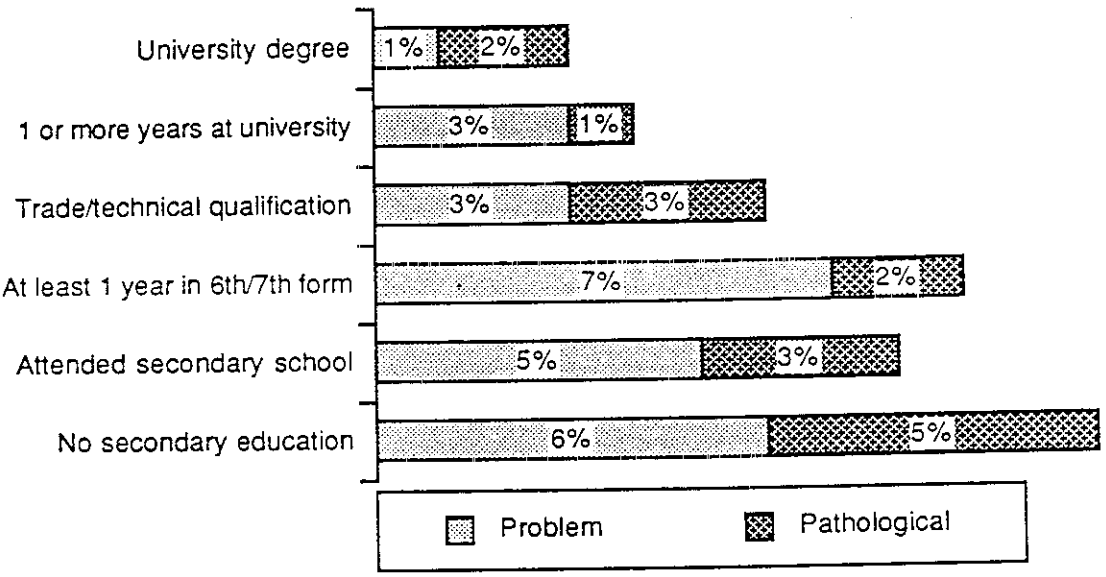
Educational attainment was a less significant factor in the prevalence of gambling problems, with its influence not as strong as some other factors discussed.

In the identified problem/pathological groups .....

- 43% of pathological gamblers and 40% of current pathological gamblers had not reached 6th or 7th form.
- 37% of problem gamblers and 34% of current problem gamblers had not reached 6th or 7th form.

These figures compare to 31% of the whole sample whose highest educational level was below 6th form.

Fig.21 Prevalence of Gambling Problems - by Educational Levels



(Based on lifetime SOGS scores)

Clearly, the prevalence of gambling problems declines as the educational level increases Educational level was correlated with current employment status, a more significant factor in the level of gambling problems.

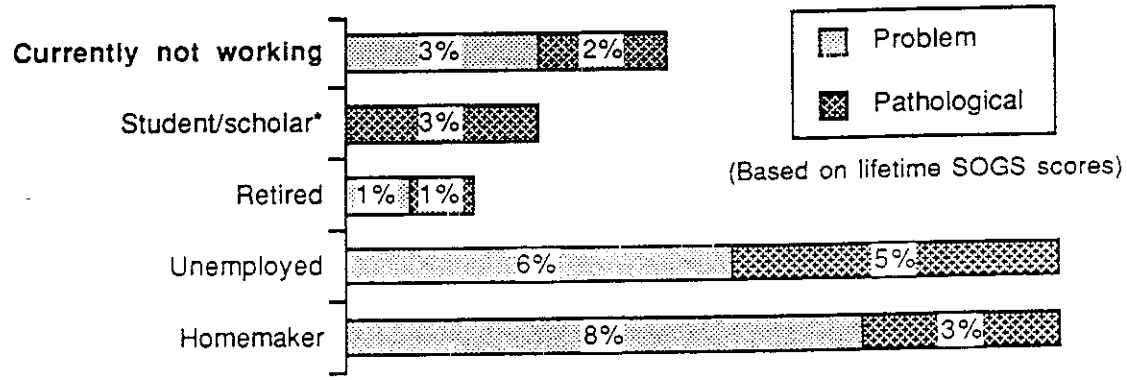
Occupation of main income earner

The occupation of the main income earner in the household is a strong indicator of the socio-economic level of that household

Just over one quarter (27%) of respondents were in households where the main income earner is not working. These respondents showed a somewhat lower prevalence of gambling problems (than those with a working main income earner), related to the high proportion of older, retired people in this group (18% of the sample).

In contrast to the retired group, those in households with an unemployed main income earner showed above average prevalence of gambling problems (11% ever and 5% current), as did those where the main income earner is a homemaker (11% ever and 5% current), presumably on some type of benefit.

Fig.22 Prevalence of Gambling Problems - non-working main income earner

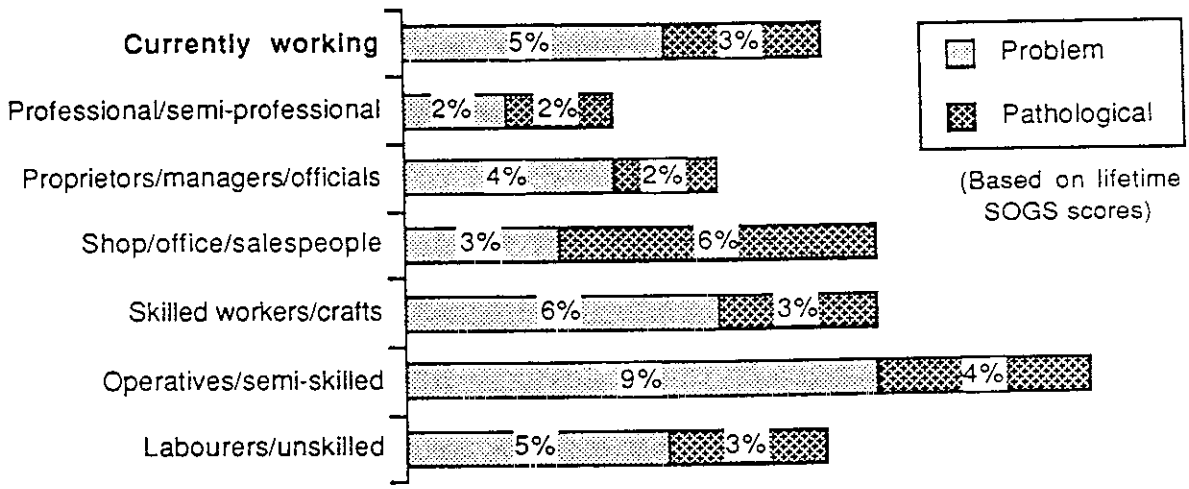


* Small base N<100. Treat with caution.

Amongst those in households with a working main income earner ....

- 20% of pathological gamblers, and 19% of current pathological gamblers, live in households where the main income earner is employed in a shop/office/sales occupation (vs 10% in the whole sample).
- 29% of pathological gamblers (41% current), and 42% of problem gamblers (41% current), live in households where the breadwinner is employed in a skilled or semi-skilled occupation (vs 24% in the whole sample).

Fig.23 Prevalence of Gambling Problems - working main income earner



Marital Status

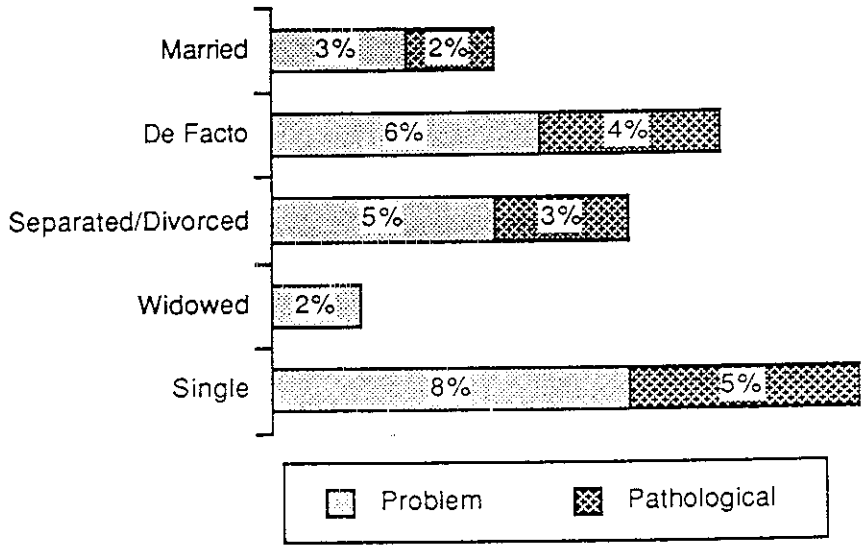
Marital status, while not one of the strongest influences, is a factor in the level of gambling related problems.

In the problem groups identified .....

- 35% of pathological gamblers, and 49% of current pathological gamblers, are single.
- 37% of problem gamblers, and 33% of current problem gamblers, are single.

This compares to 20% of the whole sample who stated that they are single.

Fig.24 Prevalence of Gambling Problems - by Marital Status



(Based on lifetime SOGS scores)

The prevalence of gambling problems is higher than average amongst all groups except those currently married or widowed.

Amongst those in de facto relationships, 10% (±4%) exhibit some degree of problem. This level falls to 8% (±3%) amongst those who are separated or divorced, and rises to 13% (±2%) amongst the single group. Statistically it is only the latter single group that is significantly higher than average (at 95% confidence) However, the married group, at 5% (±0.9%) is significantly lower than others.

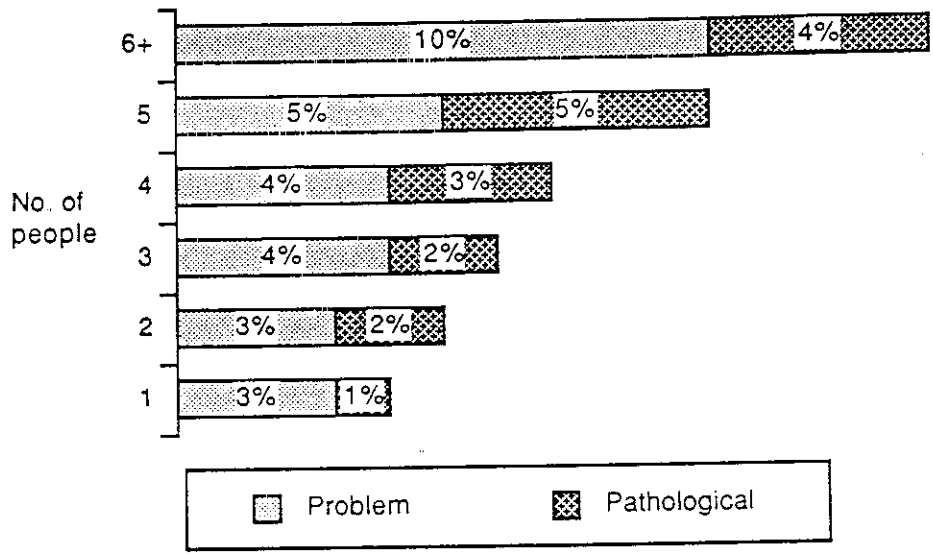
It should be noted that the increased level of problems in the single group is to some extent attributable to the fact that those in the 18-24 year age group are most likely to be single.

Household Size

As discussed, household size is related to other variables such as ethnicity, age, occupation of main income earner, and household income, and should not be viewed alone as an influence on the level of gambling problems.

However, it is clear that pathological and problem gambling is more prevalent in larger households, with 60% of pathological gamblers and 59% of current pathological gamblers in households of 4 or more people (vs 41% in the whole sample).

Fig.25 Prevalence of Gambling Problems - by Household Size



(Based on lifetime SOGS scores)

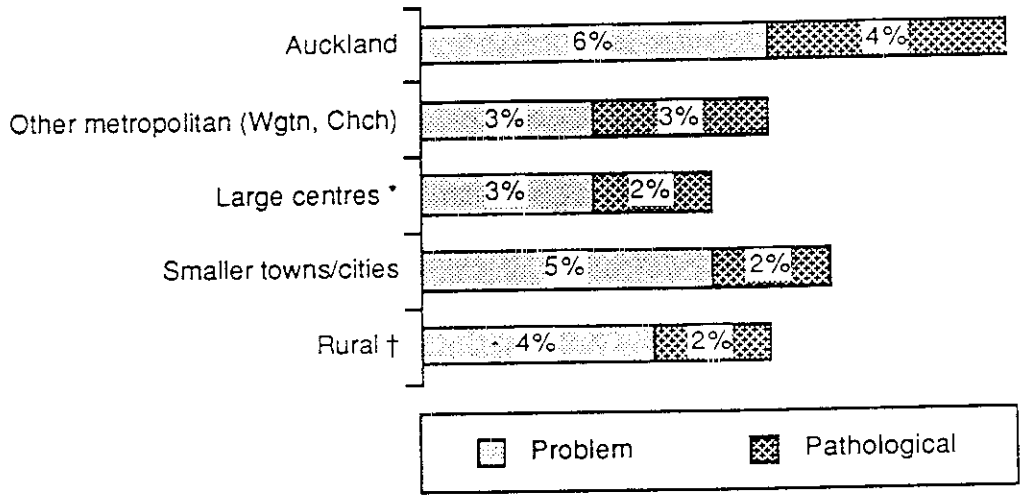
As shown, 14% (±4%) of those in households of 6 or more people, and 10% (±3%) of those in households of 5 people, exhibit some degree of gambling problems. This pattern is repeated when only current gambling problems are considered, which range from 2% in single person households to 8% in households of 6 or more people.

Area

Auckland was the only area influence identified as having a significantly higher prevalence of problem and pathological gamblers (6% and 4% respectively). That is, in Auckland there was a combined 10% (±1.8%)of respondents with some level of gambling problem The corresponding figures for current pathological and problem gambling are 2% and 3% respectively.

This effect was not repeated in Wellington (6% ±2.3%) or Christchurch (5% ±2.0%), nor in the smaller areas. To some extent, the Auckland effect is attributable to the higher proportion of minority ethnic groups in that area.

Fig.26 Prevalence of Gambling Problems - by Area



(Based on lifetime SOGS scores)

* Hamilton, Napier/Hastings, New Plymouth, Palmerston North and Dunedin.

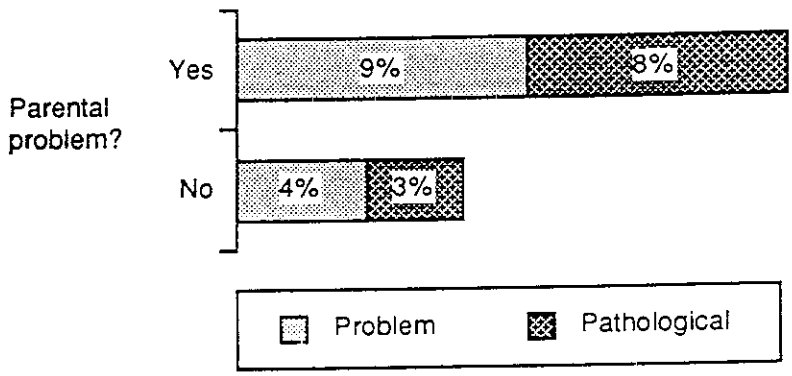
† Rural = toll call from any of the 18 main centres

As shown above, those living in rural areas were neither more nor less likely to have gambling related problems than those in other areas.

History of Parental Gambling Problems

Only 4% of the sample indicated that either of their parents had a problem with gambling. Those who did report a parental history of gambling problems were significantly ($p < 0.001$) more likely to be classified themselves as problem or pathological gamblers.

Fig.27 Prevalence of Gambling Problems - by History of Parental Gambling Problems



(Note: Those who never bet were not asked this question)

Amongst those whose parents did have a gambling problem, 17% (±6%) exhibited some degree of gambling problem themselves. This compares to a level of 7% (±0.8%) amongst those who said that their parents did not have a gambling problem.

A parental history of gambling problems was not a significant influence on the prevalence of current problems. The combined current problem/pathological levels were 5% (±3%) amongst those with a parental history, and 3% (±0.6%) amongst those with no parental history of gambling problems.

While the majority of those with gambling problems have not had a parental history of such problems, this is clearly an added risk factor.

* * * * *

GAMBLING INVOLVEMENT OF PROBLEM/PATHOLOGICAL GROUPS

In considering the gambling involvement of the problem and pathological groups as described in the previous sections, we will distinguish between continuous and non-continuous gambling activities. Continuous activities are those where any winnings can be immediately "reinvested" in the game, in the same "session".

Ever played or bet money on

On average, people who were classified as problem or pathological gamblers had tried more types of gambling (6.6 and 7.4 respectively, out of a possible 13), than those who were classified as having no problems (4.8).

Those with problems were more likely to have tried all gambling activities, except other lotteries/raffles and overseas casinos. Pathological gamblers were more likely, even than problem gamblers, to have bet on horse or dog races.

Table 4: Ever played or bet money on - by Lifetime Prevalence

Have ever played or bet money on ...	Lifetime Prevalence *		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	94	99	97
Lotto	86 →	96	96
Other lotteries/raffles	82	86	82
Money bets with friends	37 →	58	68
Football pools	12 →	22	36
Continuous (nett)	85 →	98	99
Instant Kiwi	67 →	84	83
Other instant scratch tickets	21 →	39	42
Housie, played for money	17 →	31	42
Betting on horses/dogs	44 →	58 →	75
Gaming machines	39 →	62	65
Overseas casinos	26	25	28
Card games, for money	18 →	48	59
Dice games, for money	10 →	24	34
Gaming/casino evenings	19 →	27	32
Base	3721	170	109
Average number tried	4.8	6.6	7.4

→ arrows denote a difference between the two figures that is significant at 95% confidence.

* Based on 'ever' SOGS scores

Those classified as current problem or pathological gamblers were more likely than the no problem group to have tried every gambling activity considered, except for the other lotteries and raffles category.

Table 5: Ever played or bet money on - by Current Prevalence

Have ever played or bet money on	Current Prevalence †		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	**94**	**99**	**98**
Lotto	86 →	95	98
Other lotteries/raffles	82	84	81
Money bets with friends	38 →	60	71
Football pools	12 →	24 →	46
Continuous (nett)	**86**	**99**	**100**
Instant Kiwi	67 →	90	96
Other instant scratch tickets	22 →	44	55
Housie, played for money	17 →	31 →	52
Betting on horses/dogs	44 →	60	74
Gaming machines	40 →	55 →	74
Overseas casinos	26	22	33
Card games, for money	20 →	36 →	68
Dice games, for money	11 →	20 →	36
Gaming/casino evenings	19	24	32
Base	3869	*82	*49
Average number tried	4.8	6.5	8.2

* Caution: small base
† Based on 6 month SOGS scores

Current pathological gamblers were significantly (at 95% confidence) more likely than others to have ever bet on gaming machines, card and dice games, Housie and football pools.

Bet on/Played in past 6 months

Those who were classified as problem or pathological gamblers were more likely to have taken part in both continuous and non-continuous gambling activities in the past 6 months.

Recent participation in betting on horse or dog races, football pools, card games, other instant scratch tickets and other lotteries or raffles, was a particular feature of the pathological gambler group.

Table 6: Played or bet money on in past 6 months - by Lifetime Prevalence

Have played or bet money on in past 6 months ...	Lifetime Prevalence *		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	**87** →	**94**	**92**
Lotto	77 →	90	90
Other lotteries/raffles	56	59	(67)
Money bets with friends	14 →	37	48
Football pools	3 →	7 →	18
Continuous (nett)	**61** →	**88**	**90**
Instant Kiwi	50 →	69	71
Other instant scratch tickets	10 →	18 →	29
Housie, played for money	2 →	9	15
Betting on horses/dogs	13 →	36 →	56
Gaming machines	14 →	33	44
Overseas casinos	3	3	3
Card games, for money	4 →	15 →	26
Dice games, for money	1 →	7	10
Gaming/casino evenings	2 →	6	3
Base	3721	170	109
Average number played	2.5	3.9	4.8

Note: (67) indicates significant difference of pathological from no-problem group in this case, at 95% confidence

* Based on 'ever' SOGS scores

Current problem and pathological gamblers have almost all taken part in both continuous (98%) and non-continuous (95%) gambling in the past 6 months. Together, these two groups have recently taken part in 5.1 activities, compared to 2.5 in the no problem group.

Table 7: Played or bet money on in past 6 months - by Current Prevalence

Have played or bet money on in past 6 months ...	Current Prevalence †		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	87 →	96	93
Lotto	77 →	91	93
Other lotteries/raffles	56 →	71	75
Money bets with friends	15 →	36 →	60
Football pools	3 →	11 →	27
Continuous (nett)	62 →	98	98
Instant Kiwi	50 →	82	88
Other instant scratch tickets	10 →	30	39
Housie, played for money	3 →	13	23
Betting on horses/dogs	14 →	44 →	65
Gaming machines	15 →	36 →	62
Overseas casinos	3	2	4
Card games, for money	4 →	20 →	38
Dice games, for money	1 →	14	10
Gaming/casino evenings	2	4	7
Base	3869	*82	*49
Average number played	2.5	4.5	5.9

* Caution: small base
† Based on 6 months SOGS scores

Recent participation was higher for those with current gambling problems (either problem or pathological) on all activities considered, except casinos and casino evenings. However, there were a number of activities which discriminated the pathological from the problem group, viz. money bets with friends, football pools, horse/dog racing, gaming machines and card games.

Regular Participation

In the whole sample, 45% (± 1.5%) indicated that they regularly take part in non-continuous betting activities, once a week or more often. Overall, 18% (± 1.2%) indicated regularly weekly participation in continuous betting activities.

Those classified as problem or pathological gamblers were more likely to be weekly participants in both gambling categories. However, their level of participation in continuous gambling was more than 3 times higher than the non problem group (vs less than 2 times higher for non-continuous activities).

Also, weekly participation in continuous gambling activities was significantly higher in the pathological group than in the problem group, with Instant Kiwi, horse/dog racing, gaming machines and football groups particularly discriminating between the two groups.

Table 8: Take part regularly - by Lifetime Prevalence

Take part in regularly, once a week or more often	Lifetime Prevalence *		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	44 →	61	70
Lotto	41 →	58	69
Other lotteries/raffles	6	10	14
Money bets with friends	2	5	11
Football pools	-	- →	7
Continuous (nett)	15 →	44 →	72
Instant Kiwi	11 →	25 →	44
Other instant scratch tickets	1	4	9
Housie, played for money	1	4	5
Betting on horses/dogs	3 →	17 →	38
Gaming machines	2 →	12 →	31
Overseas casinos	-	-	-
Card games, for money	1	7	6
Dice games, for money	-	2	-
Gaming/casino evenings	-	1	-
Base	3721	170	109
Average number played regularly	0.7 →	1.5 →	2.3

* Based on 'ever' SOGS scores

The small group of current pathological gamblers took part, on average, in almost 3 gambling activities per person on a regular weekly basis.

Lotto and Instant Kiwi were the only activities which attracted weekly participation from more than 10% of the no problem group.

The current problem and pathological groups were more regular participants in almost every form of gambling considered. The current pathological group were further distinguished by their high level of regular participation in continuous activities, in particular Instant Kiwi and gaming machines.

Table 9: Take part regularly - by Current Prevalence

Take part in regularly, once a week or more often	Current Prevalence †		
	No Problem %	Problem %	Pathological %
Non Continuous (nett)	44 →	69	73
Lotto	41 →	64	73
Other lotteries/raffles	7	12	17
Money bets with friends	2 →	10	13
Football pools	- →	5	8
Continuous (nett)	16 →	58 →	91
Instant Kiwi	11 →	40 →	58
Other instant scratch tickets	1 →	11	10
Housie, played for money	1 →	8	8
Betting on horses/dogs	3 →	25	41
Gaming machines	2 →	22 →	51
Overseas casinos	-	-	-
Card games, for money	1 →	6	12
Dice games, for money	-	2	-
Gaming/casino evenings	-	-	-
Base	3869	*82	*49
Average number played regularly	0.9	2.1	2.9

* Caution: small base
† Based on 6 months SOGS scores

If we divide the sample on the basis of regular participation in continuous gambling or not, we find that .....

- 48% of all respondents took part in at least one of the gambling activities on a regular weekly basis.
- regular weekly gamblers were much more likely to be non-continuous than continuous gamblers (30% vs 18%).

This balance in favour of non-continuous gambling was reversed amongst the problem groups identified.

In the lifetime prevalence groups .....

- 72% of probable pathological gamblers were regular participants in continuous gambling, vs only 11% who were regular non-continuous players.
- 44% of problem gamblers were regular continuous players, vs 27% who regularly participate only in non-continuous gambling.

Amongst the current prevalence groups*, these trends were even more pronounced.

Clearly, regular weekly participation in continuous gambling activities was a characteristic of both pathological and probable problem gamblers, but this continuous gambling was in addition to, rather than instead of, the non-continuous activities.

Table 10: Continuous vs Non-Continuous Gamblers

Gambling Involvement	Total %	Lifetime Prevalence			Current Prevalence		
		No Prob. %	Prob. %	Path. %	No Prob. %	Prob.* %	Path.* %
Regular, continuous†	18	15	44	72	16	58	91
Regular, non-continuous only	30	31	27	11	31	23	6
None played regularly	41	43	26	13	42	18	4
None in past 6 months	6	6	3	3	6	-	-
None ever	5	5	-	-	5	-	-
Base	4000	3721	170	109	3869	*82	*49

* Caution: small base

† regular continuous gamblers might also have participated in non-continuous activities on a regular weekly basis

Expenditure

On an average per person basis, those in our lifetime prevalence groups spent ...

- $74 in a typical month for problem gamblers,
- $162 in a typical month for probable pathological gamblers.

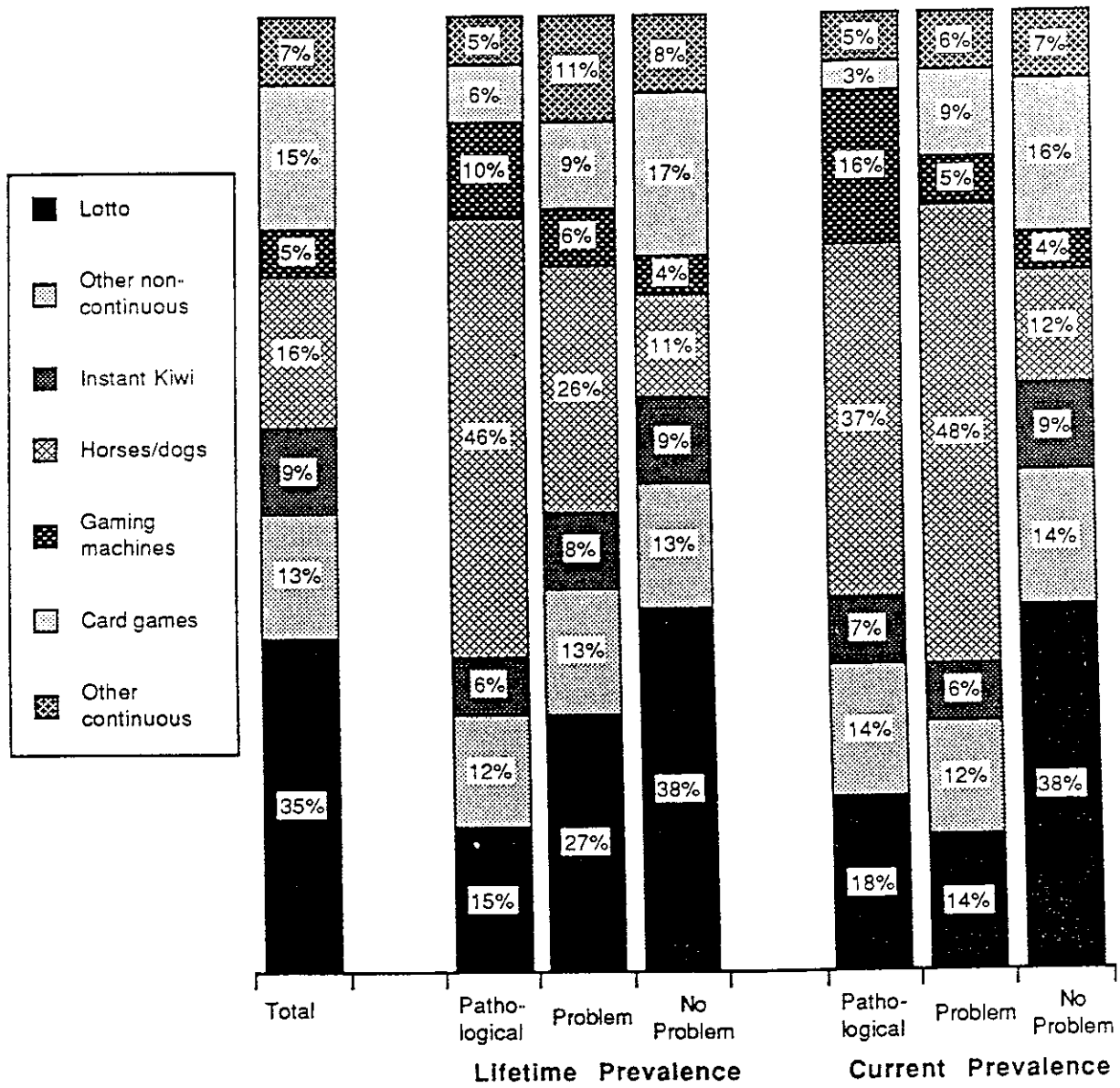
This compared to $31 per person for the rest of the sample, and a population average overall of $37 per person.

As discussed previously, 35% of gambling expenditure was spent on Lotto, with an average of $13 per person in a typical month. This average monthly expenditure on Lotto rose to $20 per person in a problem group and $24 in the pathological group. However, the proportion of gambling expenditure allocated to Lotto declined sharply in these two groups, to 27% and 15% respectively.

This decline was compensated by a sharp rise in the proportion of spend allocated to horse or dog racing, which rose from 11% in the no problem group, to 26% in the problem group and 46% in the pathological group.

In the current problem groups, both problem and pathological gamblers allocated a high proportion of their expenditure to horse/dog racing, while gaming machines show a sharp increase in share amongst current pathological gamblers.

Fig.28 % of Gambling Expenditure



Those who were classified as being problem gamblers, or probable pathological gamblers, spent more per person, on average on every gambling activity which was considered. However, it was their expenditure on horse or dog racing which most strongly differentiated the problem and pathological groups (spending $19 and $75 per person respectively) from the "no problem" group (spending $3 per person). At a lower level, a similar effect was apparent in the expenditure on gaming machines.

It was their expenditure on horse/dog racing, gaming machines and continuous activities other than Lotto, that significantly differentiated the pathological group from the problem group.

Table 11: Expenditure

Average spent per person in a typical month	Total $	Lifetime Prevalence			Current Prevalence		
		No Prob. $	Problem $	Patho-logical $	No Prob. $	Problem $	Patho-logical $
Non Continuous (nett)	17	16 → 29 → 44			18 → 40		48
Lotto	13	12 → 20		24	13	21	27
Other non continuous	4	4 → 9 → 20			5 → 19		21
Continuous (nett)	19	15 → 45 → 119			15 → 119		104
Instant Kiwi	3	3	6	9	3 → 10		10
Horse/dog races	6	3 → 19 → 75			4 → 76 ← 56		
Gaming machines	2	1 → 5 → 17			1 → 8 → 24		
Card games	5	5	7	11	5 → 15		5
Other continuous	3	3 → 8		7	2 → 10		9
Base	4000	3721	170	109	3869	*82	*49

* Caution: small base

Based on these findings, we conclude that problem and pathological gamblers become indiscriminately more involved in all types of gambling activities. However, they were typically high spenders on horse/dog racing, and to a lesser extent, on gaming machines.

Preferred Gambling Activities

In the overall sample, 36% of the respondents preferred a non-continuous gambling activity, 35% a continuous gambling activity, and 25% had no favourite.

These figures changed significantly amongst those in the problem and pathological groups, who were more likely to prefer a continuous gambling activity by a high margin (64% vs 29% for the problem group; 71% vs 23% for the pathological group)

Only 6% of the problem and pathological groups said that there was no preferred single gambling activity (vs 26% amongst the no problem group).

Respondents were also asked to say which gambling activities they particularly enjoyed. Those in the two problem groups named, on average, 1.8 activities per person, vs 1.1 in the no problem group, confirming our view that they have a wider repertoire of gambling activities

Table 12: Preferences

	Most Preferred Activity				Activities Particularly Enjoyed*			
		Lifetime Prevalence				Lifetime Prevalence		
	Total %	No Prob %	Prob. %	Patho-logical %	Total %	No Prob %	Prob. %	Patho-logical %
Non Continuous (nett)	**36**	**37** ←	**29**	**23**	**48**	**48**	**57**	**55**
Lotto	28	29	24	19	40	39	49	46
Other non continuous	8	8	5	4	14	14	20	24
Continuous (nett)	**35**	**32** →	**64**	**71**	**46**	**44** →	**77**	**82**
Instant Kiwi	7	8 ←	3	7	16	16	16	24
Horse/dog races	12	11 →	25 →	41	17	15 →	34 →	49
Gaming machines	5	5 →	14	9	9	9 →	21	18
Card games	4	3 →	11	9	6	4 →	18	21
Other continuous	7	5 →	11	5	11	10 →	20	14
No favourite	**25**	**26** ←	6	6	**25**	**26** ←	6	6
Base	4000	3721	170	109	4000	3721	170	109

* includes most preferred activity.

☐ denotes figures significantly lower than the overall sample (at 95% confidence)

Reasons for Gambling

People classified as problem and pathological gamblers were more likely than others to cite the urge to win, and entertainment or fun, as the reasons why they participated in gambling activities. The pathological group was also more likely to mention the excitement or challenge as a reason.

These two problem groups were significantly less likely than others to say that they gamble to support worthy causes/charities.

In the small group of current pathological gamblers, the excitement/challenge and the desire to win were stronger reasons, while this group was less likely to gamble for social reasons, or to support worthy causes.

Table 13: Reasons for Gambling

	Total %	Lifetime Prevalence			Current Prevalence		
		No Prob. %	Problem %	Patho-logical %	No Prob. %	Problem %	Patho-logical %
Socialising	15	15	16	10	15	20	[4]
Excitement/challenge	15	14	22	(31)	14	17	(38)
To win money	57	56	(68)	(68)	56	63	(76)
To support worthy causes	19	20	[3]	[10]	19	[4]	[4]
For entertainment/fun	30	29	(42)	(41)	30	36	42
As a hobby/habit	7	6	11	11	6	(15)	9
Curiosity	2	2	-	1	2	-	-
Others	7	7	5	4	7	9	3
Don't know	2	3	1	-	3	-	-
Base	4000	3721	170	109	3869	*82	*49

( ) denotes figures significantly higher than the overall sample (at 95% confidence)

[ ] denotes figures significantly lower than the overall sample (at 95% confidence)

* Caution: small bases

* * * * *

DISCUSSION

This section selects some of the major findings for further comment. Comparisons are made with the results of recent United States surveys, the only other country to date where large representative surveys have been conducted using similar methodology.

Response Rates

The response rate of 66% was satisfactory and comparable with rates for previous New Zealand telephone and face-to-face surveys on health and social issues (Black & Caswell, 1990). Volberg's recent prevalence surveys of compulsive gambling using the South Oaks Gambling Screen in six American States have been mentioned earlier. The response rates in all of Volberg's surveys were similar to the rates for telephone surveys on other sensitive topics in the United States. The response rates were 76% in Iowa, 73% in California, 69% in Massachusetts, 66% in Maryland and 65% in New Jersey. The response rate of 66% among New Zealand respondents is thus close to the response rates among American respondents.

Gambling Activities and Involvement

The levels of gambling involvement among the respondents in the various major forms of gambling are similar to those found in the 1990 survey conducted on behalf of the Department of Internal Affairs. The estimate of total annual expenditure for the adult population based on the survey findings is very close to the recent Department of Statistics estimate. These similarities increase our confidence in the validity of the survey findings generally. The larger sample size in the current survey relative to the Internal Affairs survey enabled more fine-grained comparisons to be made between socio-demographic groups with respect to gambling participation and expenditure. High levels of gambling participation were evident, with over 95% of the sample acknowledging having gambled on at least one activity at some time, and over half engaging in gambling at least weekly.

Although large numbers of people from all walks of life regularly participate in gambling activities, significantly higher levels of participation were found among young people, males, unemployed people and Pacific Islanders Maori were also over-represented. These groups were also more likely to be regularly involved with betting on continuous forms of gambling, e.g. gaming machines, Instant Kiwi, and horses/dogs.

It would appear that while involvement in and expenditure on gambling activities has increased markedly in New Zealand during the past few years, in contrast to the previous decade when expenditure remained relatively constant in inflation-adjusted terms, this increased involvement has been greater in the case of the groups just mentioned.

Comparing Gambling Involvement in New Zealand and the U.S.A.

Gambling in the United States varies greatly. In the 1970s, as states experienced increasingly serious financial difficulties associated with cutbacks in federal funding, state legislatures around the country began to legalise many types of gambling. Between 1975 and 1988, 32 states authorised state-run lotteries (Migoya & Lafleur, 1989) In 1976, New Jersey became the first state besides Nevada to legalise casinos. In 1990, six states legalised video lottery terminals. In 1991, riverboat casino gambling became legal in Iowa, Illinois and Mississippi Saloons with card games and slot machines are now legal in Colorado and South Dakota At least two states are known presently to be considering legalising sports betting and in the wake of the Indian Gaming Regulatory Act of 1988, seven state governments have established compacts with Native American tribes. These compacts allow sizable gaming operations (including casino table games and slot machines as well as high-stakes bingo) on tribal lands. In 1989, Americans wagered $290 billion on legal and illegal games, almost as much money as was appropriated for the Department of Defence that same year (Christiansen, 1990; Frias, 1990).

All of the states surveyed by Volberg have legal bingo gambling, and Maryland, Iowa and California have legal card rooms. In addition to the casinos legalised by New Jersey in 1976, the state of Iowa now licenses riverboat gambling cruises and Connecticut will soon have a casino run by the Mashantucket Pequot tribe on its reservation lands. Slot machines are legal in Maryland and New Jersey. All of the states surveyed by Volberg have legal pulltab games except New Jersey. All of the states, including New Jersey, have legal state-run lotteries, including instant, daily and weekly games. Parimutual wagering on dogs and/or horses, as well as intertrack wagering, is also legal in every state surveyed.

Despite the recent wide availability of gambling in the United States, 13% of the United States respondents (N=5500) stated that they had never tried any of the 10 types of gambling about which they were questioned. In contrast, among the New Zealand respondents, only 4 5% of the respondents had never gambled. The New Zealand survey gathered data with much greater detail about respondents' involvement in different gambling activities. The involvement of the American survey respondents can only be compared to New Zealand according to whether they had ever tried various types of gambling. These comparisons should be regarded with caution, since even types of gambling that are called similar names are not necessarily identical However, it would seem that overall, levels of involvement between the two countries are not very different. In comparing the lifetime gambling involvement of New Zealand and American respondents, Volberg re-coded much of the U.S. data to correspond as closely as possible with the types of gambling available to New Zealanders.

Table 14 Lifetime Participation in Gambling Types: N.Z. & United States

Respondents Who Had Ever:	U.S. (N=5500) %	N.Z. (N=4000) %
Played the lottery or numbers	71	87[a]
Been to a casino	53	26
Played bingo (housie)	36	18
Played cards for money	38	21
Bet on horses or dogs	35	45
Played on gambling machines	52	41
Placed dice for money	14	11
Wagered on sports events	27	

[a] Lotto

Problem and Pathological Gambling: Prevalence Rates

The current and lifetime prevalence rates found in this survey, for both problem and pathological gamblers, were considerably higher than we had expected. Six month prevalence data are not yet available for other countries, although studies are currently under way in both the United States and Australia using instruments that will yield this information. Considering the lifetime prevalence rates, they are clearly much higher than in the United States. Indeed, the rates for pathological gambling are almost double the rates found for most U.S. States surveyed to date (see Table below). While this may be an indication of a more serious problem among New Zealand residents, it also seems possible that these differences are partly explained by cultural differences. Since this is the first time that the South Oaks Gambling Screen has been administered outside of North America, it is important to treat these data with caution. It may be that these higher prevalence rates are an artifact of the greater willingness to admit to the potentially stigmatizing behaviours associated with problem and pathological gambling. This could be a cultural difference, perhaps related to the greater commitment to organised religion in the United States now and in the past. Alternatively, extension of the questionnaire used in the New Zealand survey to include more detailed exploration of respondents' involvement in different types of gambling may have influenced responses to the SOGS items which followed the involvement questions. The context in which questions are asked can influence responses given.

Lifetime prevalence rates are the only rates that can be compared with all of the U.S. surveys. Lifetime prevalence of problem and pathological gambling vary across the United States. As the table below indicates, prevalence rates of problem and pathological gambling are higher in the Northeastern states and in California and lower in the one Midwestern state that was surveyed. Much of the difference in the United States prevalence rates is primarily due to the greater heterogeneity of the population in the coastal states, as well as the greater degree of urbanisation in these states. In addition, legal opportunities to gamble have been available for much longer to residents of the coastal states. Apart from moderately higher rates in Auckland relative to other parts of the country, urbanisation effects were not evident in New Zealand. This regional difference is probably largely a consequence of the large Maori and Pacific Island population in Auckland. The lack of variation in other parts of New Zealand might reflect the relatively uniform availability of gambling opportunities and gambling involvement throughout the country.

Table 15 Lifetime problem and pathological gambling prevalence rates: New Zealand and U.S. States

Lifetime Prevalence Rates:	Problem %	Pathological %	Overall %
Massachusetts (Northeast)	2.3	2.1	4.4
New York (Northeast)	2.8	1.4	4.2
New Jersey (Northeast)	2.8	1.4	4.2
California (West)	2.9	1.2	4.1
Maryland (Northeast)	2.4	1.5	3.9
Iowa (Midwest)	1.6	0.1	1.7
New Zealand	4.2	2.7	6.9

It is important to treat the prevalence estimates with some caution until Phase Two of the present survey has been completed. Phase Two will provide information relating to the validity of using the modified South Oaks scale in the general New Zealand population. It should also allow a check on the possibility of false positives (i.e. misidentifying of non-problem gamblers as pathological or problem gamblers) having been generated. This is always possible, indeed to be expected, when clinically derived measures of relatively rare disorders are used in general population surveys.

Comparing Scores on the South Oaks Gambling Screen

It is possible to compare the rates at which respondents answered positively to specific items from the South Oaks Gambling Screen. This comparison provides insight into the numbers of U.S. and N.Z. respondents who were willing to admit to increasingly problematical behaviours associated with their gambling.

Table 16 Responses to South Oaks Gambling Screen Items New Zealand and United States

	U.S. (N=5500) %	N.Z. (N=4000) %
Positive responses to SOGS Items		
Go back another day to win back $	2	4
Claimed to win but in fact lost	4	5
Spend more time or $ than intended	12	12
People criticised gambling	5	7
Ever felt guilty about the way you gamble	7	7
Wanted to stop gambling but could not	3	3
Hidden evidence of gambling	2	3
Had arguments with family about gambling	1	2
Missed time from work/school due to gambling	0.5	2
Borrowed $ and not paid it back due to gambling	0.4	0.9
Ever Borrowed to Gamble/Pay Gambling Debts		
From household money	0.6	4
From spouse or partner	0.5	6
From relatives or in-laws	0.9	3
From banks, loan companies, credit unions	0.4	0.1
Cash withdrawals on credit cards	0.4	2
Loans from loan sharks	0.2	0.1
Cashed in stocks, bonds, shares	0.2	0.1
Sold personal or family property	0.2	0.1
Borrowed from checking account	0.3	0.4

It is interesting to note that New Zealanders were slightly more willing than Americans to admit to some of the behaviours associated with problematic gambling. However, the rate of positive responses to many of these items are strikingly similar.

For the most part, New Zealanders appear much more willing to admit to having borrowed money to gamble or to pay gambling debts from household funds, from a spouse or partner, from relatives and from credit card accounts.

Although cultural context effects may have contributed to the higher survey scores relative to the U.S. studies, this does not necessarily mean that the New Zealand results are less valid. It is highly probable that at least some people with gambling problems are likely to hide or deny them in interview situations. Unless we believe that large numbers of New Zealand respondents said they had problems that they in fact did not experience, it may well be that we in fact have a more accurate measure of the prevalence of pathological and problem gambling, and that the U S results are under-estimates. Therefore, Phase Two of the present investigation, which will involve in-depth interviews with 200 Phase One respondents, including people classified as probable pathological gamblers, should help to clarify the matter. In addition to collecting more detailed information about the respondents, interviewers will make DSM-IIIR diagnoses based on their overall observations. As a precaution to prevent bias, the interviewers will not know the respondents' Phase One SOGS score at the time they make their assessments.

Demographics of Problem and Pathological Gamblers

Despite differences in the lifetime prevalence rates for problem and pathological gambling, there are striking similarities between the respondents from the United States and those from New Zealand who scored as problem and probable pathological gamblers. The greatest difference between the two groups of problem and probable pathological gamblers lies in their age. Problem and probable pathological gamblers in New Zealand are much more likely than those in the United States to be under 30 years of age.

Table 17 The Demographics of Problem and Pathological Gamblers in New Zealand and the United States

Demographics	U.S. (N=210) %	N.Z. (N=279) %
Male	70	70
Not White	36	41
Under 30 years old	37	50
Not married	57	55
Parental gambling problem	11	10

Problem and pathological gamblers in both countries are more likely than the general population to be male, non-White and not married (this includes respondents who are single, separated, divorced and widowed, as well as those who live in de facto relationships). Problem and probable pathological gamblers in both countries are also significantly more likely than other respondents to believe that one or both parents has at some time experienced gambling-related problems.

Unemployment and lack of education/income are additional significant correlates of problem and pathological gambling in New Zealand. These, and the variables listed in the Table are also correlates of heavy involvement in gambling activities.

Comparing Gambling Involvement of Problem/Pathological Gamblers

As noted earlier, the New Zealand survey collected far more detailed information about respondents' involvement in gambling than the surveys in the United States, and this complicates direct comparisons between the data from the two societies. Comparisons between New Zealand and the United States are further complicated by the fact that each state has somewhat different mixes of legal and illegal gambling activities, many of which are not really comparable to the types of gambling done in New Zealand. However, there are several parallels between the gambling involvement of problem and pathological gamblers in the two countries. For example, as is the case in New Zealand, respondents in the United States surveys who scored as problem and probable pathological gamblers are significantly more likely than other respondents to have participated in numerous types of gambling activities.

There were also some differences to report in data from the present study. Non-continuous forms of gambling in the United States include lotteries, bingo and sports wagering. Continuous forms of gambling include casino and gambling machine play, betting on horses or dogs, card games, dice games and betting on games of skill such as pool, golf and bowling. While American respondents who scored as problem or probable pathological gamblers were significantly more likely than the no-problem group to have tried every type of gambling, the greatest differences were found in their involvement in cards, games of skill, dice and sports. This is an interesting contrast to the New Zealand survey, where pathological gamblers were more likely than any other group to bet on horses or dogs.

Table 18 Forms of Gambling Involvement by Problem & Pathological Gamblers in the United States

Form of Gambling	No Problem %	Problem %	Pathological %
Non Continuous (nett)	**80**	**97**	**100**
Lottery	70	84	89
Bingo	35	49	54
Wagered on sports events	26	57	74
Continuous (nett)	**73**	**95**	**97**
Been to a casino	52	75	76
Played on gambling machines	51	68	75
Played cards for money	36	64	86
Bet on horses or dogs	34	51	71
Played games of skill for money	19	46	61
Played dice for money	12	31	61
Average Number of Wager Types Tried	3.54	5.49	6.68
Base	5290	138	72

Changes in Problem/Pathological Gambling Throughout Life

The difference between the lifetime and current prevalence figures are of interest. They suggest that for the majority of pathological gamblers, their problems persist for a considerable period of time. A sizable minority, however, apparently overcome their problems without the help of therapy or self help groups such as Gamblers Anonymous, given that access to appropriate treatment and support is not available in many, if not most, parts of the country. Still others apparently move from pathological to problem gambling status over time. Phase Two should provide additional information on these matters, although longitudinal surveys are required to obtain a comprehensive view of the life course of these problems and responsiveness to therapy and other factors.

Changes in Problem/Pathological Gambling Over Time

Given that previous studies comparable to that reported here have not been undertaken in New Zealand, it is not known to what extent serious problems associated with excessive gambling have increased in this country during recent years. However, given the socio-demographic profile of problem and pathological gamblers and the similarity of this profile to that of people who gamble frequently, it would appear highly probable that prevalence rates have increased significantly in recent years, perhaps especially among young Maori and Pacific Island people on low incomes or unemployed Rates for these groups appear to be very high indeed. It would also appear that some of the recently legalised forms of gambling, e.g gaming machines and perhaps Instant Kiwi, have played a role in the development of problem and pathological gambling, joining betting on horses and dogs as types of gambling most frequently associated with excessive and pathological gambling.

It is anticipated that the introduction of casinos, increased competition between and aggressive marketing of extant forms of gambling, will lead to further increases in the prevalence of pathological and problem gambling in this country during the next ten years. Increases in the number of people within the population who belong to the most at risk groups can also be expected to add to problem levels. For example, further rises in unemployment and increases in the Pacific Island and Maori populations.

Repetition of the present survey in three to four years time would enable changes in prevalence, as well as access to appropriate services for those experiencing problems, to be measured. The present survey also helps pinpoint groups of people and forms of gambling that would be logical targets for interventions that might reduce problem levels within the country. These and related issues will be covered more fully in the Phase Two report.

* * * * *

CONCLUSION

Prevalence

Extrapolating from the survey data to the population at large, it would appear that significant numbers of New Zealanders, somewhere between 125,000 and 174,000 people aged 18 years and over, have at some stage met the criteria for classification as a problem or pathological gambler. For many, probably most of these people, their distress and the disruption that it causes to themselves and the lives of others within their families and social networks, will be of long duration.

Currently a smaller number, estimated at 55,000 to 86,000 adults, will be problem or pathological gamblers. Most of these people do not acknowledge that they have gambling-related problems.

These findings suggest problem levels considerably higher than those found in previous surveys in North America where similar survey procedures were used. They are much higher than we anticipated, and should be treated with caution until Phase Two of the present study has been completed.

Demographics

While excessive gamblers are a diverse group coming from all walks of life, a number of demographic, social and gambling participation variables have been shown both here and in the United States to be very strongly associated with and predictive of problem and pathological gambling. These include being under 30 years of age, non-white (in New Zealand of Pacific Island or Maori ethnicity), unemployed, not married, and having one or more parents with gambling problems. The numbers of people who fall into most of these categories have increased in recent years and will continue to do so. The problem rates for young people and non-whites appear to be much higher in New Zealand than in American States surveyed to date. Among other things, this suggests that problems can and do develop more rapidly than has traditionally been thought to be the norm and that prevalence levels have risen in recent years, especially among young, marginalised groups of people.

Gambling Activities

It appears that regular involvement in certain forms of gambling activities, especially betting on horses/dogs, the recently introduced gaming machines and perhaps Instant Kiwi, increase the risk of being a problem or pathological gambler. Longitudinal studies are required to clarify whether or not these associations are causal.

Baseline

The results of Phase One of the present survey provide baseline measures of gambling activities generally as well as index problem and pathological gambling within the general New Zealand population aged 18 years and over. By repeating the study in the future, it will be possible to determine changes in gambling activities, problem levels and in related areas of interest to health workers, policy makers and others. Given that casinos will shortly be established, and considering the findings of the survey generally in relation to social and economic trends, the researchers anticipate that the prevalence of excessive gambling will increase in the foreseeable future and that the various associated health, social and financial costs will similarly grow steadily.

Further Investigation

The survey findings pose a number of questions that require further investigation by researchers. Some have been mentioned. One area of particular interest concerns the development and life course of gambling problems including transitions between problem, pathological and no problem status. Phase Two of the present study will provide information concerning factors associated with both problem development and transition between states. Prospective longitudinal surveys will be necessary to provide a more comprehensive picture of the life course of problem and pathological gambling, including variables which have positive and negative effects.

Policy

Although the majority of people now recognise that some people experience serious problems in association with gambling, and believe that help should be available, specialist treatment and support facilities are known to be almost non-existent. Phase Two of the present study will examine this issue by identifying what treatment problem and pathological gamblers have received and are currently receiving.

The researchers conclude that the findings of the survey, especially those relating to high risk groups, could be used to assist in the development and targeting of health education, prevention, early intervention and treatment programmes. The survey also gives baseline data that could assist in the future evaluation of the impact of any such initiatives on problem levels or access to services by those in need.

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APPENDIX ONE

SURVEY INSTRUMENT

91/174 JULY 1991

GAMBLING

RECORD START TIME: _____ INT. NUMBER: _____

"Good morning/afternoon/evening, my name is Mr(s) Xxx from National Research Bureau, the market research company. We are doing a survey, and would like to include your household. For this survey, I need to speak to the person aged 18 years or older, who has the next birthday. Is that person available now?"

(IF AVAILABLE, ASK TO SPEAK TO HIM/HER)

(IF NOT AVAILABLE, ASK: "When would be convenient for me to call back to speak to him/her?")

RECORD CALLBACK DAY: _____ TIME: _____

(2ND TRY) DAY: _____ TIME: _____

(3RD TRY) DAY: _____ TIME: _____

(REINTRODUCE IF NECESSARY)
"The survey we are doing has to do with betting activities or games, in which there is an element of luck or chance. We are doing thousands of interviews such as this, throughout New Zealand. You have been randomly selected to take part. All your answers are absolutely confidential, and will be combined with other people in the sample for reporting purposes. The interview will take about 15 minutes.

Do you have time to take part now, or can you give me a more convenient time to call you back?"

Now → CONTINUE TO Q.1

Callback → DAY: _____

TIME: _____

INTERVIEWER NOTE:

If the person asks for whom the research is being done, you may tell them that the client is the Department of Internal Affairs.

Q.1 "People bet money on many different things, such as raffles, Lotto, housie, sports events, card games, and others. I am going to read out a list of these activities. Can you first tell me, for each one, whether you have ever spent money or bet on that activity?" (READ OUT a-n AND CIRCLE IN COLUMN Q.1.)

Activity	Q.1 Ever bet on this	Q.2 In past 6 months	Q.3 Record monthly $ spend	Q.4 Regularly once a week or more
a) "Lotto tickets"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
b) "Instant Kiwi tickets"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
c) "Other instant scratch tickets"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
d) "Other lotteries, or raffles of any kind"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
e) "Housie, played for money"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
f) "Betting on horse or dog races"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
g) "Gaming machines, such as one-armed bandits or slot machines"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
h) "Overseas casinos"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
i) "Card games, played for money"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
j) "Dice games, such as Crown & Anchor, played for money"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
k) "Gaming or casino evenings"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
l) "Money bets with friends or workmates on the outcome of some event"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
m) "Football pools"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1
n) "Any other gambling activities"	No=2 Yes=1	No=2 Yes=1 ☞ DK=3	$_____ DK = 3	No=2 Yes=1

(IF RESPONDENT HAS NEVER BET OR SPENT MONEY ON ANY OF THESE, GO TO Q.35)

Q.2 "I am now going to run through the list again. Can you tell me which of the activities you have bet or spent money on in the past 6 months?" (READ OUT a-n AGAIN, ONLY THOSE WHICH HAVE Yes=1 IN Q.1. CIRCLE ONE FOR EACH IN Q.2 COLUMN OF GRID ABOVE.)

Q.3 (ASK FOR EACH ACTIVITY PLAYED IN PAST 6 MONTHS)
"Can you give me an idea of the amount that you spend on ....<ACTIVITY> in a typical month? I am only looking for an approximate amount, rounded to the nearest $5 or so."
(RECORD $ AMOUNT FOR EACH WITH Yes=1 IN Q.2, IN Q.3 COLUMN OF GRID ABOVE)

Q.4 (ASK FOR EACH ACTIVITY PLAYED IN PAST 6 MONTHS) "And can you tell me which of these activities you usually take part in once a week or more often?" (READ OUT a-n AGAIN, ONLY THOSE WHICH HAVE Yes=1 IN Q.2. CIRCLE ONE FOR EACH IN Q.4 COLUMN OF GRID)

Q.5 "Thinking about the sorts of activities which I have mentioned, please tell me which is the gambling activity that you most enjoy doing?" (CIRCLE ONE ONLY)

Lotto - - - - - - - - - - 01	Card games - - - - - - - - - 09
Instant Kiwi - - - - - 02	Dice games - - - - - - - - - 10
Other scratch tickets- 03	Casino evenings - - - - - 11
Lotteries or raffles - 04	Betting on events - - - - 12
Housie - - - - - - - - - - 05	Sports or football pools - 13
Horse or dog races - - 06	Other (SPECIFY) _____
Gambling machines - 07	_____
Overseas casinos - - - 08	No favourite = 17 → GO TO Q.7

Q.6 "Are there any others that you particularly enjoy?" (CIRCLE ALL MENTIONED)

Lotto - - - - - - - - - - - - 01	Card games - - - - - - - - - - - 09
Instant Kiwi - - - - - - - 02	Dice games - - - - - - - - - - - 10
Other scratch tickets - 03	Casino evenings - - - - - - - 11
Lotteries or raffles - 04	Betting on events - - - - - - 12
Housie - - - - - - - - - - 05	Sports or football pools - - 13
Horse or dog races - - - 06	Other (SPECIFY) _____
Gambling machines - - 07	_____
Overseas casinos - - - - 08	(PROBE: "Any others?")

Q.7 "And can you tell me the reasons why you participate in these types of activities?" (RECORD FULLY, PROBING: "Any other reasons?")

_____

_____

_____

_____

Q.8 "The next set of questions is part of a standard measurement scale, which has been used in the U.S.A. and Australia in surveys similar to this one. There are no right or wrong answers to the questions that follow. We want to know how things have been in your experience. Please try to be as accurate as possible in your answers. Remember that all the information is absolutely confidential, and you will not be identified to our client or any other outside agencies."

Q.9 "When you participate in the gambling activities we have discussed, how often do you go back another day to win back money you lost? Is it .....?" (READ OUT ALL CHOICES AND THEN CIRCLE ONE ONLY)

"Never" - - - - - - - - - - - 1 →	SKIP TO Q.11
"Some of the time" - - - - - 2	
"Most of the time" - - - - - - 3 →	CONTINUE WITH Q.10
"Every time" - - - - - - - - - 4	
DO NOT READ OUT: DK/Refused — 5 →	SKIP TO Q.11

Q.10 "And how often have you done this in the last 6 months? Is it .....?"
(READ OUT ALL AND CIRCLE ONE ONLY)

"Never" - - - - - - - - - - - - 1
"Some of the time" - - - - - 2
"Most of the time" - - - - - - 3
"Every time" - - - - - - - - - 4
DO NOT READ OUT: DK/Refused --- 5

Q.11 "Have you ever claimed to be winning money from these activities when in fact you lost? Is it .....?" (READ OUT CHOICES AND CIRCLE ONE ONLY)

"Never" - - - - - - - - - - - - 1 → SKIP TO Q.13
"Half the time" - - - - - - - - 2
"Most of the time" - - - - - - - 3 → CONTINUE WITH Q.12
DO NOT READ OUT: DK/Refused --- 5 → SKIP TO Q.13

Q.12 "And how often have you done this in the last 6 months? Is it .....?"
(READ OUT ALL AND CIRCLE ONE ONLY)

"Never" - - - - - - - - - - - - 1
"Half the time" - - - - - 2
"Most of the time" - - - - - - - 3
DO NOT READ OUT: DK/Refused --- 5

Q.13 "Do you ever spend either more time or more money gambling than you intend?"
(CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.15

Q.14 "And have you done so in the past 6 months?"
(CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.15 "Have people ever criticized your gambling?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.17

Q.16 "And have people criticized your gambling in the past 6 months?"
(CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.17 "Have you ever felt guilty about the way you gamble, or about what happens when you gamble?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.19

Q.18 "Have you felt this way in the past 6 months?"
(CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.19 "Have you ever felt that you would like to stop gambling, but didn't think that you could?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.21

Q.20 "Have you felt this way in the last 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.21 "Have you ever hidden betting slips, lottery tickets, gambling money or other signs of gambling from your spouse or partner, children or other important people in your life?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.23

Q.22 "And have you done this in the past 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.23 "Have you ever argued with people you live with over how you handle money?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.26

Q.24 "Have these arguments ever centred on your gambling?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.26

Q.25 "Have you had any of those arguments about your gambling in the past 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.26 "We're almost through this section of the questions. Please remember that all the information is confidential, and you will not be identified to our client. Have you ever missed time from work, school or study due to gambling?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.28

Q.27 "And have you missed time from work, school or study due to gambling in the past 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.28 "Have you ever borrowed from someone and not paid them back as a result of your gambling?" (CIRCLE ONE ONLY)

Yes - 1 | No - 2 Refused - 3 → GO TO Q.34

Q.29 "And have you done so in the past 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.30 "I am going to read out a list of ways in which some people get money for gambling. Can you tell me which of these, if any, you have used to get money for gambling or to pay gambling debts?" (READ OUT a-i, CIRCLE ONE FOR EACH IN COLUMN Q.31)

	Q.30 Ever borrowed		Q.31 In past 6 months	
a) "Borrowed from household money"	No - 2	Yes - 1	No - 2	Yes - 1
b) "Borrowed from your spouse or partner"	No - 2	Yes - 1	No - 2	Yes - 1
c) "Borrowed from other relatives or in-laws"	No - 2	Yes - 1	No - 2	Yes - 1
d) "Loans from banks, loan companies, credit unions"	No - 2	Yes - 1	No - 2	Yes - 1
e) "Cash withdrawals on credit cards"	No - 2	Yes - 1	No - 2	Yes - 1
f) "Loans from loan sharks"	No - 2	Yes - 1	No - 2	Yes - 1
g) "Cashed in shares, bonds or other securities"	No - 2	Yes - 1	No - 2	Yes - 1
h) "Sold personal or family property"	No - 2	Yes - 1	No - 2	Yes - 1
i) "Borrowed from your cheque account by writing cheques that bounced"	No - 2	Yes - 1	No - 2	Yes - 1

INTERVIEWER: IF NO TO ALL, GO TO Q.32

Q.31 "And which of these sources of money have you used in the past 6 months for this purpose?" (READ OUT THOSE EVER USED, i.e. Yes = 1 IN Q.30, & CIRCLE ONE FOR EACH IN Q.31 COLUMN OF GRID ABOVE)

Q.32 "Did either of your parents ever have a problem with gambling?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Don't know/Refused - 3

Q.33 "Do you feel that you have ever had a problem with gambling?" (CIRCLE ONE ONLY)

Yes - 1 → Q.34

No - 2 Refused - 3 → GO TO Q.35

Q.34 "Do you feel that you have had a problem with gambling in the past 6 months?" (CIRCLE ONE ONLY)

Yes - 1 No - 2 Refused - 3

Q.35 "Finally, I need to ask you some general questions about yourself and your household to help us combine your answers with those of the other 4000 people being interviewed on this study."

Q.36 "What is your occupation?" (RECORD, PROBING IF UNCLEAR)

_____ Student/scholar = 1 Retired = 2

_____ Unemployed = 3 Homemaker = 4

Q.37 "And what is the occupation of the main income earner in your household?" (RECORD, PROBING IF UNCLEAR)

_____ Student/scholar = 1 Retired = 2

_____ Unemployed = 3 Homemaker = 4

Self = X

Q.38 "Are you presently .....?" (READ OUT ALL AND CIRCLE ONE)

"Married" - 1

"Living in a permanent/defacto relationship" - - 2

"Separated or divorced" - - - - - - - - - - - - - - - - - 3

"Widowed" - 4

"Single" - 5

DO NOT READ OUT: Refused - - - 6

Q.39 "And what is your religion?" (CIRCLE ONE ONLY)

Anglican - - - - - - - - - 1

Presbyterian - - - - - - 2

Roman Catholic - - - 3

Methodist - - - - - - - 4

Baptist - - - - - - - - - - 5

Christian (unspecified) - - 6

Other - - - - - - - - - - - - - - - 7

Refused - - - - - - - - - - - - 8

None - - - - - - - - - - - - - - - 9

Q.40 "Which of these ethnic groups best describes you?" (READ OUT ALL & CIRCLE ONE ONLY)

"New Zealand European or Pakeha" - - - - - - 1

"New Zealand Maori" - - - - - - - - - - - - - - - - 2

"Pacific Island group" - - - - - - - - - - - - - - - 3

"Some other group" (SPECIFY) _____

Q.41 "Now, about education .....?" (READ OUT a-e AND CIRCLE ONE FOR EACH)

(a) "did you attend secondary school?" - Yes = 1 No = 8

(b) "did you spend at least a year in 6th or 7th form?" - - - - - - - - - Yes = 2 No = 8

(c) "do you have a trade or technical qualification?" - - - - - - - - - - Yes = 3 No = 8

(d) "have you completed one or more years of university study?" - - Yes = 4 No = 8

(e) "have you completed a university degree?" - - - - - - - - - - - - - - Yes = 5 No = 8

DO NOT READ OUT: Refused education questions = 9

Q.42 "And which of these age groups do you fit into?" (READ OUT AS REQUIRED & CIRCLE ONE)

"18 - 24 years" - - - 1
"25 - 29 years" - - - 2
"30 - 39 years" - - - 3
"40 - 49 years" - - - 4
"50 - 64 years" - - - 5
"65 or over" - - - - - - 6

DO NOT READ OUT: Refused -- 7

Q.43 "And which of these categories best describes the total annual household income for all persons living in your household before tax is taken out?" (READ OUT AS REQUIRED & CIRCLE ONE)

"Less than $15,000" - - - 1
"$15,000 - $25,000" - - 2
"$25,000 - $35,000" - - 3
"$35,000 - $50,000" - - 4
"Over $50,000" - - - - - - 5

DO NOT READ OUT: Refused = 6

Q.44 "Can you tell me how many people, including children, live in this household?"

(CIRCLE) 1 2 3 4 5 6 +

Q.45 CIRCLE SEX OF RESPONDENT: Man = 1 Woman = 2

Q.46 CIRCLE PHONE BOOK YOU ARE USING

Northland - 01	Auckland - 02	Waikato, King Country, Thames Valley - 03
Bay of Plenty - 04	Gisborne - 05	Hawkes Bay - 06
Taranaki - 07	Wanganui - 08	Manawatu - 09
Wairarapa - 10	Wellington - 11	Nelson - 12
West Coast - 13	Blenheim - 14	Christchurch - 15
Oamaru/Timaru - 16	Dunedin - 17	Invercargill - 18

Q.47 CIRCLE WHETHER FREE-CALLING OR TOLL CALL (FROM MAIN CALLING AREA OF PHONE BOOK)

Free - 1 Toll - 2

Q.48 "Thank you for taking part in this survey. May I please have your name in case my supervisor needs to check that I have interviewed you?" (RECORD)

Respondent's Name (PRINT CLEARLY): _____

THANK & TERMINATE AND THEN COMPLETE DETAILS BELOW

Record telephone number you dialled: _____

RECORD FINISH TIME: _____

CERTIFICATION: I hereby certify that this is a true and accurate record of an interview conducted by me at the time and place specified. TICK WHEN CHECKED: ☐

Interviewer's Signature: _____ Date: _____

Interviewer's Name (PRINT CLEARLY): _____

Supervisor Sign: _____ Field Check: _____

APPENDIX TWO

METHODOLOGICAL DETAILS

APPENDIX 2: METHODOLOGICAL DETAILS

Outcome of calls made

As discussed, the sample was stratified by population within each of the 18 telephone directory areas. Small variations between the regional statistical boundaries and those of the telephone directory areas are acknowledged, but nevertheless, nationwide coverage was attained. The stratification was based on 1986 Census data, as the 1991 was not yet available.

An adaptation of random digit dialling was used, in an effort to include those who were not yet listed in the telephone directory, or who have unlisted numbers, but to minimise the number of ineligible (non-household) numbers called. To do this, we selected residential telephone numbers already listed in the white pages (in this case, using a sampling interval of every fifth number in a particular column of each odd-numbered page), and incremented the last digit by one to get the number called.

The yield from this pattern was as follows .....

• Total numbers used	9645	
• Couldn't contact (number doesn't exist or out of order)	1773	(18%)
• Business number	749	(8%)
• No eligible person in household (mostly due to screening for ethnic groups in the supplementary sample) [1]	215	(2%)
• No reply/unavailable after 6 calls to household and/or 3 calls to eligible person, if identified	693	(7%)
• Interviews achieved	4077	(42%)
• Refusals	2138	(22%)

As discussed, this represents a response rate of 66%. This is similar to the response rate achieved in similar studies overseas, and in New Zealand for surveys of health related behaviour.

While it is not possible to provide data about those who refused to take part, anecdotal evidence points to refusals coming both from those who were sensitive about the subject, and also from those who were disinterested because of lack of involvement.

Response rates

As discussed, the overall response rate was 66%, and in different areas it fluctuated as follows:

Auckland	61%
Wellington	61%
Christchurch	64%

Top North Island Provincial/Rural	66%
Lower North Island Provincial/Rural	68%
South Island Provincial/Rural	73%

1 In the process of selecting respondents for the supplementary Maori and Pacific Islander sample, the eligible person was identified, and then asked to say what his/her ethnic group is. At this stage, if he/she was not of the ethnic group sought, the household was deemed to have no eligible person.

Weighting

In that a sampling strategy of one person per household was applied, the sample achieved inevitably contained an over-representation of single person households, and an under-representation of large households. This has also, to some degree, influenced the under-sampling of people in the 18-24 year age groups who are more likely to live in larger households. The sampling pattern of one per household was set in consultation with the principal investigators, so as not to introduce the interaction of gambling activities within a household as a factor in this study.

In order to present results which are representative of the New Zealand adult population (within the constraints of telephone interviewing and the 66% response rate), it was therefore necessary to apply a weighting which corrected the household size imbalance in the sample.

A three dimensional matrix of weighting factors was set up to weight the sample according to the expected incidence of age, within gender, within household size. A summary of the weights applied across each of the variables is shown below. Details of the three dimensional table are available on request.

Table 19 Weighting Factors

	ACTUAL	EXPECTED	WEIGHT
BY GENDER			
Men	1843	1953	1.06
Women	2210	2047	0.93
BY AGE			
18-24 years	534	683	1.28
25-29 years	481	468	0.97
30-39 years	1005	872	0.87
40-49 years	739	646	0.87
50-64 years	731	766	1.05
65+ years	563	565	1
BY HOUSEHOLD SIZE			
1 Member	623	370	0.59
2 Members	1282	1197	0.93
3 Members	767	766	1.00
4 Members	797	851	1.07
5 Members	388	480	1.24
6 or More Members	196	336	1.71

In order to implement this weighting strategy, it was necessary to cull from the sample some 24 interviews, where the respondent had refused to give his/her age or household size. This left a usable 4053 interviews, being 53 in excess of the contracted number. Rather than cull the excess, these were taken into account in the weighting exercise, with the final sample weighted back to the required 4000 base size.

All information in this report has been based on weighted data, unless stated otherwise.

Questionnaire Pilot Study

The questionnaire was piloted firstly amongst 3 groups of 4-5 people, in an intensive workshop style discussion format, and subsequently in 10 telephone interviews. In both cases, participants were asked to say whether the questions were easily understood, and phrased in a way which allowed them to report their behaviour accurately.

Statistical Accuracy

All findings in the report have been subjected to significance tests (Chi square tests and other where appropriate) to determine their validity. A confidence limit of 95% was used in all cases, as is usual in this type of survey.

At 95% confidence, the error margins on figures are as shown below.

Table 20 Confidence Limits

		The figure reported (e.g. % prevalence)						
		1%	5%	10%	20%	30%	40%	50%
		99%	95%	90%	80%	70%	60%	50%
For sample	n=100	1.95	4.27	5.88	7.84	8.98	9.60	9.80
	n=200	1.38	3.02	4.16	5.54	6.35	6.79	6.93
	n=400	0.98	2.14	2.94	3.92	4.49	4.80	4.90
	n=1000	0.62	1.35	1.86	2.48	2.84	3.04	3.10
	n=2000	0.44	0.96	1.31	1.75	2.00	2.15	2.19
	n=4000	0.31	0.68	0.93	1.24	1.42	1.52	1.55

* * * * *

APPENDIX THREE

DETAILS OF SOUTH OAKS GAMBLING SCREEN

APPENDIX 3: DETAILS OF SOGS RESPONSES

The response to the South Oaks questions are shown below, to provide a fuller picture of the basis for the group classifications. (Table does not show 5% of sample who never bet)

Question	Answers	Ever %	In past 6 months %
• When you participate in gambling activities, how often do you go back another day to win back money you lost?	Never/No	78	82
	Some of the time	14	10
	Most of the time	3	3
	Every time	1	1
	DK/Refused	-	-
• Have you claimed to be winning money when in fact you lost?	Never/No	91	92
	Half the time	4	3
	Most of the time	1	1
	DK/Refused	-	-
• Do you spend either more time or more money gambling than you intend?	Yes	12	6
	No	84	89
	Refused	-	-
• Have people criticised your gambling?	Yes	7	4
	No	89	92
	Refused	-	-
• Have you felt guilty about the way you gamble, or what happens when you gamble?	Yes	7	4
	No	88	91
	Refused	-	-
• Have you felt that you would like to stop gambling, but didn't think that you could?	Yes	3	2
	No	93	94
	Refused	-	-
• Have you hidden betting slips, lottery tickets, gambling money, or other signs from your spouse or partner, children, or other important people in your life?	Yes	3	1
	No	92	94
	Refused	-	-
• Have you had arguments with the people you live with about money, that centred on your gambling?	Yes	2	1
	No	94	95
	Refused	-	-
• Have you missed time from work or school or study due to gambling?	Yes	2	1
	No	93	94
	Refused	-	-
• Have you borrowed from someone and not paid them back as a result of your gambling?	Yes	1	-
	No	95	95
	Refused	-	-

Question	Answers	Ever %	In past 6 months %
• Have you used the following as a source of money for gambling or to pay gambling debts?			
- borrowed from household money	Yes No	4 91	2 93
- borrowed from spouse/partner	Yes No	6 89	3 92
- borrowed from relatives/in-laws	Yes No	3 92	2 93
- loans from banks, loan companies	Yes No	- 95	- 95
- cash withdrawals on credit cards	Yes No	2 93	1 94
- loans from loan sharks	Yes No	- 95	- 95
- cashed in shares, bonds, etc.	Yes No	- 95	- 95
- sold personal or family property	Yes No	- 95	- 95
- borrowed from cheque account by writing cheques that bounced	Yes No	- 95	- 95
• Do you feel that you have had a problem with gambling?	Yes No Refused	2 93 -	- 95 -

Note: Some responses do not add to 95% due to rounding of small numbers to nearest whole %

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