

**PROBLEM GAMBLING AND SUICIDE: THE RELATIONSHIP BETWEEN  
PROBLEM GAMBLING, ALCOHOL MISUSE AND SUICIDE IN A  
POPULATION PRESENTING FOLLOWING AN EPISODE OF SELF-HARM**

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**A thesis submitted in partial fulfilment of the requirements for the degree of**

**Master of Health Sciences,**

**The University of Auckland, 2004**

**The University of Auckland**

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## **Abstract**

There has been a growing amount of research in recent years attempting to clarify the connections between problem gambling and suicide. Studies with problem gamblers investigating suicidal ideation and attempts establish strong links, and further evidence highlights the increased risk factor of alcohol in the equation.

The purpose of this exploratory study was to discover any connection between attempted suicide, problem gambling and alcohol in a consecutive series of patients who presented to hospital after deliberately harming themselves. There were 3 aims for this study. The first was to estimate the incidence of gambling problems in a population who have presented to hospital following an episode of deliberate self-harm. The second was to compare the prevalence of problem gambling identified in the study to the general population using currently available statistics in sub-groups of age, gender and ethnicity. The final aim was to investigate the effect of alcohol and gambling on the seriousness of suicide attempts.

All patients who attended North Shore Hospital in Auckland (n=189) from June 9<sup>th</sup> 2003 to October 31 2003 following a suicide/self harm attempt were invited to complete a questionnaire. This consisted of the Gambling Eight Screen, (Early Intervention Gambling Health Test), the CAGE alcohol screen, and the Beck Suicidal Intent Scale. Demographic data and the preferred mode of gambling were also collected.

Results showed the prevalence of problem gambling to be high within this population. Of the 70 patients who participated in the study, 17.1% were identified as having a gambling problem. The 95% confidence interval for the data was 9.2% to 28%. Further to this, 75% of this group were identified with an alcohol problem through the CAGE questionnaire and there was strong statistical evidence of an effect of the CAGE score on whether or not a patient was identified as a problem gambler by the Gambling Eight screen ( $p=.01$ ).

The most significant demographic feature related to problem gambling was shown to be ethnicity. There was no significant result determined regarding the effect of alcohol misuse and problem gambling on the seriousness of the attempt.

# Acknowledgments

There are many people and institutions that I would like to acknowledge and thank for their contribution to this thesis.

I would like to thank my supervisors for their support of this thesis. Firstly, I would like to thank Simon Hatcher for the invitation and encouragement to undertake this thesis in this subject area. Following on from this, I could not have wished for more support in terms of regular meetings, application for financial support of the project, facilitation of the research within your hospital department, attending the ethics committee meeting for me while I was out of Auckland for work, and mostly, for never expressing any concern as to the progress of the project, no matter how often my time frames changed.

I wish also to thank Sean Sullivan, my second supervisor, and colleague. Your clear thinking and extensive knowledge about problem gambling has supported this work enormously, as has working alongside you on a daily basis. The extra support regarding the interpretation of statistics has been invaluable. I would like to thank both my supervisors for their calm and confidence in respect of my last minute method of working, which I have come to appreciate may be a style shared by both of them.

This thesis would not have happened without the support of the research assistant appointed for the study, Nikki Collins. Your skills in liaising with Simon, the thirty different staff members within the Liaison Psychiatry Department, and me, to ensure that the collection of information went ahead were critical to the study, and it would not

have been successful without the close eye you kept on it at all times. In addition to this, the considerable extra support you have offered, over and above the collection of the data, for example, responding instantly to panicked emails when analysing the data wasn't going as smoothly as it might, has been much appreciated. Thank you also to Joanna Stewart at Auckland University for her very prompt help at the beginning and the completion of my thesis in respect of the analysing of the statistics.

I wish to acknowledge the clinicians within North Shore Liaison Psychiatry Department, of which there were thirty, who participated in the study, and those who particularly went to a lot of trouble to engage their patients with the project, for which I am very grateful. Further, I wish to express my gratitude to the seventy patients who agreed to take part in this study. I appreciate the willingness to participate in something extra at a time of crisis, and I sincerely hope that some knowledge and benefit was gained by participating.

I wish to acknowledge my colleagues in our organisation Abacus Counselling and Training Services, which we formed at the same time as I undertook this thesis. The undertaking of both has at times been difficult, but the loyalty, and support we have for each other has contributed enormously to my managing both my thesis and starting a new business over the last two years.

A special thanks to my partner Mike, who proof read every part of this thesis at each stage, and in doing so, never complained about having to correct the same few grammatical errors over and over again. And thanks too, for your additional support in tending to my garden, my house and me, while I wrote.

Finally I wish to thank friends and family who have supported me over the duration of this thesis, listening to me complaining about what I would like to be doing instead of

writing, and supporting me to complete such projects as refurbishing my kitchen which seemed suddenly urgent in the midst of thesis writing. Your support in all aspects of my life over the last two years has been much appreciated and contributed to the completion of this thesis.

# Table of Contents

<b>ABSTRACT .....</b>	<b>II</b>
<b>ACKNOWLEDGMENTS .....</b>	<b>IV</b>
<b>TABLE OF CONTENTS .....</b>	<b>VII</b>
<b>LIST OF TABLES .....</b>	<b>XI</b>
<b>LIST OF FIGURES .....</b>	<b>XII</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>XIII</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>Introduction .....</b>	<b>1</b>
1.1 Background of Study .....	1
1.2 Literature Review Method .....	3
<b>CHAPTER TWO .....</b>	<b>5</b>
<b>Problem Gambling .....</b>	<b>5</b>
2.1 The Definitions .....	5
2.1.1 Introduction .....	5
2.1.2 Gambling .....	6
2.1.3 Pathological gambling .....	6
2.1.4 Problem gambling .....	7
2.1.5 The continuum model .....	8
2.2 Problem Gambling and Prevalence .....	9
2.2.1 International data .....	9
2.2.2 New Zealand data .....	10
2.3 Problem Gambling and Demographics .....	12
2.3.1 Gender .....	12
2.3.2 Problem gambling and ethnicity .....	13
2.3.3 Problem gambling and age .....	14
2.3.4 Problem gambling and socio-economic factors .....	16
2.3.5 Problem gambling and health .....	16
2.4 Modes of Gambling .....	17
<b>CHAPTER THREE .....</b>	<b>19</b>
<b>Problem Gambling and Alcohol Misuse .....</b>	<b>19</b>



3.1 The Definitions .....	19
3.1.1 Substance dependence .....	19
3.1.2 Substance abuse .....	20
3.1.3 Alcohol misuse.....	21
3.1.4 Psychological addiction .....	22
3.2 The Similarities and the Differences .....	22
3.2.1 The Similarities.....	22
3.2.2 What are the differences?.....	25
3.3 The Connections .....	27
3.3.1 International data .....	27
3.3.2 New Zealand data .....	29
<b>CHAPTER FOUR .....</b>	<b>31</b>
<b>Suicide and Deliberate Self-Harm.....</b>	<b>31</b>
4.1 The Definitions .....	31
4.1.1 Suicide.....	31
4.1.2 Deliberate self-harm.....	32
4.2 The Link between Suicide and Deliberate Self-harm.....	32
4.3 Theories to Explain Suicide.....	33
4.3.1 Sociological theories .....	33
4.3.2 Psychological/medical theories.....	34
4.3.3 Connecting the theories.....	36
4.4 Prevalence - International Data.....	36
4.5 Prevalence - New Zealand Data.....	37
4.5.1 Suicide.....	37
4.5.2 Deliberate self-harm.....	37
4.5.3 Ethnic differences .....	38
4.5.4 Gender differences .....	39
4.5.5 Age.....	39
4.6 Connections with Co-existing Psychiatric Disorders .....	40
4.6.1 Deliberate self-harm.....	40
4.6.2 Suicide.....	41
<b>CHAPTER FIVE.....</b>	<b>43</b>
<b>Suicide, Problem Gambling and Alcohol Misuse .....</b>	<b>43</b>
5.1 Suicide and Problem Gambling: Important Connections .....	43
5.1.1 Epidemiological study .....	43
5.1.2 Casinos and suicidality .....	44
5.1.3 Population based studies .....	45
5.1.4 Treatment populations .....	45
5.1.5 Completed suicides .....	47
5.1.6 Psychological autopsy.....	48
5.1.7 Individual case studies .....	48
5.1.7.1 The international literature.....	48
5.1.7.2 The importance of asking: A New Zealand case example.....	50
5.2 The Contribution of Alcohol .....	51
5.3 Interventions .....	53
5.3.1 Psycho-social approaches .....	53
5.3.2 Pharmacological approaches.....	54
5.3 Problem Gambling, Alcohol and Suicide – Putting the Picture Together.....	54
<b>CHAPTER SIX.....</b>	<b>56</b>
<b>Aims of the Study.....</b>	<b>56</b>
6.1 Introduction.....	56
6.2 Aims.....	57

6.3 Definition of Terms .....	57
<b>CHAPTER SEVEN .....</b>	<b>59</b>
<b>Methods .....</b>	<b>59</b>
7.1 Ethics Approval .....	59
7.2 Study Design.....	59
7.3 Setting .....	59
7.4 Interviewers .....	60
7.4.1 Clinicians .....	60
7.5 Participants .....	60
7.5.1 Inclusion/exclusion criteria.....	60
7.6 Interview process .....	61
7.7 Questionnaire .....	62
7.7.1 Beck Suicidal Intent Scale .....	62
7.7.2 CAGE Alcohol Screen.....	63
7.7.3 Gambling EIGHT Screen .....	64
7.8 Statistical methods .....	66
<b>CHAPTER EIGHT.....</b>	<b>67</b>
<b>Results.....</b>	<b>67</b>
8.1 Introduction.....	67
8.2 Total Sample.....	68
8.2.1 Demographics of total sample .....	68
8.3 Patients Consenting to the Study .....	70
8.3.1 Demographics of patients consenting to the study .....	70
8.3.2 Screen results for patients consenting to the study .....	72
8.4. Patients Identified with a Gambling Problem.....	73
8.4.1 Introduction.....	73
8.4.2 Demographics of patients who participated and were gambling screen positive .....	73
8.4.3 Case Series: Patient one .....	75
8.4.4 Patient two .....	75
8.4.5 Patient three .....	76
8.4.6 Patient four.....	76
8.4.7 Patient five .....	77
8.4.8 Patient six.....	78
8.4.9 Patient seven .....	78
8.4.10 Patient eight .....	79
8.4.11 Patient nine.....	80
8.4.12 Patient ten.....	80
8.4.13 Patient eleven .....	81
8.4.14 Patient twelve.....	82
8.5 Gambling and Alcohol Problems.....	82
8.5.1 Patients who participated in the study with positive CAGE screen.....	82
8.5.2 Patients identified as gambling screen positive with positive CAGE score .....	83
8.6 Comparison between those who participated in the study and those who did not .....	85
8.6.1 Demographics .....	85
8.6.2 Non-participants' reasons for exclusion from the study .....	87
8.7 Prevalence of Problem Gambling in the Study Compared to Currently Available Problem Gambling Statistics .....	88
8.7.1 Age.....	88
8.7.2 Gender.....	90
8.7.3 Ethnicity .....	91
8.7.4 General population study prevalence.....	94
8.8 The Effect of Alcohol and Gambling in Relation to the Seriousness of Suicide Attempts in the Study .....	94

<b>CHAPTER NINE .....</b>	<b>96</b>
<b>Discussion and Recommendations .....</b>	<b>96</b>
9.1. Introduction.....	96
9.2 Principal Findings.....	96
9.2.1 Aim one.....	96
9.2.2 Aim two .....	97
9.2.3 Aim three .....	98
9.3 Strengths of the Study.....	99
9.3.1 First international study of problem gambling from self-harm perspective .....	99
9.3.2 Comprehensive assessment of participants.....	99
9.3.3 Differences between participants and non-participants in the study investigated .....	99
9.4 Weaknesses of the Study .....	102
9.4.1. Low participation rate of total sample .....	102
9.4.2 Small sample of identified problem gamblers .....	102
9.4.3 Number of assessing clinicians participating in the study .....	103
9.4.4 Collection of modes of gambling.....	103
9.5 Strengths and Weaknesses of the Study in Relation to other Studies.....	104
9.5.1 Introduction.....	104
9.5.2 New Zealand general population gambling problem prevalence study.....	105
9.5.3 International problem gambling prevalence data.....	106
9.5.4 Gambling Eight screen studies.....	107
9.7 Meaning of the Study.....	108
9.7.1 Implications for practice: Clinicians .....	108
9.7.2 Implications for practice: Policy makers .....	110
9.8 Unanswered Questions and Future Research.....	111
9.8.1 Sample size .....	111
9.8.2 Clinicians attitudes to problem gambling and data collection .....	112
9.8.3 Modes of gambling .....	112
9.9 Conclusion .....	113
 <b>REFERENCES .....</b>	 <b>115</b>
 <b>APPENDICES.....</b>	 <b>126</b>

## List of Tables

<b>Table 1: Demographics of all patients: non-participants, participants and those screening +ve (n=189).....</b>	<b>69</b>
<b>Table 2: Demographics of participants in the study .....</b>	<b>70</b>
<b>Table 3: Screen scores for participants in the study .....</b>	<b>72</b>
<b>Table 4: Demographics of participants of study gambling screen +ve.....</b>	<b>73</b>
<b>Table 5: CAGE scores for patients who participated in the study .....</b>	<b>83</b>
<b>Table 6: CAGE scores for patients with +ve Gambling Eights screen score.....</b>	<b>83</b>
<b>Table 7: Comparison of patients who agreed to participate in study and those who did not.....</b>	<b>85</b>
<b>Table 8: Non-participants' reasons for exclusion from the study.....</b>	<b>87</b>
<b>Table 9: Mean age across all groups in the study.....</b>	<b>88</b>
<b>Table 10: Gender distribution across all groups in the study .....</b>	<b>90</b>
<b>Table 11: Gender distribution of problem gambling treatment population (from general population) in 2002 .....</b>	<b>90</b>
<b>Table 12: Distribution of ethnicity across all groups in study .....</b>	<b>91</b>
<b>Table 13: Distribution of ethnicity of all participants in study (n=70), participants -ve on Eight screen (n=58) and participants +ve on Eight screen (n=12).....</b>	<b>92</b>
<b>Table 14: Ethnicity of problem gambling treatment population (from general population) in 2002 .....</b>	<b>92</b>

## List of Figures

<b>Figure 1: Alcohol misuse amongst problem and non-problem gamblers identified by Eight screen.....</b>	<b>84</b>
<b>Figure 2: Reasons for patients' non-participation in study (n=119).....</b>	<b>87</b>
<b>Figure 3: Proportion of identified problem gamblers under 35 years of age, for study (n=12), Helpline in 2002 (n=2133) and personal specialist problem gambling counselling (n=1731).....</b>	<b>89</b>
<b>Figure 4: Percentage by gender in populations of all participants (n=70), those positive on Eight screen (n=12), Helpline in 2002 (n=2902), personal specialist problem gambling counselling (n=1967) .....</b>	<b>91</b>
<b>Figure 5: Percentage of ethnic totals in groups identified as problem gamblers and non-problem gamblers in the study .....</b>	<b>93</b>
<b>Figure 6: Comparison of percentages of ethnic groups in study participants (n=70), participants +ve on the Eight screen (n=12), Helpline in 2002 (n=2358) and personal specialist problem gambling counselling (n=1783).....</b>	<b>93</b>
<b>Figure 7: Connection between the Gambling Eight screen, the CAGE alcohol screen and the Beck Suicide Intent Scale .....</b>	<b>95</b>

## **List of Abbreviations**

<b>AOD</b>	<b>Alcohol and other drugs</b>
<b>APA</b>	<b>American Psychiatric Association</b>
<b>Beck</b>	<b>Beck Suicide Intent Scale</b>
<b>CAGE</b>	<b>Four question alcohol screen</b>
<b>CATT</b>	<b>Community Assessment and Treatment Team</b>
<b>CMHC</b>	<b>Community Mental Health Centre</b>
<b>Commission</b>	<b>Australian Productivity Commission</b>
<b>CYFS</b>	<b>Children, Youth and Family Services</b>
<b>DSM-1V</b>	<b>Diagnostic and Statistical Manual 4</b>
<b>EIGHT Screen</b>	<b>Early Intervention Gambling Health Test</b>
<b>ETOH</b>	<b>Ethanol</b>
<b>GP</b>	<b>General Practitioner</b>
<b>NPS</b>	<b>National Prevalence Study</b>
<b>NZ</b>	<b>New Zealand</b>
<b>PGs</b>	<b>Problem Gamblers</b>

<b>SES</b>	<b>Socio Economic Status</b>
<b>SOGS</b>	<b>South Oaks Gambling Screen</b>
<b>USA</b>	<b>United States of America</b>
<b>WHO</b>	<b>World Health Organisation</b>

# Chapter One

## Introduction

### 1.1 Background of Study

After returning to New Zealand and entering the problem gambling field six years ago, following fourteen years working in the field of Alcohol and other Drugs both in the United Kingdom and previously New Zealand, the most significant difference I noted between the two closely related fields was the degree of suicidal thought indicated by those with identified gambling problems. The differences could not be accounted for by the differences in the populations presenting for treatment in terms of socio-economic factors, levels of psychiatric co morbidity and other factors that have been shown to be closely linked with suicide and deliberate self-harm (Beautrais, Joyce, Mulder et al., 1996; Cornelius et al., 1995; Hirschfeld & Davidson, 1998; Platt, 1985; Vassilas & Morgan, 1997).

I had come into the problem gambling field, following nine years working in a Community Alcohol and Drug team in central Manchester in England where social problems were acknowledged as being significantly higher than other parts of the city or country (Dougal, 2002), socio-economic status was low and deaths among our client group of those with alcohol and other drug problems were frequent although not by means of suicide. Newspaper articles describing this part of Manchester portray it as consisting of Manchester's most notorious suburbs which had acquired infamous



reputations for riots, drugs turf wars, crime and inner city blight housing (Dougal, 2002). It could be expected that the rate of suicide and deliberate self-harm would be much higher in an alcohol and drug treatment service in an area such as this, but this was not our team's experience.

A study came to my notice, early on in my work in the field of problem gambling which had been undertaken by Ciarrocchi (1987) over a decade previously. He noted that clients dually addicted to gambling, alcohol and/or drugs were at a greater risk of suicide. He reported that 100% of the chemically dependent pathological gamblers reported significant depression and that 42% had made a serious suicide attempt. This was five times the frequency of the group that were chemically dependent alone. This study appeared to begin to make sense of my different experience working with those with gambling problems, many of whom had alcohol or other drug problems as well, and working with those for whom alcohol or drug problems were the primary presenting problem.

A literature review confirmed that while research over the past fifteen years had continued to consider the relationship between suicide and problem gambling, a follow on from this study had not been undertaken, and as with Ciarrocchi's study the majority of work in this area has continued to be undertaken with problem gambling treatment populations. The literature review further confirmed that no study had been undertaken investigating a population who present to hospital following deliberate self harm with regard to the incidence of problem gambling and alcohol misuse.

The impetus for this study came as a result of these factors and also from the interest, encouragement and support of experts in the fields of both suicide, and problem gambling, namely Dr Simon Hatcher and Dr Sean Sullivan respectively, who have

become my supervisors for this study. Our interest has resulted in this exploratory study to discover any connection between attempted suicide, problem gambling and alcohol use through a study of a consecutive series of patients who have presented to hospital following an episode of deliberate self-harm.

## **1.2 Literature Review Method**

A variety of methods were employed to ensure a comprehensive review of the literature was undertaken. Hand-searching of materials and the accumulation of these had occurred over the previous few years. These incorporated such items as gambling conference proceedings that were not electronically available. Bibliographies of relevant research studies had been identified and included. Material provided for Problem Gambling and Suicide Studies masters level course at Auckland University was also consulted and included.

Literature searches using Medline and PsychINFO databases were used for all years up to 2003. Keywords used were gambling, risk-taking, pathological gambling, and compulsive, addictive or problem gambling. The addition of these keywords numbered 7105 results. The keyword suicide was exploded with 30,231 results. The keyword alcohol resulted in 160,757 potential articles. The combination of these keywords refined to 39 results, with a limit of English language articles. All of these 39 articles were retrieved and all articles had previously been reviewed in the accumulation of information for this study. An identical search was undertaken with PsychINFO, which revealed no new articles.

A further database that was searched was Current Contents, for which an email alert was set up using the keywords problem gambling and suicide for the duration of the

study. This revealed one new article in this time frame which has been included within the literature review.

Other data bases that were searched were Voyager, Te Puna and Index NZ including digital dissertations and Cochrane reviews. Using search type Keyword Boolean, a search was undertaken for gambling or gaming and alcohol, gambling or gaming and New Zealand, gambling or gaming and theses and gambling or gaming together with pathological or addict or compulsive or problem. This resulted in 8 - 40 hits for the different categories but again no further previously unknown articles or theses were revealed.

# Chapter Two

## Problem Gambling

### 2.1 The Definitions

#### 2.1.1 Introduction

Pathological gambling has only relatively recently been defined as a psychiatric disorder although there are many examples in history of problematic gambling and even its connection with suicide. In 1791 an article in the *Western County Magazine* refers to problem gambling as an addiction, and describes the preoccupation and distraction, citing many cases of individuals who lost everything and committed suicide (National Research Council, 1999). Pathological gambling however was only recognised in 1977 by the World Health Organisation in the *International Classification of Mental Health Behavioural Disorders*. The American Psychiatric Association formally recognised pathological gambling in 1980 in their *Diagnostic and Statistical Manual (DSMIII)* and classified it as an impulse disorder. Although in *DSM-IV* it continues to be identified as an impulse disorder the diagnostic criteria were deliberately and directly based on those used for substance abuse disorders (Blaszczynski, 1998). There continues to be much debate in the field as to where pathological gambling best fits in regard to DSM criteria (Potenza, Fiellin, Heninger, Rounsaville, & Mazure, 2002; Steel & Blaszczynski, 1998; Zuckerman, 1999). Pathological gambling has now come to be often used interchangeably with problem gambling.

### **2.1.2 Gambling**

In order to consider the problems associated with gambling, it is important to understand what constitutes gambling. Bolen and Boyd (1968) define gambling as placing value upon a game/event or a bet of any type that has an unpredictable outcome, and in which the result to some magnitude is determined by chance.

### **2.1.3 Pathological gambling**

DSM-1V defines pathological gambling as persistent and recurrent maladaptive gambling behaviour which causes disruption or damage to several areas of a person's functioning, including personal, family or vocational pursuits. There are ten criteria of which a person must meet five or more for this diagnosis. They are:

1. Is pre-occupied with gambling, e.g. past wins
2. Needs to gamble with increasing amounts of money in order to achieve the desired excitement
3. Repeated unsuccessful attempts to reduce/stop
4. Restless or irritable when attempting to cut down or stop gambling
5. Uses gambling to escape problems or to relieve a dysphoric mood
6. Chases losses
7. Lies to cover extent of gambling
8. Has committed illegal acts to finance gambling
9. Risked or lost relationships, jobs or educational or career opportunities because of gambling

## 10. Relies on bail-outs

The diagnosis of pathological gambling can not be made if the gambling behaviour is better accounted for by a Manic Episode (American Psychiatric Association, 1994).

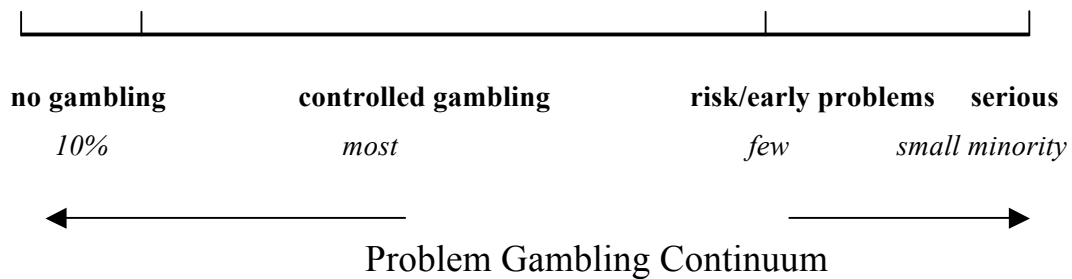
### **2.1.4 Problem gambling**

A precise and agreed upon definition of problem gambling is difficult to identify, but many authors have put forward useful concepts. Sullivan (1994) states that with problem gambling there is occasional loss of control and gambling for higher stakes or for longer than intended periods. Potenza, Fiellin, Heninger, Rounsaville and Mazure (2002) suggest problem gambling is often used to describe less severe symptoms than pathological gambling but consists of interfering patterns of excessive or destructive gambling. The Australian Productivity Commission (1999) determined a much wider definition in which problem gambling is said to affect the gambler and others such as their family. It will have a mix of effects over their lives that can include some or all of the following areas:

- Negative psychological effects that can be pervasive
- Poor control over the gambling itself
- Negative relationships with others
- Negative effects on work or study
- Financial problems
- Legal problems

### **2.1.5 The continuum model**

Gambling, problem gambling, and pathological gambling are most often seen together in terms of a continuum by problem gambling counsellors and specialists within New Zealand, as demonstrated below (Abacus Counselling and Training Services, 2003b).



The continuum demonstrates most people gambling safely and in control of their gambling with the left end point showing those that do not gamble at all, approximately 10% in NZ (Amey, 2001), and the right end point showing those experiencing severe gambling problems that would meet DSM 1V criteria of ‘Pathological Gambling Disorder’ (American Psychiatric Association, 1994). The model differs from previously widely favoured disease models in which individuals belong to one group or another: those who have the disease of ‘Pathological Gambling Disorder’ and those who don’t. The continuum model highlights the fact that all individuals can be susceptible to problem gambling, are all on the continuum somewhere and can all move up and down this continuum over a lifetime. Peele in questioning the traditional disease concept of addiction (1985/1998; 1989/1995) states:

No work of this kind will ever explain the most basic elements of addiction; particularly that people addicted at a certain time and place cease to be addicted at a different time and place.

Schaffer, Hall and Bilt (1997) in recognising the need for early identification of gambling problems rather than just focusing on gambling pathology have suggested a

categorisation consisting of three levels. Level 3 is seen as the group with the most serious negative effects, Level 2 are those who are experiencing a wide range of adverse reactions or consequences and comprise a diverse group and Level 1 consists of those who are either moving towards more disordered gambling or have few or no gambling problems. This description of levels also fits well within the continuum model.

## **2.2 Problem Gambling and Prevalence**

### ***2.2.1 International data***

Studies worldwide reveal figures of up to 12.9 percent for estimates of combined life-time problem and pathological gambler prevalence {Schaffer, 1997 #46}. It is noted however that comparing and interpreting prevalence studies is problematic when different studies use different screening and or diagnostic instruments or procedures, and that such differences are common (Volberg, 1998). Particular specialist populations reveal a much higher prevalence of gambling problems such as those attending treatment for alcohol and/or other drug problems and this is addressed in greater detail in Chapter Three. Specific sub-populations such as ethnic groups are further addressed in this chapter.

Schaffer et al (1997) highlight that the rates of gambling participation and problem and pathological gambling have been increasing with the recent increase in availability of legalised gambling options. Becona, Labrador, Echeburua, Ochoa and Vallejo (1995) also point out that increased availability also increases acceptance and support from societies and governments. This has the effect of further entrenching and normalising gambling as part of cultures. The Australian Productivity Commission (1999) examined evidence on the possible link from a variety of sources and concluded ‘that there is



sufficient evidence to confirm a significant connection between greater accessibility, particularly with gaming machines and the greater prevalence of problem gambling.’

Of particular concern are the prevalence figures in relation to young people. While the difficulty in comparing and interpreting data for adolescents remains the same, in comparison to the proportions of adult problem gamblers, the proportion of problems among adolescents in the United States could be more than three times that of adults (National Research Council, 1999). This relates to current prevalence rates however, but lifetime prevalence rates and incidence rates of problem gambling among adolescents have been less researched (Raylu & Oei, 2002).

### **2.2.2 New Zealand data**

Research undertaken in New Zealand in 1991 (Abbott & Volberg, 1991) indicated that 3.3 percent of adults will be experiencing gambling problems with approximately one third of these considered pathological gamblers. More recent prevalence research published by Abbot, Williams and Volberg (1999) has shown a reduction in prevalence, which has sparked considerable debate and critique of the research. The NZ Department of Internal Affairs (Undated) who commissioned the research state:

The 1999 (National Prevalence Survey) estimated....0.5% of the adult population (about 13,700) were ‘probable pathological gamblers’ in the six months preceding the survey. Of these, about 2,200 experienced very severe problems (10 or more symptoms) in the six months preceding the survey”

These figures certainly go against worldwide trends and at a time when there has been a proliferation of gambling opportunities in New Zealand, causing much concern.

Sullivan (2001) highlights that the prevalence rate of problem gambling in a population is an important statistic because:

- it can assist in estimating the cost to a community
- it can influence whether public resources are allocated to mitigate its effect
- it can influence the perception of the degree of regulation of gambling needed, including the amount of gambling permitted
- it can drive public awareness issues

The critiques of this latest New Zealand prevalence research offer some possible explanations for the differences over seven years. One criticism is in relation to the fact that it was a telephone survey undertaken by a government department, the Department of Statistics. Research undertaken by the Australian Productivity Commission (1999) asked 277 problem gamblers in counselling whether they would have revealed the true nature of their problems in a survey prior to seeking help, of which only 27.8 percent said they would have answered honestly. Further criticism concerns the fact that New Zealand's latest prevalence figures place NZ out of step with the rest of the world and that this seems unlikely, given the substantial increase in gambling opportunities over the same time period that the two prevalence studies were undertaken. Sullivan (2001) points out that, comparable countries and Australian states (based on Video Gambling Machines, the most problematic form of gambling), have higher prevalence rates (Victoria 2.14%; ACT 2.06%; Northern Territory 1.89%). A further criticism highlights that the research showed many inconsistencies with other published research on problem gambling e.g. that people 18-24 yrs have the second lowest prevalence rate; no unemployed people were identified as problem gamblers; no Asian current problem gamblers were identified and that only 23% of 1991 current pathological gamblers were current in 1998.

With the proliferation of gambling opportunities in New Zealand, prevalence data is likely to be quickly out of date if prevalence of problems is related to prevalence of gambling opportunities, as has been discussed and demonstrated by many authors both in relation to alcohol and gambling (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001). The most recently available data in respect of spending on gambling in NZ shows a jump to \$1.7 billion, a 14% increase over the previous year (Department of Internal Affairs, 2003). Video gambling machines are now the leading form of gambling by problem gamblers treated in several countries (Fisher & Griffiths, 1995). In NZ the amount spent on gaming machines increased by over 30% in this same time frame (Department of Internal Affairs, 2003) and gambling machines (casinos and non-casinos) now constitute 86.2% of the primary mode of problem gambling for those attending face to face treatment services (Paton-Simpson, Gruys, & Hannifin, 2003).

## **2.3 Problem Gambling and Demographics**

### **2.3.1 Gender**

In 2002, female problem gambling clients comprised 49.2% of clients who used a gambling problem telephone helpline and 43.1% of those who attended personal problem gambling counselling. This constitutes an increase of 309.7% for women receiving personal counselling since 1997 in New Zealand (Paton-Simpson et al., 2003).

While numbers of female problem gamblers are now equalling those of male problem gamblers, Raylu and Tian (2002) note that the majority of research studies on PGs have focused only on male participants. There is some suggestion that there may be some gender differences in the motivation towards gambling, and some studies have

indicated that females use gambling to escape personal problems e.g. loneliness, and familial problems (S. Brown & Coventry, 1997), whereas males gamble more for excitement and to win money. Clinical experience of the author would not suggest this is the case, and modes of gambling may offer more of a consistent explanation than gender. As is pointed out by Raylu and Tian (2002) the exact nature of gender differences in the motivations towards gambling is still unclear and Spunt et al (1998) highlight that there are no clear guidelines for health professionals to work with females.

### ***2.3.2 Problem gambling and ethnicity***

It has been pointed out by Walker and Dickerson (1996) that prevalence studies do not properly define the community that they are sampling, and that the studies that have been performed in a range of countries, most of which have a vast range of cultural groups and ethnicities, and have not usually used appropriate methods to ensure that all of the cultural groups in a given community are fairly sampled. This was demonstrated in a NZ prevalence study (Abbott et al., 1999) in which it was shown that there were no current problem gamblers within the NZ Asian community. Anecdotal evidence in both problem gambling services and by observation of such an environment as the Auckland casino, would suggest that is unlikely to be the case. The Australian Institute of Gambling Research (1998) noted that in this year 19% of visitors to the Auckland casino were Asian. Blaszczynski, Huynh, Dumlao and Farrell (1998) report significant gambling among the Chinese in Australia, and recent evidence in a NZ study (Abacus Counselling and Training Services, 2003a) shows a rate of problem gambling of 7% in a GP practice of primarily Chinese patients.

Maori comprised 26.1% of those seeking help from Problem Gambling counselling services in 2002, considerably in excess of the proportion of the NZ population of 18 and over which is 11% (Paton-Simpson et al., 2003). Evidence from screening in GP practices using the Eight Screen (Sullivan, 1999) determined a rate of 19.2% who scored 4 or above, significantly higher than the rates determined in the National prevalence studies of 1991, in which the rate was 1.3%, and 1999 in which it was 2.3% (Abbott & Volberg, 1991; Abbott et al., 1999). In addition, and of concern in regard to the high problem gambling prevalence for Maori, is the data relating to a NZ prison population study (Sullivan, 2001a). This study identified that Maori were disproportionately affected by problem gambling, with 76% of the identified problem gamblers who were Maori compared with 40% of the non- problem gambling group.

In NZ, Pacific people have been highlighted as having the highest prevalence rate in respect of gambling problems. Data in 1991 (Abbott & Volberg, 1991) showed that for Pacific People there was a 16% rate of problem gambling plus a 15% rate of pathological gambling. The 1999 follow-up study (Abbott et al., 1999) highlighted that Pacific Nationals have 14 times the prevalence of pathological gambling of Pakeha New Zealanders. As concern has already been raised regarding the methodology of this study, particularly in relation to ethnicity, and suggestions made that the actual prevalence figures are likely to be several times higher than that suggested (Sullivan, 2000) by the NPS (Abbott et al., 1999), problem gambling is of great concern to Pacific Communities.

### ***2.3.3 Problem gambling and age***

While there is a growing body of literature on youth and problem gambling, with concern regarding the high current prevalence rate compared to adults there is a lack of

research related to older people. Stewart and Oslin (2001) highlight that this group are particularly vulnerable as many are on rigid incomes, and consequently, even small losses can have significant financial and even legal consequences. As it has been demonstrated that those who are on lower incomes and those who are not employed are more susceptible to the development of a gambling problem, (Volberg, Moore, Christiansen, Cummings, & Banks, 1998) this potentially places both older and younger people at more risk. Bazargan, Bazargan and Akanda (2001) also make an important point in that there is also a lack of awareness of the disorder among the older age group and they are more likely to hide or deny their gambling due to religious beliefs and age-related perceptions of how older adults should morally and ethically behave.

In New Zealand there appears to have been a conclusion drawn that older people are less at risk of developing a gambling problem for two reasons (Sullivan, 2001b). Firstly older people have represented a small proportion of those who have sought help from specialist treatment providers. The most recently available statistics highlight that the number of people 65 and over who sought counselling for problem gambling was just 1.5% (Paton-Simpson et al., 2003). Secondly, the most recent national Prevalence Survey (Abbott & Volberg, 2000) in a telephone survey found no people over 65 years of age who had a gambling problem.

In contrast to this, a study of over 65 year olds attending Auckland and Christchurch casinos, found 44% and 56% respectively of those surveyed had attended the casino (Australian Institute of Gambling Research & Casino Control Authority, 1998). While there is difficulty in ascertaining the level of gambling problems in this age group, evidence of participation in all forms of gambling is growing, and with the vulnerability suggested previously, along with the knowledge that greater availability leads to an

increased level of problems, it is likely that older persons, like youth, are at higher risk, rather than lower risk as has previously been considered. Further research in this area is therefore much needed.

#### ***2.3.4 Problem gambling and socio-economic factors***

As has previously been commented on, low socio-economic status has been shown to be linked with greater risks of problem gambling. One factor in relation to this is that small wins occur much more frequently in all forms of gambling, and a smaller win has a far greater impact upon a person's life if their income is low, and the tendency is then to want to repeat this experience. Considerable economic research has been carried out in relation to socio-economic factors and problem gambling but this has largely been done at a societal rather than individual level.

One of the most significant and thorough studies in this respect has come from the Commission (1999). An analysis within the report suggested that gaming machines were more densely located in lower income areas in Victoria, New South Wales and South Australia. The explanation offered for this was there may be a greater incentive to allocate machines to areas where they will be used most intensively, and that potential returns are highest in lower income areas, reflecting consumers' preferences. The result for individuals who come from a lower socio-economic background is that problems develop more rapidly, and financial solutions are more difficult, which in turn further entrenches problem gambling, and the serious problems at the severe right end of the continuum.

#### ***2.3.5 Problem gambling and health***

There has a growing body of research that is demonstrating the connection between problem gambling and health problems. The majority of this research addresses mental

health co-morbidity, which is further discussed in Chapter Three, particularly the connection with alcohol misuse. Physical health problems have also been noted however, which may contribute to the earlier identification of gambling problems, if the presence of these health issues suggests screening for problem gambling. Berg and Kuhlhorn (1994) report following a survey in which problem gamblers were asked to self-report severe physical symptoms over the last twelve months that: 37% of subjects had fatigue, 24% influenza, 20% headaches or migraine and 20% gastric pain, and that 32% had more than one symptom. It is interesting to note that in this same study, 100% had suicidal thoughts or had made attempts.

In a New Zealand study (Sullivan, Arroll, Coster, & Abbott, 1998) also surveying self-reporting of those who were presenting to their GP, who had an identified gambling problem as determined by the Eight Screen, cited anxiety (25%), depression (18%) and headaches (7%) as the reason they were presenting to their GP. More recent research in NZ of patients presenting to their GP (Abacus Counselling and Training Services, 2003a) is highlighting a depression rate of almost 60% in those who have been identified as problem gamblers. As Sullivan et al (1998) suggest, disorders with more overt symptoms that correlate positively with problem gambling may assist as an appropriate signal to screen for problem gambling.

## **2.4 Modes of Gambling**

Raylu and Tian (2002) comment that one of the more significant issues in problem gambling research currently is the way in which findings are generalised from one form of gambling to another. Each form of gambling needs to be considered in its own right, especially those that appear to be more problematic, such as gaming machines, a fact



highlighted earlier by the overwhelming proportion of clients presenting to treatment services who report gaming machines as their primary mode of gambling. These most recent statistics for NZ (Paton-Simpson et al., 2003) highlight that most clients are able to identify a main mode of gambling, rather than the common misconception that a gambling problem means being addicted to all forms of gambling. In 2002, the most frequently cited mode of gambling was gaming machines in pubs and clubs. This was followed by casino gaming machines at 11.4%, track gambling at 6.7% and casino tables at 4.9%. Other cited main modes of gambling, such as lotto, housie and sports betting totalled less than 2%. Dickerson (1993) is one of many researchers who suggests that distinct processes may operate for different forms of gambling, and thus consideration must be given to the mode of gambling in all problem gambling research that is undertaken.

# Chapter Three

## Problem Gambling and Alcohol Misuse

### 3.1 The Definitions

While the focus of this chapter is on alcohol in relation to problem gambling and also to suicide and deliberate self-harm, the literature frequently refers to alcohol use in combination with other substances, so it is necessary to consider a wider range of definitions. For the purpose of this study the term alcohol misuse will be used to describe all definitions relating to an alcohol problem. The concept of addiction is also one that is used freely in the literature, but is primarily a lay term that does not appear to have a consistent definition, and will be defined further in this context. As many authors point out, the meaning of addiction for both daily and academic use is contextual and socially-constructed (Irvine, 1995; Truan, 1993).

#### **3.1.1 Substance dependence**

DSM-IV (American Psychiatric Association, 1994) states that the essential feature of Substance Dependence is a cluster of cognitive, behavioural and physiological symptoms where the individual continues use of the substance despite significant substance related problems. There are seven criteria, and the diagnosis indicated by three or more occurring at any time in the same 12 month period. Alcohol dependence is defined by these same criteria.

1. Tolerance, as defined by either:
  - a) A need for markedly increased amounts to achieve desired effect
  - b) Markedly diminished effect with continued use of the same amount
2. Withdrawal, as manifested by either:
  - a) The characteristic withdrawal symptoms for the substance
  - b) The same (or close) substance is taken to relieve or avoid withdrawal
3. The substance is often taken in larger amounts or over a longer period than was intended
4. There is persistent desire or unsuccessful efforts to cut down or control use
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance or recover from its effects
6. Important social, occupational or recreational activities are given up or reduced
7. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

### **3.1.2 Substance abuse**

This has been defined in DSM-IV (American Psychiatric Association, 1994) as a maladaptive pattern of substance use leading to clinically significant impairment or distress, as indicated by one or more of the following in a 12 month period, with alcohol abuse as a subset of this.

1. Recurrent use resulting in a failure to fulfil major role obligations at work, school or home
2. Recurrent use in situations in which it is physically hazardous e.g. drink driving
3. Recurrent substance related legal problems
4. Continued use despite having persistent or recurrent social or interpersonal problems caused by or exacerbated by the effects of the substance.

The criteria for substance dependence can not have been met in order to meet the requirements for this diagnosis. An episode of deliberate self-harm or a suicide attempt may occur in association with substance abuse, and could confirm this diagnosis. APA (1994) comment in the DSM-IV that alcohol-related disorders in general are associated with a significant increase in the risk of accidents, violence and suicide and that severe alcohol intoxication contributes to disinhibition and feelings of sadness and irritability that contribute to suicide attempts and completed suicides.

### **3.1.3 Alcohol misuse**

Alcohol and other substance misuse is an expression used frequently, but a precise definition is hard to determine. For alcohol, it would appear to cover a range of harmful patterns of intake, with a probable need for intervention, and ranges from problematic use in any context, to well established dependence and abuse (Chick & Cantwell, 1994; Neeleman & Farrell, 1997; Vassilas & Morgan, 1997). While it is not a diagnostic term, for this study, a definition of alcohol misuse by Pirkola (1999) is useful because of its breadth, and incorporates a repetitive and probably harmful pattern of substance use that possibly, nearly, or definitely represents a clinical syndrome of dependence or abuse.

### **3.1.4 Psychological addiction**

Walker (1989) following earlier work by Jacobs (1986) further defines a psychological addiction as, a persistent behaviour pattern characterised by:

1. A desire or need to continue the activity which places it outside voluntary control
2. A tendency to increase the frequency or amount of the activity over time
3. Psychological dependence on the pleasurable effects of the activity
4. A detrimental effect on the individual and society.

This definition fits well for both problem gambling and alcohol misuse, and in particular highlights the fact that problems are caused for both the individual and society, which limits the use of the definition to cover all behaviours, as previous definitions of addiction have often been criticised for.

## **3.2 The Similarities and the Differences**

### **3.2.1 The Similarities**

Pathological gambling despite its long history (National Research Council, 1999) was only recognised by the World Health Organisation in 1977. There was debate, which continues to exist, regarding the similarities and the differences between pathological and problem gambling and alcohol dependence and misuse. Ciarrocchi and Kirschner (1991) comment in their work, that Dr Robert Custer, considered a pioneer in work with pathological gamblers in the United States, claimed in 1978 that pathological gambling was 85% similar to alcoholism, but that the other 15% difference was

extremely important, a figure still deemed appropriate by clinicians in the addiction field currently.

Research has been undertaken that addresses the relationship between substance misuse and gambling problems. Ciarrocchi and Kirschner (1991) in their study, investigated the personality dimensions for gamblers in comparison to alcoholics and found that the similarities were more notable than the differences, and that the similarities could not be accounted for by co-addiction alone. Crockford and el-Guebaly (1998) found that heavy alcohol use was highly associated with increased gambling spending and multiple gambling problems and Lesieur, Blume and Zoppa (1986) found that the rate of pathological gambling increased with the number of substances that were being used. This was also indicated in a study by Shepherd (1996). Anecdotal evidence by clinicians working with clients who have gambling problems describes clients talking of drinking when access to gambling is difficult e.g. their gambling behaviour is being closely observed by a spouse, or drinking as a way of either celebrating a win or coping with a loss. In all of these examples it suggests that drinking, using drugs or gambling can at times be interchangeable, achieving similar effects or results, highlighting again the similarities between the addictions.

It is important also to consider the connection in our society between gambling and alcohol and that both are often provided at the same venues. In particular gambling machines have until the introduction of the Gambling Act in September 2003 (Department of Internal Affairs, 2003) been required to be in premises with a liquor licence. These are the most problematic form of gambling in respect of presentation to problem gambling counselling services with 86.2% of presenting clients in 2002 stating this as their primary problem (Paton-Simpson et al., 2003). Clients attending

counselling report situations where they have started to play gambling machines when drinking has become a problem and they have chosen to stop drinking, but have continued to go to the pub to have contact with friends. Continuing to visit a drinking environment has been an important issue to address in relapse prevention for those who have alcohol problems, but the addition of gambling machines into this environment is now another issue that requires addressing specifically. While friends may become drunk, it would appear that the gambling machines fulfil a similar need. This is not often fully understood by clients when they first attend a service for problem gambling, but they are aware that they can no longer connect with their friend when they become drunk, and consider the gambling machine as a harmless distraction or time filler. The relationship with the gambling machines goes on to meet such needs as an escape, or losing time, which can also be gained with alcohol. It can have the effect of dampening down feelings and therefore temporarily relieve current stress. Clients will also acknowledge and describe when they feel that their behaviour is being understood in an environment such as a counselling relationship, the importance of the relationship that they develop with “their” machine, as many will favour one in particular. This special “relationship” can fulfil many needs, such as offering rewards and reinforcement i.e. “You are a winner” displayed on the machine, and not offering any judgement. This is particularly important when relationships with significant people in their lives are strained as is often the case when an alcohol problem is in the early stages of being addressed. Further research in this area would be useful in establishing what needs are being met by gambling, drug and alcohol use. Lesieur and Rosenthal (1991 pg 19) comment:

Further research is needed on the overlapping social world of the substance abusing gambler and the gambling substance abuser.

### **3.2.2 What are the differences?**

There has been little research focused in this area. While there is now a fairly substantial body of work attempting to establish pathological gambling as an addiction (Lesieur & Rosenthal, 1991; Lopez-Viets, 1998; National Research Council, 1999; Zane & Huh-Kim, 1998) rather than an impulse control disorder as it is currently categorised (American Psychiatric Association, 1994), there does not appear to be any clear understanding or agreement over what constitutes the differences related to problem gambling.

One area of difference is the lack of visibility of gambling problems, as well as the way in which they are viewed by society as a whole. Orford and McCartney (1990) have expressed concern at the way in which gambling may be marginalised as a form of dependence. In their study which investigated attitudes towards the causes of excessive gambling, it was indicated that excessive gambling was seen in more moral terms than were other addictive behaviours. The most serious concern that came from their study was that the public and professionals alike may not recognise the existence of gambling related problems at all, and may not consider those with gambling problems as candidates for change.

Certainly, there appear to be difficulties in including screening and brief intervention for gambling in clinics specialising in alcohol and other drugs (Sullivan & Penfold, 1999). A trial examining obstacles to incorporating screening for problem gambling in an alcohol and drug treatment setting conducted by Shepherd (1996) identified several factors including:

- Lack of awareness of the prevalence of gambling addiction among substance abusing populations



- Some saw it as legitimate that lower SES populations often seen at AOD clinics should try to solve financial problems through their gambling
- Preconceived ideas around their ability to identify problem gambling without screening i.e. that it would be obvious
- Gambling addiction may be seen by clinicians as less life threatening than substance abuse and de-prioritised.

This trial was repeated in NZ in 2000 (Sullivan & Penfold) using the Eight Gambling Screen (Sullivan, 1999) in two Alcohol and other Drug services with the surprising results that the same obstacles were identified. The perception of the value of problem gambling screening within this study will be addressed further in the results chapter.

A significant difference is that for those with a gambling problem the solution appears to be in the problem. Clients are often reluctant to seek help for a gambling problem as this involves giving up hope. While the gambling continues, despite the accompanying escalating problems, there remains the possibility that there will be a big win which will solve all the problems and often most significantly will prevent the need to tell others, such as family and employers. There is of course no saturation point with money as there is with alcohol or drugs, and the experience of trying to win back money lost would be common to the majority of those with a problem, described in DSM-IV as chasing losses (American Psychiatric Association, 1994). Another factor of note is the difference when people attempt to stop gambling in comparison to stopping drinking.

McCown and Chamberlain (2000 ) comment:

Whereas people in early recovery from substance abuse often feel somewhat better early on because they begin to reclaim some of their health and abilities, for compulsive gamblers the opposite can be true.

It may take months for them to experience a sense of hopefulness in the face of overwhelming financial and relationship problems.

A further difference that is of great significance are the available statistics concerning gambling and suicide. The study undertaken by Ciarrocchi (1987) which noted that clients dually addicted to alcohol and/or drugs and gambling were at greater risk of suicide, has, as noted in the introduction helped define this current study. His finding that those who had a gambling problem in addition to an alcohol/drug problem had five times the frequency of serious suicide attempts, suggests that there is something important happening for people who also have gambling problems that is different from those who have substance abuse problems alone. While the anecdotal evidence suggests why this may be the case, for example, the accumulation of debt being so great that it is impossible to see a way clear of this, and a study by Blaszczynski and Farrell (1998) supports this, it is certainly an area that warrants considerable further research, which is addressed further in Chapter five.

### **3.3 The Connections**

#### ***3.3.1 International data***

Crockford and el-Guebaly (1998) conducted a review of the literature investigating psychiatric co-morbidity in pathological gambling, which illustrated that rates of lifetime substance abuse disorders among pathological gamblers ranged from 25-63%. The greatest overlap between substance use and pathological gambling was determined by Black and Moyer (1998), but the method of recruiting subjects that appeared to contain some bias and the small sample size of thirty subjects do not make the results of the study as generalisable as the authors of the study indicate. However, even at the

lowest rate of 25% it is indicated that one in four pathological gamblers will have a substance use disorder.

While studies reporting rates of pathological gambling among substance dependent populations have a lower range with results from 10% diagnosed with gambling pathology (Lesieur et al., 1986) to 31% probable pathological gambling for those with both alcohol and drug misuse (Shepherd, 1996), it is still of significance, with at the very least one in ten clients with identified substance use problems who will be likely to have a pathological gambling problem, and probably one in five at a minimum who will have some degree of gambling problem. It is important also, to note the ten years between the two studies and the impact that availability of gambling opportunities is likely to have had on the prevalence of problems. This will be even more significant in NZ, where there has been a rapid increase in gambling availability, particularly of gambling machines, to the extent that NZ now rates second in the world in respect of gambling machines per capita (Australian Productivity Commission, 1999; Department of Internal Affairs, 2003).

Further studies have investigated the possibility of a genetic component. A Study by Slutske et al (2000) identified evidence in a twin study of 6744 adult male twins of the possibility of a genetic vulnerability for problem gambling and alcohol dependence. Lesieur and Heineman (1988) have reported that problem gamblers in substance abuse treatment programmes tend to have a much greater prevalence of problem gambling among their family members. However it is important again to identify specifically what the differences and similarities are between the problem gambling and alcohol dependence in studies such as these.

Raylu and Oei (2002) in a comprehensive review of the literature on pathological gambling highlight that research studies in problem gambling have followed the way of research studies related to alcohol, that being, a focus on what motivates the behaviour, and the continuation of the behaviour despite the associated problems. This leaves a large gap in the literature for both problem gambling and alcohol in regard to what exactly it is that distinguishes those that have problems to any degree and those who do not. Dickerson (1987) concludes:

The most important lesson to be learned from the alcoholism debate must surely be the importance of examining the nature of excessive gambling, its parameters and underlying processes, *in the context of all who gamble.*

### **3.3.2 New Zealand data**

A significant finding of the National Prevalence Study in NZ was the strong connection between alcohol problems and gambling problems. Abbott and Volberg (1999) reported from their 1991 study that a high percentage of probable pathological gamblers and a moderate percentage of problem gamblers had co-morbid alcohol problems. In addition to this, seven years on from this study of probable pathological gamblers, alcohol problems proved to be more significant than gambling, for this group.

New Zealand research has shown high rates of alcohol problems within problem gambling treatment services. In 1997(Sullivan) in a treatment population of 50, found 35% scored 13 or above on Audit (indicating harmful or dependent use of alcohol). In 1999 (Sullivan), with a similar number of 49, determined a rate of 20.4% for those with a score of 13 or above. The reason for the decrease is unknown, but in comparison to a population of non-problem gamblers in the same study (Sullivan, 1999) a rate of 5.6% was shown for those who scored 13 and above (n=430), highlighting a significant difference.

One study has been undertaken in NZ investigating rates of problem gamblers presenting to Alcohol and other Drug services (Mackinnon & Paton-Simpson, 1999). Their study revealed that 11% of clients surveyed were probable pathological gamblers and that 18% (inclusive of probable pathological gamblers) had some gambling problem.

New Zealand research sits within the range identified for prevalence of co-existing alcohol and gambling problems in the literature. As Sullivan and Penfold (Sullivan & Penfold) comment:

Gambling problems and alcohol misuse are often inextricably intertwined. To treat the two independently may result in total treatment of less than the whole problem and tend to fractionate the behaviour artificially into two categories.

# Chapter Four

## Suicide and Deliberate Self-Harm

### 4.1 The Definitions

#### 4.1.1 *Suicide*

Pirkola (1999) points out that suicide lacks a unanimously agreed definition. It is also highlighted that the definition of suicide and the process of determining the classification following death varies from country to country. The World Health Organisation (1998) states:

To be classified as suicide, an act of killing oneself must be deliberately initiated and performed by the person concerned in the full knowledge or expectation of its fatal outcome.

While this definition is clear, Beautrais, Joyce and Mulder (1996) portray suicidal behaviour as on a continuum in a similar vein as the continuum described previously in relation to problem gambling. The continuum ranges to completed suicide but also includes suicidal ideation and communication, as well as non fatal suicide attempts of varying intention and lethality. This model equates well with the definitions of both problem gambling and alcohol misuse in this study, with the WHO definition as a useful description of the end point of the continuum. Ultimately however suicide is a legal finding, as determined by coroners.

#### **4.1.2 Deliberate self-harm**

Deliberate self-harm describes a distinctly different phenomenon than suicide, as evidenced by knowledge that shows that when the suicide rate is up in a country, the rates of deliberate self-harm do not necessarily follow. There have been difficulties regarding terminology in relation to this as O'Carroll et al (1996) states:

In the absence of clear definitions, terms such as “suicide attempt”, “suicide gesture”, or “attention seeking behaviour” provide little useful information about the severity, lethality or level of risk involved.

In addition, the terms suicide attempt and attempted suicide assume an aetiology that is not always present, and Para suicide, a term attempting to separate deliberate self-harm behaviour from suicide, is a neologism that still includes the word suicide. The advantage of the term deliberate self-harm is that it doesn't assume a cause, but simply describes the behaviour (Ovenstone & Kreitman, 1974).

While as stated the definitions for both suicide and deliberate self-harm are variable to the context and the user, deliberate or intentional self-harm has become the preferred term for what has previously been known as attempted suicide and Para suicide in New Zealand (Ministry of Health, 2003).

#### **4.2 The Link between Suicide and Deliberate Self-harm**

Suicide and deliberate self-harm are separate but overlapping problems, and research has taken place over many years attempting to understand how they are connected. The epidemiology between the two is different however, with each having a different relationship to mental illness for example. There is clearly an overlap however with a high percentage of those who kill themselves having a history of deliberate self-harm,

indicating that those who have an episode of deliberate self-harm are at greater risk of suicide. Ovenstone and Kreitman reported back in 1974, that about half of all people who kill themselves have a history of deliberate self-harm, an episode having occurred within the year before death in 20-25% of cases.

A study undertaken by Pierce (1981) identified that a very high risk group of patients was able to be identified using a Suicide intent scale, as the future suicides in a five year study tended to have high scores on the scale for their original self-harm episodes and very high scores for the penultimate self-injury before suicide. More recent research (Hirschfeld & Russell, 1997; Lewis, Hawton, & Jones, 1997) concludes that non-fatal attempts are one of the strongest predictors of an eventual fatal attempt.

### **4.3 Theories to Explain Suicide**

#### ***4.3.1 Sociological theories***

Sociological theories of suicide have been able to explain changes in rates of suicide over time, and across different countries. There have been many theories addressing sociological explanations for over a century. Durkheim in 1899 (Durkheim, 1951) formulated the concept of anomic suicide as the first sociological explanation of suicide. It is described in Avon (1968), as arising as a result of the conditions of existence in modern societies due largely to insufficient integration of the individual into the collective. It is further described by Deavoll et al (1993) as a situation in which individuals are in competition with one another, and expect and demand a great deal from life. This type of situation particularly happens at times of economic crisis such as the Great Depression in the USA, where for some individuals there is an increasing discrepancy between aspirations and satisfactions. A study by MacMahon, Johnson and



Pugh (1963), investigated social conditions and suicide. In relation to the Great Depression they determined that the peak in suicide rates in the 1930's was due to an increase in the suicide rate for men aged 35-74, but not in women or men of other ages, supporting an association between unemployment and suicide. However Platt (1985) highlighted, in a review of studies investigating the connection between suicide and unemployment, that the place of mental illness within this was unclear, given that both suicide and unemployment have an association with mental illness independently.

Durkheim in his work of 1899 also describes two other sociological theories relating to suicide. Egoistic suicide is described as a situation where a person has no concern for the community, and self-annihilation is committed because the person feels extreme alienation from others and from society (Davidson & Neale, 1994). Altruistic suicide is suicide committed by people who believe that taking their own lives will benefit society, and that it serves a social purpose (Davidson & Neale, 1994).

#### ***4.3.2 Psychological/medical theories***

Psychological theories of suicide address individual responsibility and choice as the primary focus, and are a more recent attempt to understand suicide and deliberate self-harm. This group of theories fits far more with how gambling problems have been understood to date as well, although there is a more recent attempt to consider population approaches, rather than simply individual responsibility (R. Brown & Raeburn, 2001).

The psychological autopsy approach to suicide by psychiatrists over the last thirty years in many different countries has consistently found that the vast majority of people who complete suicide are suffering from a diagnosable mental disorder (Deavoll et al., 1993). There is evidence that rates of depression are increasing (Klerman & Weissman,

1989) and Shaffer (1988) suggests that for teenagers the combination of depression, substance use and conduct disorder, along with the fact that there have been increases in the rates of these disorders over the last twenty years, may account for the increase in the youth suicide rate.

Lindsay (1973) describes this process of psychological autopsies as a psychobiologic variant of a psychological or psychiatric theory, in which the hypothesised relationship between suicide and the concept of mental disease (s) is considered. The implications of this model are that there is either a psychobiological disease that will be amenable to specific therapy, or that the environment can in some way be altered or improved. There have been indications from post-mortem studies that there may be a biological cause that relates to the completion of suicide e.g. a decrease in serotonin receptors, which are associated with decreased restraint (Hatcher, 2001).

The other theories that sit within the psychological framework are those that are from a psychoanalytic or psychodynamic paradigm. There are a range of theorists sitting within this paradigm who suggest that suicide is either an act of aggression, particularly self-rage e.g. Freud (D. Brown & Pedder, 1989) or a wish to escape, which could incorporate any of the following as summarised by Hatcher (2001):

- Suicide as a gateway to nothingness
- Reunion with someone lost
- Escaping from persecution
- To destroy an enemy who has taken up a place within the patient
- Passage to a better world

- Revenge by abandonment or by destroying his or her favourite possession

### **4.3.3 Connecting the theories**

The range of theories that has been proposed to explain why suicide occurs, and why prevalence of suicide differs at particular points in time, considers both sociological and psychological perspectives. Neither group of theories explains all aspects of suicidality independently, so it is important to consider both aspects in terms of contact with individuals who have attempted suicide, and the context of the society they are within. Deavoll, Mulder, Beautrais and Joyce (1993) comment that within NZ there are social and economic factors that are associated with both the two major rises and the lowest rates of suicide in NZ males over the last century, but that there is compelling evidence that psychological factors are very important in the current rise in suicide, especially with youth. They further add:

We need to identify the combinations of social and psychological factors that will allow more sensitive prediction of those most at risk of suicide.

### **4.4 Prevalence - International Data**

As stated previously there is some difficulty in comparing suicide statistics from country to country because of the differing methods of data collection, and different coroners' interpretations of the law in different countries. Ohberg (1998) has estimated that the variation in suicide collection rates between countries should cause less than 10% difference and should not prevent major conclusions being drawn both within and between countries.

Weissman et al (1999) and Statham et al (1998) report on large scale general population surveys investigating lifetime prevalence rates in relation to suicidality. The rate of

suicidal ideation has ranged from 5% to 18%, for suicidal plans around 3%, and for actual attempts, the range has been from 1% to 5%. They have also reported that the rate of completed suicides across Westernised countries is relatively stable, with estimates of approximately 0.01%.

## **4.5 Prevalence - New Zealand Data**

### **4.5.1 Suicide**

In New Zealand, deaths by suicide are subject to a coroner's inquiry and can only be officially deemed suicide once the inquest is complete (Ministry of Health, 2003).

While these statistics are accurate, they are delayed and the length of time they can take to determine, affects the availability of statistics relating to suicide. The most current statistics that are available in NZ are for the year 2000, and published by the Ministry of Health (2003).

The data shows however, that there were 458 deaths by suicide in 2000. The number of suicides was down for the previous year by 58 and is the lowest rate since 1985. The rate of suicide (the frequency with which it occurs relative to the number of people in a defined population) for the total population was 11.2 per 100,000 in 2000.

### **4.5.2 Deliberate self-harm**

The Ministry of Health (2003) statistics report highlights that the interpretation of the data must be undertaken cautiously in respect of deliberate self-harm. They indicate a number of reasons that the data may be inaccurate:

1. Records are only kept on those who are actually admitted to hospital

2. Changing treatment practices make comparisons across years difficult e.g. improvements in medical practice means more people can be treated on an outpatient basis
3. The figures include self-inflicted injury where the intent may not have been death
4. Hospitalisation figures include people who may have been admitted more than once and also include those who died in hospital.

In addition, the definition of intentional self-harm has changed to include cases not previously included, so comparisons with other years cannot be made. In 2000 however, there were 5168 hospitalisations for deliberate self-harm, while the hospitalisation rate for intentional self-harm was 129.2 per 100,000.

#### **4.5.3 Ethnic differences**

While suicide deaths have reduced in non- Maori, the rates have remained almost the same for Maori. Eighty Maori died by suicide in 2000, a rate of 13.1 per 100,000 (Ministry of Health, 2003). This compares with 12.1% the previous year. In 2000, 12 Pacific people died by suicide, and 21 Asian people. Six of the suicide deaths for Pacific people were for youth aged 15-24, and five of the Asian deaths were for this age group.

For intentional self-harm amongst Maori the rates for 2000/2001 were 119.0 per 100,000, below the all-ages averaged indicator. This totalled 743 hospitalisations, 459 of whom were female and 284 male.

#### **4.5.4 Gender differences**

In NZ in 2000, the all-ages sex ratio for suicide in NZ was 4.5 male suicides to every female suicide. Beautrais (2000) in reporting for the NZ Ministry of Health suggests that the difference in suicide rate between males and females is due to their choice of methods. Females however have far higher rates of deliberate self-harm or non-fatal suicide attempts. Although both male and female suicide deaths have reduced in the last two years, the female rate was the lowest in 2000 since 1961 (Ministry of Health, 2003).

The female to male ratio for intentional self-harm in NZ 2000/2001 was 1.8 female hospitalisations to every male hospitalisation, which equated to 3260 female hospitalisations and 1800 male hospitalisations in this time period (Ministry of Health, 2003).

#### **4.5.5 Age**

While New Zealand's youth suicide rates have been concerning in terms of their place in the international data set, the rate has now decreased for five consecutive years (Ministry of Health, 2003). The number and rate has also dropped for both Maori and non-Maori as a result of the reduction in the number of female suicide deaths. New Zealand still however, has the second highest rate of suicide for male youth aged 15-24 years, behind Finland, and fourth highest rate for female youth among 12 selected OECD countries, behind Norway, Japan and Finland. There were four suicide deaths in people under fifteen years of age in 2000. It is of note however that the highest rates of suicide have now moved to the 25-29 year age group.

In respect of intentional self-harm, youth aged 15-24 years had the highest hospitalisation rates in 2000/2001 at 282.4 per 100,000 (1496 hospitalisations). This

consisted of a rate of 393.5 per 100,000 for females and 176.3 per 100,000 for males aged 15-24 years. The rate for Maori was 244.8 per 100,000, with this being made up of a rate of 307.7 per 100,000 for Maori females and 183.2 per 100,000 for Maori males of this age group.

In comparison to the international all-age suicide rates, NZ was fourth for males and tenth out of twelve for the female rate. In the year 2000 in NZ, both the 45-64 age group and the 65 and over recorded the lowest rates since 1948 (Ministry of Health, 2003).

#### **4.6 Connections with Co-existing Psychiatric Disorders**

New Zealand research has highlighted a significant connection between suicidality and co-existing psychiatric disorders (Beautrais, Joyce, Mulder et al., 1996). Their research determined that of those who made serious suicide attempts, 90.1% had a mental disorder at the time of the attempt. Further to this, the incidence of co-morbidity was high, and the risk of a suicide attempt increased with increasing psychiatric co-morbidity. Beautrais et al (1996) reported that those subjects with two or more disorders had odds of serious suicide attempt that were 89.7 times the odds of those with no psychiatric disorder. The study was strong, and highlighted its own strengths and limitations, the most significant limitation being that the findings were restricted to medically serious suicide attempts and therefore raised questions as to its generalisability to less serious suicide attempts, or deliberate self-harm.

##### **4.6.1 Deliberate self-harm**

While the research regarding suicide has suggested a connection of over 90% between suicide and psychiatric illness (Barraclough, Bunch, Nelson, & Sainsbury, 1974;

Beautrais, Joyce, Mulder et al., 1996; Blaszczynski & Farrell, 1998), the connection with deliberate self-harm has a more variable connection of between 10 and 80% (Hatcher, 2001). House, Owens and Storer (1992) comment in respect of their own study and a review of the literature, that the majority of people who harm themselves are not mentally ill. They further comment that in contrast to mental illness, social and personal problems occur in the vast majority of self-harm patients. This consequently impacts on the most appropriate form of treatment, and for those who have had an episode of deliberate self-harm, an intervention that relates to employment, financial or relationship problems may be the most appropriate in contrast with those for whom suicide was the goal.

#### **4.6.2 Suicide**

Psychological autopsies have contributed significantly to the connection between suicide and psychiatric illness. In a review of a hundred cases of suicide, Barraclough, Bunch, Nelson and Sainsbury (1974) stated that ninety three of the hundred suicides were diagnosed mentally ill, and that depression and alcoholism accounted for 90% of the suicide diagnoses. Robins (1986) in his review of studies of completed suicides noticed that affective disorder and alcoholism accounted for the majority of psychiatric diagnoses among completed suicides (54% to 85%).

One literature study concluded however, (Inskip, Harris, & Barraclough, 1998) that the lifetime suicide risk figures often quoted in the literature appear to be too high, with their results of the meta-analysis undertaken estimating a 6% risk of affective disorders and 7% for alcohol dependence. It is of interest that a mathematical model should yield such differing results from qualitative studies described earlier, and the authors of the



study comment themselves that neither of the two models fitted to the data are a good statistical fit.

While affective disorders are considered in the literature to be highly correlated to suicidality, Beck, Steer, Kovacs and Garrison (1985) suggest that the intensity of suicidal intent was more highly correlated with hopelessness than depression. In a study undertaken with patients hospitalised because of suicidal ideation, only the Hopelessness Scale and the pessimism item of the Beck Depression Inventory predicted those that eventually suicided. A score of ten or more on the Hopelessness Scale identified 91% of the eventual suicides. This would seem important for further research, and may have particular relevance for those with gambling problems. The anecdotal evidence provided by clients with a gambling problem would suggest that feelings of pessimism and hopelessness often accompany the loss of large sums of money and the realisation that gambling cannot provide the solution to their financial problems. The shift from the hope that is associated with gambling in the short term, to the hopelessness of not being able to put finances and other problems right by this means is very often accompanied by suicidal thoughts on presentation to treatment services.

Recent research (MacCallum & Blaszczynski, 2003) attempting to further understand the connection between problem or pathological gambling and suicide could find no direct link between the two, but instead comments that it is stress, psychological angst or depression (although this may be related to gambling, this could not be directly established), that has the more substantiated connection with suicidality.

# Chapter Five

## Suicide, Problem Gambling and Alcohol Misuse

### 5.1 Suicide and Problem Gambling: Important Connections

Research investigating connections between problem gambling and suicide has emerged from many sources. Studies have included those undertaken at a societal level, attempting to, for example, determine the impact of casinos on suicidality in a region. There have also been general population studies, studies of those in treatment, analysis of individual gambling related suicides and finally reported individual case studies.

#### 5.1.1 *Epidemiological study*

The Australian Productivity Commission (1999) in their report on the nation's Gambling Industries attempted to estimate gambling related suicides for the population of Australia and appear to have taken a considered approach to this. They investigated case studies of individual gamblers and surveys of problem gamblers both in treatment and as identified as part of a general population. It was commented as probable that a proportion of suicides of problem gamblers reflect wider problems and may have occurred anyway, but equally many suicides may be misdiagnosed as car accidents, drowning, or other forms of death seen as accidental. The Commission, using epidemiological evidence determined a figure at around 400, but acknowledged that this was probably an overestimate and that the figure was probably between 40 and 400

per year. Their concluding comment was that there is little doubt that some suicides are linked to gambling.

### **5.1.2 Casinos and suicidality**

There has been a debate in the literature on the impact of casinos on suicidality in regions. Phillips, Welty, and Smith (1997) report that Las Vegas, the premier gambling centre in the United States, displays the highest level of suicide in the nation. They highlight that visitor suicides account for 4.28 percent of all visitor deaths in Las Vegas, compared with 0.97 percent for the nation as a whole. McCleary et al (1998) counteract these claims however, and using a different form of analysis, the suicide specific mortality rate as opposed to the suicide proportionate mortality rate used by Phillips et al, draw very different conclusions. McCleary et al state that using this different method of calculation, Las Vegas ranked 26<sup>th</sup> nationally when the ratio of visitor suicides to the total number of visitors is employed. It is important to note however, that this latter research was sponsored by the American Gaming Association. Both studies in fact have significant flaws, for example, examining only casinos, not all forms of gambling and not considering spending on gambling per capita.

In 2002, a more comprehensive review was conducted across 148 US metropolitan areas using data from government as well as gaming industry sources (McCleary, Chew, Merrill, & Napolitano, 2002). It was concluded that in cross-section, metro area suicide was strongly correlated with region, accidental death and homicide rates, age and race composition and economic vitality, followed by a modest net positive correlation with casino presence. In contrast however, the time series analysis yielded no evidence of a gambling effect.

On a smaller scale Lester and Jason (1989) examined suicides that actually occurred at Atlantic City Casinos between 1982 and 1986 and found that 3 of the 6 suicides, (all male) who were visitors to the casino, appeared to be gambling related.

### ***5.1.3 Population based studies***

The National Research Council (1999) in the USA, comment on general population studies linking reported suicidal thoughts with pathological gambling. One study (Cunningham-Williams, Cottler, Compton, & Spitznagel, 1998) found that the association between the two was not significant, but a Canadian study modelled on this, reported the rate of attempted suicide among the 30 pathological gamblers identified, to be 13.3% as opposed to below 4% found in general population studies. However, as there is no rate provided for this behaviour among gamblers without problems there is no way to determine the increased risk among the group of pathological gamblers (Bland, Newman, Orn, & Stebelskuy, 1993).

The most recent population based study, a further Canadian study (Newman & Thompson, 2003) with a sample size of over 7000, concluded that a history of pathological gambling is associated with attempted suicide, and that the association may be due to a common factor, 'mental illness'.

### ***5.1.4 Treatment populations***

Studies investigating suicidality in treatment populations establish strong links, as would be expected. A study by Sullivan (1994) in New Zealand following the first twelve months operation of a Gambling Problem Hotline stated that over 80 percent of problem gamblers reported suicidal ideation and saw suicide as a solution to their gambling problems. While it might be expected that a new, potentially anonymous service may attract those with the most serious of problems in the initial phase, it

highlights the way in which those with serious gambling problems identify suicide as a solution. (M. Brown, 1994) quotes a figure of 59% of clients in a survey of those in treatment, who had experienced some measure of suicidal thought. He comments that this also does not account for the unknown numbers who have completed suicide.

A more recent study by Petry and Kiluk (2002) confirms other reports of high rates of suicidality in pathological gamblers in an investigation of 342 individuals entering a gambling treatment programme. Gender, age, treatment site and substance abuse treatment histories were controlled for and it emerged that those with suicidal ideation, compared to those with no history of this had spent more money gambling in the month prior to treatment, reported greater cravings for gambling and had higher SOGS scores. They suggest, with the evidence to date, the need for more intensive and focused treatments for pathological gamblers with suicidality.

Overall, the literature appears to report a strong association between rates of suicidal thoughts and attempts and problem gambling in treatment populations. An earlier study (Frank, Lester, & Wexler, 1992) of 162 members of Gamblers Anonymous showed that twenty percent of subjects reported having attempted suicide and 77 percent had thoughts of committing suicide. While again this highlights the end of the spectrum of those with serious gambling problems it formed the beginnings of a growing body of evidence in respect of the association. The Australian Productivity Commission (1999), in tabling evidence from the literature on suicide thoughts and attempts among problem gamblers, reports figures of between 4 percent to 31 percent attempted and 17 percent to 80 percent who had suicide ideation.

### **5.1.5 Completed suicides**

While numerous studies have investigated completed suicides, it would appear that gambling has largely not been considered as an issue within these. There are reported cases in the literature of suicide where gambling may well have been the precipitator, or part of the problem, and this is not considered. Highlighting this are two case examples offered by Bongar (1996), in which suicide followed within one week of contact with a teaching hospital's emergency mental health service. Both were males, aged 50-60 years, with major depressive episodes. Both had supportive families but felt that they were inadequately providing for their families. Neither admitted continued suicidal thoughts but, in both these cases, shame and humiliation appeared to be the catalytic motivation to suicide. The description within these case examples typifies presentations to problem gambling counselling services and raises the issue of how often problem gambling may be overlooked in a presentation to mental health services.

Other clinical studies investigating suicides have found psychosocial stressors in most suicide cases, with various researchers citing interpersonal conflicts and losses, medical illness and economic problems as being the most common (Heikkinen, Aro, & Lönnqvist, 1994; Murphy, 1992; Rich, Warsrad, Nemiroff, Fowler, & Young, 1991). Again, while gambling is not considered or named specifically within these studies, often concerns regarding economic difficulties may warrant further investigation. Murphy et al have noted a strong relationship between alcohol dependence and these frequent stressors such as economic problems, and further comments that:

“in addition to a clustering of adverse events prior to suicide, a set of cumulative risk factors for alcoholic suicides has been presented, including current heavy drinking, major depressive disorder, lack of social support, unemployment, serious medical illness, living alone and suicidal communication.”

All of these factors are frequently present in clients who present at problem gambling services, which suggests again that problem gambling specifically may have been a factor that is frequently overlooked, and that as the small amount of research currently has indicated (Ciarrocchi, 1987; Kausch, 2003) the presence of both these problems concurrently may significantly increase the risk of suicide.

### ***5.1.6 Psychological autopsy***

A further way of approaching and understanding the link between gambling and suicide is by psychological autopsy. Blaszczynski and Farrell (1998) undertook an analysis of completed gambling related suicides and evidenced that almost a third had previously attempted suicide, and one in four had sought mental health assistance for their gambling problem. Other factors identified in the records included co-morbid depression, large financial debts and relationship difficulties. This descriptive study highlights the overlap between gambling, psychiatric disorders, as well as other life problems and suicides. It also may suggest that there is an important link between problem gambling and serious suicide attempts.

### ***5.1.7 Individual case studies***

#### ***5.1.7.1 The international literature***

Jacobs (2000) reports in the Journal of the American Medical Association a case in which a 52 year old suicidal man is assessed, treated and also presented to a clinical conference. The client in question, Mr D, almost jumped in front of a moving train, and attributed this episode to gambling debts piled up in the previous six months and the ensuing conflict with his family. The case study describes Mr D attending a gambling addiction program from which he relapsed and subsequently lost several thousand dollars, as well as another individual's money, the amount of which is not detailed. He

had described his mood as hopeless and had considered staging his own accidental death in order for his family to collect on his life insurance. This is a common situation for those presenting to treatment services, where they have a life insurance policy.

Much of the detail of Mr D's history relates to gambling, including his father who gambled and drank. He had strongly contemplated suicide only once previously when he was briefly held in solitary confinement for a minor crime. The circumstances of this crime were not discussed but there is strong evidence supporting the connection between problem gambling and criminality (American Psychiatric Association, 1994; Australian Productivity Commission, 1999; Potenza et al., 2000; Raylu & Oei, 2002; Sullivan, 2001a), and he had also considered criminal activity as a way out of his current crisis. While it is acknowledged by Jacobs and those present at the clinical conference that his gambling addiction sets up crises that potentiate his risk for suicide, the gambling component of his presentation does not seem to be considered as a central factor in his presentation to services. This case highlights that while the association between suicide and problem gambling has begun to be considered, its seriousness in regard to the part it plays in 'hopelessness' and the suicidality has not yet been fully realised.

In a follow-up to Mr D a year later (Parker & Hartman, 2002), there is marked improvement commented on by both Mr D himself as well as his current psychiatrist. It is of significance that his psychiatrist appears to have attributed his improvement to his medication, fluoxetine hydrochloride and risperidone. Mr D himself comments on the fact that he has been working two full-time jobs and has not gambled at all since the last year, but says he could still fall back into it, seeming to consider this as his greatest risk factor.



### ***5.1.7.2 The importance of asking: A New Zealand case example***

As the connection between problem gambling and suicidality has been well established, the following example of clinical work by the author (Penfold, 2003) highlights the importance of raising the issue of suicide even in longer term therapeutic relationships. John (a pseudonym) had been attending counselling for problem gambling for approximately ten months, roughly every fortnight. He had been aware of his gambling problem for over 10 years. It had contributed to the break up of his last marriage, and although he was in his late 50's with a steady job, it had left him in a situation where he was living from one pay cheque to the next. John had attended counselling on and off at different services over many years but always dropped out of contact when he began gambling again, feeling that he had disappointed the service or the counsellor. The crisis that had precipitated his latest presentation to counselling services ten months earlier had been the suicide of his older brother who also had struggled with a gambling problem. Although John had gambled on a few occasions over the previous ten month period, he had broken his previous pattern by agreeing to make it a priority to come back to counselling if he gambled and he had managed this successfully and learned a lot about himself and his relationships with other people in the process.

At this particular appointment John had turned up, but withdrew into his chair in the way that was typical for him when he had gambled. He acknowledged that he had gambled since the last session, but talking about this did not appear to provide any relief in the way that it usually had done. In talking through what John had done and how he had coped since last gambling, his avoidance of the subject alerted the need to ask again at this point in counselling whether John had considered suicide as a way of managing since the last episode of gambling. Asking John appeared to energise him. He stated that even raising the subject was ridiculous, but then went on to talk about the

fact that he had been very aware over the last week of the impending anniversary of his brother's suicide, and the rest of the session was spent discussing this further.

At the following session, a week later, John walked into the counselling room, sat down, and said "How did you know?" He was referring to the question the previous session regarding whether he had considered suicide, and was able to acknowledge that he had in fact been planning to kill himself. The combination of feeling hopeless about the fact that he had gambled again, and the approaching anniversary of his brother's suicide, and feelings of envy toward his brother, who no longer had to cope with feelings about gambling, had made suicide seem a reasonable option to John. Beginning to acknowledge this secret had made a difference to him, along with talking about it, which made him feel as though there were other options.

The example of John's situation highlights the importance of asking and continuing to ask about suicidal thoughts, even in longer term relationships with clients. The nature of gambling problems and the way in which they are able to be kept private much more than many other addictions fits very well with the often secret nature of suicidal thoughts. In addition to this, the financial implications of a gambling problem can often mean long term solutions are required in order to find balance in finances, in relationships and perhaps in work, and suicide can sometimes seem like a more immediate, less painful solution. This is particularly so because of the shame attached to both gambling problems and suicidal thoughts, with both being difficult to voice.

## **5.2 The Contribution of Alcohol**

While the exact role of alcohol in suicide is also unclear, a strong association certainly exists. Welte, Abel and Wieczorek (1988) and Berkelman et al (1985) report that

between 18% and 66% of suicide victims have alcohol in their blood at the time of death. Inskip, Harris and Barraclough (1998) report from their meta-analysis of mortality studies that the lifetime risk for suicide is 7% in alcohol dependence. In considering depression in relation to alcohol misuse, Cornelius et al (1995) determined by comparing depressed alcoholics, non-alcoholic people with depression and nondepressed alcoholics that depressed alcoholics had significantly higher suicidality than subjects with either depression or alcohol dependence.

House et al (1992) report that in the hospital in which they work, 48% of self-harm episodes are preceded by alcohol consumption and that 9% of episodes result in a diagnosis of alcohol or drug dependence. This is consistent with research by Hawton, Fagg and McKeown (1989), which determined that alcohol consumption was a part of some 40-50% of deliberate self-harm episodes. House et al (1992) go on to report that less than half of those diagnosed as dependent are referred to local addiction services, and of those that are, less than half present for treatment.

A clear connection also exists between alcohol and gambling problems as has been demonstrated in Chapter Three. Anecdotally, clients of problem gambling services who attended groups together, in discussing suicide attempts and ideation would often reveal that using alcohol would be a part of the plan in order to give them the disinhibition to go through with the plan, and in addition, hoped that it would make them less aware of what they were doing. Pirkola (1999) comments however, that the contribution of an inebriated state to the final act of suicide is not yet well understood.

## **5.3 Interventions**

### **5.3.1 *Psycho-social approaches***

A significant study by Hawton and colleagues (Hawton et al., 1998) with 2452 randomised participants attempted to determine the most effective psychosocial forms of treatment following an episode of self-harm, along with effective pharmacological treatments. While the results indicated a need for further research as they were unable to detect clinically significant differences, several important results suggested potential in respect of psychosocial approaches. These were for problem solving therapy, the provision of a card to allow patients to easily make emergency contact, and long term psychological therapy for female patients with borderline personality disorder and recurrent self-harm behaviour. In addition, they deemed that assertive outreach was important to ensure patients stayed in treatment, and commented that home treatment had been found to substantially increase uptake of treatment in an earlier study prior to this research (Hawton et al., 1981).

House et al (1992) comment that a psychiatric assessment, despite the low prevalence of mental illness, still has a place following an episode of deliberate self-harm. They go on to suggest however that best practice is a multi-disciplinary team approach. This has the benefit of integrating psychiatric and social interventions, of which patients will require particular mixes. Multi-disciplinary teams also often have the ability to be more flexible, and have a greater potential to include family and network interventions which are difficult in a hospital environment. House et al (1992) comment that any follow up intervention has to be delivered early if it is going to have impact, and a study by Owens, Dennis, Jones, Dove and Dave (1991) showed that even when follow up is offered 1-3 days later in the hospital environment, non-attendance is very high, further indicating the usefulness of a team that has the capacity to follow up in the community.

### **5.3.2 Pharmacological approaches**

The large scale study by Hawton et al (1998) suggested that the pharmacological approach that was of most promise following an episode of self-harm was depot flupenthixol for recurrent self-harm, although noted that there may be a reluctance by patients to accept this because of the side effects and other practical and ethical considerations. This study did not determine any evidence for the support of antidepressants in preventing repetition of deliberate self-harm, but commented that the report is unable to give any indication of whether antidepressants could be of benefit.

Stanton (2003) suggested recently, in reviewing a study by Petry (2002) that although those working with problem gamblers have often referred to the substance misuse field for direction, pathological gambling researchers have conducted innovative studies that may inform substance abuse researchers. These have particularly been in relation to investigating pharmacotherapies, and these may well offer a useful way forward for those clients who have co-morbid alcohol and gambling problems and have attempted suicide as a solution to this. An admission to hospital following an episode of deliberate self-harm or a suicide attempt is an opportunity for a psychiatric assessment, and a pharmacological intervention may beneficially impact on both the associated gambling and alcohol problems.

### **5.3 Problem Gambling, Alcohol and Suicide – Putting the Picture Together**

Kausch (2003) in his recent study commented that there has been no attempt in previous studies to identify the contributions of co-morbid conditions such as substance abuse, to the suicide attempts of pathological gamblers. While this is not entirely accurate, there are certainly few studies investigating this three way connection, and an

initial significant study by Ciarrocchi (1987) has had little follow up. Ciarrocchi in this study, as detailed earlier noted that clients dually addicted to alcohol and/or drugs and gambling were at a greater risk of suicide. He reported that 100 percent of chemically dependent pathological gamblers were diagnosed with major depression and of those, 42 percent had made a serious suicide attempt. This was five times the frequency of the chemically dependent group alone.

Kausch in his 2003 study undertook a retrospective chart review and determined that 39.5% of the 114 veterans had reported that they had made a suicide attempt at some time in their lives. Of these, 64% reported that their most recent attempt was related to gambling. He also noted that 42% of those admitted with pathological gambling had a history of alcohol dependence.

Blaszczynski and Farrell (1998) comment that:

“given that these variables of major depression, alcohol and substance abuse, and also marital dysfunction which are considered risk factors for suicide in both the general population and among psychiatric patients, it is surprising that only a few studies have investigated risk factors associated with suicide in populations of pathological gamblers.”

# Chapter Six

## Aims of the Study

### 6.1 Introduction

The rationale for this study lies in the fact that there is little research in the area of problem gambling and suicide, and considerably less that addresses the connection with alcohol in association with problem gambling and suicide. (Potenza et al., 2002) comment that the relationship between different levels and types of gambling and suicidal thoughts and behaviours is at present incompletely understood and warrants further investigation.

The research that has been undertaken in this area to date has primarily focused on treatment populations, both within New Zealand and internationally. While there have been a small number of studies that consider other aspects such as: the impact of casinos on suicidality in a region, general population studies, and analysis of individual gambling related suicides, the literature search confirms there has been no study undertaken that considers what part problem gambling may play in the population who have attempted suicide, or fall into the category of deliberate self-harm. This study will begin to consider this gap in the research, and undertake to address the presence of alcohol in relation to problem gambling and attempted suicide.

## 6.2 Aims

This research aims to be an exploratory study to discover any connection between attempted suicide, problem gambling and alcohol in a consecutive series of patients who have presented to hospital after deliberately harming themselves. There are three aims in this study:

- To estimate the incidence of gambling problems in a population who have presented to hospital following an episode of deliberate self-harm.
- To compare the prevalence of problem gambling identified in the study to the general population using currently available statistics in sub-groups of age, gender and ethnicity.
- To investigate the effect of alcohol and gambling on the seriousness of suicide attempts.

## 6.3 Definition of Terms

**Pathological Gambling:** Persistent and recurrent maladaptive gambling behaviour which causes disruption or damage to several areas of a person's functioning as defined by DSM-1V (American Psychiatric Association, 1994)

**Problem Gambling:** Less severe but interfering patterns of excessive or destructive gambling, (Potenza et al., 2002) which will be used to include pathological gambling in this study unless stated.



**Gambling Machines:** Will be used in this study to describe what can be referred to as gambling machines, video gambling or gaming machines, video lottery terminals and pokies.

**Alcohol Misuse:** Will be used to describe all definitions relating to an alcohol problem that a range of researchers and clinicians regularly use. These include substance or alcohol dependence, alcoholism, alcohol abuse, and alcohol problem.

**Suicide:** The definition offered by the World Health Organisation (1998) will be used for the purpose of this study:

To be classified as suicide, an act of killing oneself must be deliberately initiated and performed by the person concerned in the full knowledge or expectation of its fatal outcome.

**Deliberate or Intentional Self-harm:** An acute act of self-harming behaviour which may or may not have included an expectation to die.

# Chapter Seven

## Methods

### 7.1 Ethics Approval

Approval was gained from Auckland Ethics Committees on 23 April 2003 (Appendix 1). Approval was also sought from the Waitemata District Health Board Maori Research Advisory Group as an important part of the ethics approval.

### 7.2 Study Design

This is a quantitative study that has used a structured questionnaire in a clinical setting. All patients who attended North Shore Hospital in Auckland from June 9<sup>th</sup> 2003 to October 31 2003 following a suicide/self harm attempt were invited to complete the questionnaire (Appendix 2) if the clinician who assessed them considered this appropriate.

### 7.3 Setting

The study was conducted in the Accident and Emergency Department of North Shore Hospital, Auckland, a hospital under the management of the Waitemata District Health Board. The number of people who live within the Board's catchment area is estimated at 445,000 (Waitemata District Health Board, 2003). The Liaison Psychiatry service of

North Shore Hospital or the on-call psychiatric service are advised and requested to conduct an assessment following the presentation of all patients as a result of a suicide attempt. Of all patients who presented to North Shore Hospital following a suicide/self harm attempt 96% were seen (Hatcher, 2003).

## **7.4 Interviewers**

### **7.4.1 Clinicians**

The interviewers of those who participated in the study were Psychiatrists, Psychiatric Registrars and Psychiatric Nurse Consultants who are employed by Waitemata District Health Board. The majority were employed within North Shore Hospital's Liaison Psychiatry Department, and the time period of the study coincided with a new intake of registrars, which meant that the group of interviewers did not change over the duration of the study. On call psychiatric registrars were also asked to participate in the study, and these were made up of all psychiatric registrars within Waitemata District health Board. This amounted to a pool of thirty different clinicians who participated in the study to varying degrees.

## **7.5 Participants**

### **7.5.1 Inclusion/exclusion criteria**

All patients were included who presented to North Shore hospital after an episode of overdose and/or deliberate self-harm between June 9<sup>th</sup> 2003 and 31 October 2003. Interpreters were available for those patients who preferred to speak languages other than English. Some of the patients who were eligible to be invited to participate couldn't be interviewed due to a variety of reasons such as: patient too drowsy, patient

stated that it was not deliberate self-harm or that the interviewer/psychiatrist felt that it was not appropriate for an unstated reason.

## **7.6 Interview process**

The questionnaires were administered by the interviewers as described above, comprising thirty different interviewers in total. All patients were, at the discretion of the interviewer/psychiatrist invited to participate in the study and were given the information sheet to read (Appendix 3), followed by the consent form to sign (Appendix 4).

Each participant had the questionnaire read to them and this was completed by the interviewer. This procedure was undertaken as part of the usual assessment process of patients presenting to North Shore Hospital following deliberate self-harm. The questionnaire comprised three short screens (described below) as well as demographic data. Two of the three screens were already administered as standard procedure, so the addition of one further screen, the gambling eight screen, estimated to take 40 seconds to one minute to complete (Sullivan, 1999) was the only additional time consideration. Demographic data was completed after the interview from information routinely collected, and was collated on the data collection sheet (Appendix 5) by the research assistant, who was able to be funded by a grant from the Oakley Foundation.

The participants who agreed to participate in the study came from a wide range of ethnic backgrounds, but with the on call process determining who undertook each interview, matching for this was not possible. This is discussed further in the results chapter.

## **7. 7 Questionnaire**

The questionnaire comprised the following (see Appendix 2) and was accompanied by the data collection form (Appendix 5).

- Beck Suicidal Intent Scale
- CAGE
- EIGHT Screen (Early Intervention Gambling Health Test)

### **7.7.1 Beck Suicidal Intent Scale**

It has been highlighted by Fox and Weissman (1975) that contrary to popular opinion there is a very low correlation between suicidal intent and medical seriousness of attempts, especially for self-poisoning. It is therefore very important to establish the extent to which death seems to have been the intended outcome, as the danger of an attempt only shows a higher correlation with suicidal intent with individuals who are aware of the likely medical consequences (Beck, Beck, & Kovacks, 1975)

The Suicidal Intent Scale (Beck, Schuyler, & Herman, 1974) is interviewer rated and consists of two parts. The first concerns factual aspects of the attempt and the circumstances in which it occurred and can be obtained from the patient or other informants (Thompson, 1989). The second section addresses the patient's thoughts and feelings before and after the attempt.

The Suicidal Intent Scale takes approximately ten minutes to complete. The scale consists of 15 items across the two parts and each item is scored 0 – 2, with a total

possible score of 30. However the two parts of the scale can be used independently. The higher the score the greater the suicidal intent is determined to be.

The inter-rater reliability of the Suicidal Intent Scale is considered to be good, and although a true measure of validity has not been conducted as the scale was not designed to assess risk of repetition, it is considered that it is reasonable to expect suicidal intent to correlate with risk of eventual suicide (Thompson, 1989).

### **7.7.2 CAGE Alcohol Screen**

The CAGE questionnaire was first developed in 1968 (Ewing, 1984) and validated in 1974 by Mayfield, McLeod and Hall. They comment that it was developed to meet requirements of brevity, ease of administration, sensitivity and validity in respect of detecting alcoholism or alcohol abuse. It is not a diagnostic instrument, but an affirmative answer to two or more questions indicates that further assessment of potential alcohol abuse is warranted (Dawe, Loxton, Hides, Kavanagh, & Mattick, 2002). It has demonstrated all these qualities and remains in use worldwide some thirty years later. It has been highlighted by Watson et al (1995) however that the CAGE is a better identifier of alcohol dependence in the previous twelve months than as a lifetime measure when it was demonstrated by Green and Whichelow (1994) that individuals did not answer the individual CAGE questions consistently over a period of seven years.

The CAGE questionnaire consists of just four questions which focus on Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers (this refers to early morning relief drinking to prevent withdrawal). This forms the acronym CAGE which helps physicians recall the questions (Ewing, 1984).

Steinweg and Worth (1993) comment that the CAGE questions offer a powerful tool that avoids focussing on the specifics of drinking. They demonstrated that the use of the CAGE questions preceded by an open-ended introduction, using a score of 2 or greater had a sensitivity of 95% in comparison with 32% when the questions were preceded by detailed analysis of alcohol consumption. The CAGE questionnaire has been used in this study in the middle position of the three questionnaires, so that it is not preceded by other questions relating to alcohol use. A score of 2 or higher has been used to determine the presence of an alcohol problem as validated in the original study by Mayfield, McLeod and Hall (1974). Other authors have considered the use of a lower score with Bush, Shaw, Cleary, Delbanco and Aronson (1987) for example determining sensitivity and specificity values of over 85% with a cut-off of one. This is considered in the results chapter.

### **7.7.3 Gambling EIGHT Screen**

The Gambling EIGHT screen was developed in 1999 (Sullivan, 1999) as a tool initially for primary health environments, particularly general practice, and again was developed to meet requirements for brevity, sensitivity, and simplicity both in terms of the language used and scoring. It is usually self-administered but a version was also developed for the purpose of phone counselling and this version has been used in this study. The EIGHT Screen, which is an acronym for Early Intervention Gambling Health Test also comprises eight questions which have been developed to cover emotional, cognitive and behavioural dimensions as well as a health related criterion. From 50 questions used in a range of screens and questions associated with problem gambling, 33 questions were tested in a number of research strategies to reduce to a final 8 questions (Sullivan, 1999).

The Eight Screen was designed as a screen to identify risk for problem gambling, rather than an assessment instrument or outcome measure. Notwithstanding, the Eight Screen has a high sensitivity to diagnosed pathological gambling as well as emerging gambling problems (Sullivan, 1999). It has been shown in preliminary studies in treatment and forensic settings to have high rates of sensitivity and specificity with respect to more lengthy, standardised screening instruments for problem and pathological gambling e.g. the South Oaks Gambling Screen (Potenza et al., 2002).

The Eight Screen can be administered in less than sixty seconds. The eight questions are answered either yes or no, with no multiple responses to be considered or scored. A positive on the screen is identified by a score of 4 or more. This cut-off was determined through a range of statistical and expert focus/Delphi processes that consulted 64 counsellors who were involved in treatment of problem gambling worldwide (Sullivan, 1999). There has been consideration given recently to the potential use of the Eight Screen with lower cut-offs in order to determine levels of problem gambling. {Schaffer, 1997 #46} describe three levels of problem gambling, with level 3 seen as the group with the most serious negative effects, level 2 being those who are experiencing a range of adverse reactions or consequences and comprise a diverse group and level 1 who are moving toward more disordered gambling. It has been proposed (Sullivan, 2003a) that focus groups could again identify cut-off points on the Eight Screen that may best match these levels. As there was a group in this study that scored from 1 to 3, this is discussed further in the results chapter.



## **7.8 Statistical methods**

The research assistant ensured all information was complete and undertook data entry of this information, in addition to collating paper records of the completed questionnaire and the accompanying clinical notes, for both those patients who agreed to participate in the survey and those who either were not asked or did not agree. Consultations with both supervisors and a biostatistician were arranged in regard to statistical methods throughout the research, and also on completion.

Analysis of the quantitative data was done by comparing proportions and the use of chi-squared test. The 95% confidence interval for the data was formed by multiplying the standard deviation by 1.96. Due to the exploratory nature of the study there is no data to perform a power calculation as that would require knowledge of the proportion of people who self harm who have a gambling problem. Following the literature review it has been concluded that this information is not available, and the reason for undertaking this study has been to gain an estimate of this proportion in order to inform subsequent studies.

# Chapter Eight

## Results

### 8.1 Introduction

The results will be presented in accordance with the aims of the study. In regard to the first aim, the incidence of gambling problems in the population who have presented to hospital following an episode of deliberate self-harm will be detailed in five sections: 1/ the total sample of patients who presented to North Shore hospital within the time-frame of the study; 2/ the patients screened for gambling problems, alcohol problems and for seriousness of the suicide attempt; 3/ the patients who were identified as having a gambling problem; 4/ the connections between patients who have gambling and alcohol problems; 5/ the comparison between the people who completed the study and those who did not.

The results for the total sample will include demographics of age, gender, ethnicity, living arrangements, also, presence of past psychiatric history, number of prior attempts, method related to current attempt, alcohol use related to the attempt, past and current contact with alcohol and other drug services, and outcome of the intervention of hospital staff as determined by the onward referral made, presented in table form. The results for the sample who agreed to participate in the study will also include: Gambling Eight screen scores; CAGE alcohol scores and Beck seriousness of suicide attempt score. The mode of gambling will also be noted for those who screened as positive on

the gambling screen. The results for the sample that screened as positive on the Gambling Eight screen will be described in a case series, incorporating significant aspects from the clinical notes recorded.

In relation to the second aim, the prevalence of problem gambling that has been identified in the study will be compared to currently available statistics for those with identified gambling problems that have presented for treatment in New Zealand. This will be considered in sub-groups of age, gender and ethnicity. The prevalence of problem gambling in this study will also be compared with general population study prevalence that has been identified in New Zealand.

The third aim investigates the effect of alcohol and gambling in relation to the seriousness of the suicide attempts in this study. The correlation between the Gambling Eight screen, the CAGE alcohol questionnaire and the Beck Suicide Intent scale will be detailed.

## **8.2 Total Sample**

A total of 203 episodes of attempted suicide or self-harm were assessed in the time frame of the study from June 9<sup>th</sup> 2003 to October 31<sup>st</sup> 2003, comprising 189 individual patients, 70 of whom subsequently completed the structured questionnaire.

### ***8.2.1 Demographics of total sample***

The following table highlights the demographics of all those who presented to North Shore hospital following an episode of deliberate self-harm during this time.

**Table 1: Demographics of all patients: non-participants, participants and those screening +ve (n=189)**

<b>Characteristics</b>	<b>All presenting (n=189)</b>	<b>Did not participate (n=119)</b>	<b>Participated (n=70)</b>	<b>Participated and Gambling Screen positive (n=12)</b>
<b>Age</b>	Mean 31.0 years (sd 12.1)	Mean 30.2 years (sd 11.5)	Mean 32.4 years (sd 13.0)	Mean 30.0 years (sd 6.5)
<b>Gender</b>				
Female	140 (74.1%)	95 (79.8%)	45 (64.3%)	7 (58.3%)
Male	49 (25.9%)	24 (20.2%)	25 (35.7%)	5 (41.7%)
<b>Ethnicity</b>				
Maori	22 (11.6%)	10 (8.4%)	12 (17.2 %)	5 (41.7%)
Pacific	3 (1.6%)	0	3 (4.3%)	1 (8.3%)
European	121 (64.0%)	81 (68.1%)	40 (57.1%)	5 (41.7%)
Chinese	3 (1.6%)	2 (1.7%)	1 (1.4%)	0
Korean	0	0	0	0
Indian	5 (2.6%)	3 (2.5%)	2 (2.9%)	0
Other	35 (18.6 %)	23 (19.3%)	12 (17.1%)	1 (8.3%)
<b>Living arrangements</b>				
Lives alone	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
With partner	36 (19.1%)	23 (19.3%)	13 (18.6%)	2 (16.7%)
With children	10 (5.3%)	7 (5.9%)	3 (4.3%)	0
Partner & children	32 (16.9%)	23 (19.3%)	9 (12.9%)	3 (25.1%)
With parents	42 (22.3%)	26 (21.8%)	16 (22.9%)	1 (8.3%)
With friends	14 (7.4%)	9 (7.6%)	5 (7.1%)	1 (8.3%)
Institution	5 (2.6%)	2 (1.7%)	3 (4.2 %)	1 (8.3%)
No fixed abode	4 (2.1%)	3 (2.5%)	1 (1.4%)	1 (8.3%)
Other	29 (15.3%)	18 (15.2%)	11 (15.7%)	1 (8.3%)
<b>Past psychiatric history</b>				
Yes	107 (56.6%)	65 (54.6%)	42 (60%)	7 (58.3%)
No	82 (43.4%)	54 (45.4%)	28 (40%)	5 (41.7%)
<b>Past attempts</b>				
None	110 (58.2%)	67 (56.3%)	43 (61.3 %)	6 (50.0%)
One	36 (19.0%)	23 (19.3%)	13 (18.6%)	4 (33.4 %)
Two	16 (8.5%)	9 (7.6%)	7 (10.0%)	1 (8.3%)
Three	6 (3.2%)	4 (3.4%)	2 (2.9%)	0
Four	6 (3.2%)	3 (2.5%)	3 (4.3%)	1 (8.3%)
Five or more	15 (7.9%)	13 (10.9%)	2 (2.9%)	0
<b>Method attempt</b>				
O/D	142 (75.2%)	90 (75.6%)	52 (74.3%)	11 (91.7%)
Cutting	15 (7.9%)	9 (7.6%)	6 (8.6%)	0
OD/Cutting	20 (10.6%)	13 (10.9%)	7 (10.0%)	1 (8.3%)
Other	12 (6.3%)	7 (5.9%)	5 (7.1%)	0

<b>Alcohol involved</b>				
Yes	47 (24.9%)	33 (27.7%)	14 (20.0%)	5 (41.7%)
If so, blood alcohol level	Mean 50.1 s.d. 19.5	Mean 58.0 s.d. 15	Mean 50.7 s.d. 16.8	Mean 39.4 s.d. 23.4
No	142 (75.1%)	86 (72.3%)	56 (80.0%)	7 (58.3%)
<b>Current AOD client</b>				
Yes	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
No	172 (91.0%)	111 (93.3%)	61 (87.1%)	10 (83.3%)
<b>Past AOD client</b>				
Yes	38 (20.1%)	21 (17.6%)	17 (24.3%)	5 (41.7%)
No	151 (79.9%)	98 (82.4%)	53 (75.7%)	7 (58.3%)
<b>Referral</b>				
Admission	21 (11.1%)	15 (12.6%)	6 (8.6%)	1 (8.3%)
Respite	6 (3.2%)	4 (3.4%)	2 (2.9%)	2 (16.7%)
CMHC	51 (27.0%)	32 (26.9%)	19 (27.1%)	4 (33.3%)
RADS	11 (5.8%)	5 (4.2%)	6 (8.6%)	2 (16.7%)
Other	100 (52.9%)	63 (52.9%)	37 (52.8%)	3 (25%)

### 8.3 Patients Consenting to the Study

A total of 70 patients consented to participate in the study, this comprising 37% of those who presented to hospital following an episode of deliberate self harm during the period of the study. Many patients were either not asked to participate, or were unable to for reasons such as ill-health, and this is considered further in the discussion chapter.

#### 8.3.1 Demographics of patients consenting to the study

The following table highlights the demographics of all those who agreed to participate in the study.

**Table 2: Demographics of participants in the study**

Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
<b>Age</b>	Mean 31.0 years (sd 12.1)	Mean 30.2 years (sd 11.5)	Mean 32.4 years (sd 13.0)	Mean 30.0 years (sd 6.5)
<b>Gender</b>				
Female	140 (74.1%)	95 (79.8%)	45 (64.3%)	7 (58.3%)
Male	49 (25.9%)	24 (20.2%)	25 (35.7%)	5 (41.7%)

<b>Ethnicity</b>				
Maori	22 (11.6%)	10 (8.4%)	12 (17.2%)	5 (41.7%)
Pacific	3 (1.6%)	0	3 (4.3%)	1 (8.3%)
European	121 (64.0%)	81 (68.1%)	40 (57.1%)	5 (41.7%)
Chinese	3 (1.6%)	2 (1.7%)	1 (1.4%)	0
Korean	0	0	0	0
Indian	5 (2.6%)	3 (2.5%)	2 (2.9%)	0
Other	35 (18.6%)	23 (19.3%)	12 (17.1%)	1 (8.3%)
<b>Living arrangements</b>				
Lives alone	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
With partner	36 (19.1%)	23 (19.3%)	13 (18.6%)	2 (16.7%)
With children	10 (5.3%)	7 (5.9%)	3 (4.3%)	0
Partner & children	32 (16.9%)	23 (19.3%)	9 (12.9%)	3 (25.1 %)
With parents	42 (22.3%)	26 (21.8%)	16 (22.9%)	1 (8.3%)
With friends	14 (7.4%)	9 (7.6%)	5 (7.1%)	1 (8.3%)
Institution	5 (2.6%)	2 (1.7%)	3 (4.2 %)	1 (8.3%)
No fixed abode	4 (2.1%)	3 (2.5%)	1 (1.4%)	1 (8.3%)
Other	29 (15.3%)	18 (15.2%)	11 (15.7%)	1 (8.3%)
<b>Past psychiatric history</b>				
Yes	107 (56.6%)	65 (54.6%)	42 (60%)	7 (58.3%)
No	82 (43.4%)	54 (45.4%)	28 (40%)	5 (41.7%)
<b>Past attempts</b>				
None	110 (58.2%)	67 (56.3%)	43 (61.3 %)	6 (50.0%)
One	36 (19.0%)	23 (19.3%)	13 (18.6%)	4 (33.4%)
Two	16 (8.5%)	9 (7.6%)	7 (10.0%)	1 (8.3%)
Three	6 (3.2%)	4 (3.4%)	2 (2.9%)	0
Four	6 (3.2%)	3 (2.5%)	3 (4.3%)	1 (8.3%)
Five or more	15 (7.9%)	13 (10.9%)	2 (2.9%)	0
<b>Method attempt</b>				
O/D	142 (75.2%)	90 (75.6%)	52 (74.3%)	11 (91.7%)
Cutting	15 (7.9%)	9 (7.6%)	6 (8.6%)	0
OD/Cutting	20 (10.6%)	13 (10.9%)	7 (10.0%)	1 (8.3%)
Other	12 (6.3%)	7 (5.9%)	5 (7.1%)	0
<b>Alcohol involved</b>				
Yes	47 (24.9%)	33 (27.7%)	14 (20.0%)	5 (41.7%)
If so, blood alcohol level	Mean 50.1 s.d. 19.5	Mean 58.0 s.d. 15	Mean 50.7 s.d. 16.8	Mean 39.4 s.d. 23.4
No	142 (75.1%)	86 (72.3%)	56 (80.0%)	7 (58.3%)
<b>Current AOD client</b>				
Yes	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
No	172 (91.0%)	111 (93.3%)	61 (87.1%)	10 (83.3%)
<b>Past AOD client</b>				
Yes	38 (20.1%)	21 (17.6%)	17 (24.3%)	5 (41.7%)
No	151 (79.9%)	98 (82.4%)	53 (75.7%)	7 (58.3%)

<b>Referral</b>				
Admission	21 (11.1%)	15 (12.6%)	6 (8.6%)	1 (8.3%)
Respite	6 (3.2%)	4 (3.4%)	2 (2.9%)	2 (16.7%)
CMHC	51 (27.0%)	32 (26.9%)	19 (27.1%)	4 (33.3%)
RADS	11 (5.8%)	5 (4.2%)	6 (8.6%)	2 (16.7%)
Other	100 (52.9%)	63 (52.9%)	37 (52.8%)	3 (25%)

### **8.3.2 Screen results for patients consenting to the study**

Screens were completed for all patients who consented to participate in the study which were the Beck Suicide Intent Scale, the CAGE alcohol screen and the Gambling Eight Screen. The following table highlights the scores for all those who participated in the study.

**Table 3: Screen scores for participants in the study**

<b>Characteristics</b>	<b>All presenting (n=189)</b>	<b>Did not participate (n=119)</b>	<b>Participated (n=70)</b>	<b>Participated and Gambling Screen positive (n=12)</b>
<b>Beck</b>				
Objective			Mean 4.3 s.d. 3.4 (range 0-16)	
Self			Mean 7.1 s.d. 4.2 (range 0-14)	
Total			Mean 11.2 sd. 7.0 CI 95% 1.6	Mean 10.25 sd. 6.0 CI 95% 3.4
<b>CAGE Score</b>				
0			38 (54.3 %)	3 (25%)
1			5 (7.1%)	0
2			6 (8.6%)	2 (16.7%)
3			7 (10%)	2 (16.7%)
4			14 (20%)	5 (41.6%)
<b>Eight Gambling Screen</b>				
Positive (4 or more)			12 (6.3% of 189; 17.1% of 70)	12
Negative (less than 4)			58	

## 8.4. Patients Identified with a Gambling Problem

### 8.4.1 Introduction

The patients who screened 4 or above on the Gambling Eight Screen comprised 12 in total, 17.1% of the total number of patients screened during the study (n=70). The 95% confidence interval in respect of the data was 9.2% to 28%. The range is asymmetric as a result of low numbers. The demographics will firstly be presented in a table and these 12 patients will also be described as a case series which incorporates significant aspects from the clinical notes recorded. Some personal details have been changed in order to ensure confidentiality.

There were a further 9 patients who scored in a range of 1-3 on the Gambling Eight Screen, which has been considered as significant in matching to earlier stage gambling problems (Sullivan, 2003a), but this will not be considered further in respect of this study.

### 8.4.2 Demographics of patients who participated and were gambling screen positive

The following table highlights the demographics of those who screened positive on the Gambling Eight screen during the study.

**Table 4: Demographics of participants of study gambling screen +ve**

Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
Age	Mean 31.0 years (sd 12.1)	Mean 30.2 years (sd 11.5)	Mean 32.4 years (sd 13.0)	Mean 30.0 years (sd 6.5)
<b>Gender</b>				
Female	140 (74.1%)	95 (79.8%)	45 (64.3%)	7 (58.3%)
Male	49 (25.9%)	24 (20.2%)	25 (35.7%)	5 (41.7%)



<b>Ethnicity</b>				
Maori	22 (11.6%)	10 (8.4%)	12 (17.2%)	5 (41.7%)
Pacific	3 (1.6%)	0	3 (4.3%)	1 (8.3%)
European	121 (64.0%)	81 (68.1%)	40 (57.1%)	5 (41.7%)
Chinese	3 (1.6%)	2 (1.7%)	1 (1.4%)	0
Korean	0	0	0	0
Indian	5 (2.6%)	3 (2.5%)	2 (2.9%)	0
Other	35 (18.6%)	23 (19.3%)	12 (17.1%)	1 (8.3%)
<b>Living arrangements</b>				
Lives alone	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
With partner	36 (19.1%)	23 (19.3%)	13 (18.6%)	2 (16.7%)
With children	10 (5.3%)	7 (5.9%)	3 (4.3%)	0
Partner & children	32 (16.9%)	23 (19.3%)	9 (12.9%)	3 (25.1%)
With parents	42 (22.3%)	26 (21.8%)	16 (22.9%)	1 (8.3%)
With friends	14 (7.4%)	9 (7.6%)	5 (7.1%)	1 (8.3%)
Institution	5 (2.6%)	2 (1.7%)	3 (4.2%)	1 (8.3%)
No fixed abode	4 (2.1%)	3 (2.5%)	1 (1.4%)	1 (8.3%)
Other	29 (15.3%)	18 (15.2%)	11 (15.7%)	1 (8.3%)
<b>Past psychiatric history</b>				
Yes	107 (56.6%)	65 (54.6%)	42 (60%)	7 (58.3%)
No	82 (43.4%)	54 (45.4%)	28 (40%)	5 (41.7%)
<b>Past attempts</b>				
None	110 (58.2%)	67 (56.3%)	43 (61.3%)	6 (50.0%)
One	36 (19.0%)	23 (19.3%)	13 (18.6%)	4 (33.4%)
Two	16 (8.5%)	9 (7.6%)	7 (10.0%)	1 (8.3%)
Three	6 (3.2%)	4 (3.4%)	2 (2.9%)	0
Four	6 (3.2%)	3 (2.5%)	3 (4.3%)	1 (8.3%)
Five or more	15 (7.9%)	13 (10.9%)	2 (2.9%)	0
<b>Method attempt</b>				
O/D	142 (75.2%)	90 (75.6%)	52 (74.3%)	11 (91.7%)
Cutting	15 (7.9%)	9 (7.6%)	6 (8.6%)	0
OD/Cutting	20 (10.6%)	13 (10.9%)	7 (10.0%)	1 (8.3%)
Other	12 (6.3%)	7 (5.9%)	5 (7.1%)	0
<b>Alcohol involved</b>				
Yes	47 (24.9%)	33 (27.7%)	14 (20.0%)	5 (41.7%)
If so, blood alcohol level	Mean 50.1 s.d. 19.5	Mean 58.0 s.d. 15	Mean 50.7 s.d. 16.8	Mean 39.4 s.d. 23.4
No	142 (75.1%)	86 (72.3%)	56 (80.0%)	7 (58.3%)
<b>Current AOD client</b>				
Yes	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
No	172 (91.0%)	111 (93.3%)	61 (87.1%)	10 (83.3%)
<b>Past AOD client</b>				
Yes	38 (20.1%)	21 (17.6%)	17 (24.3%)	5 (41.7%)
No	151 (79.9%)	98 (82.4%)	53 (75.7%)	7 (58.3%)

<b>Referral</b>				
Admission	21 (11.1%)	15 (12.6%)	6 (8.6%)	1 (8.3%)
Respite	6 (3.2%)	4 (3.4%)	2 (2.9%)	2 (16.7%)
CMHC	51 (27.0%)	32 (26.9%)	19 (27.1%)	4 (33.3%)
RADS	11 (5.8%)	5 (4.2%)	6 (8.6%)	2 (16.7%)
Other	100 (52.9%)	63 (52.9%)	37 (52.8 %)	3 (25%)

#### **8.4.3 Case Series: Patient one**

Patient one is a 38 year old male NZ European. He had a Gambling Eight screen score of 7, a CAGE score of 3, and a Beck total score of 2. His mode of gambling was exclusively gambling machines. He is living with friends, does not have a past psychiatric history, and has made no past attempts at suicide. This attempt was an overdose that involved consumption of alcohol, with an ETOH reading of 57. He has had both current and past contact with Alcohol and other Drug services, and was referred back to these services as the primary intervention, following on from this suicide attempt.

Patient one considered his suicide attempt to be “stupid”, and was the end result of recent stressors, including a marital separation, disagreement over child custody, job dissatisfaction and financial pressures, primarily as a result of his gambling.

#### **8.4.4 Patient two**

Patient two is a 27 year old female European, with a Gambling Eight screen score of 4, a CAGE score of 2 and a Beck total score of 10. Her preferred modes of gambling were noted as “scratchies” and lotto. She is currently living with her young child, has a past psychiatric history and has made one previous suicide attempt. This attempt involved a drug overdose and superficial cutting to the wrists, and also involved consumption of alcohol with an ETOH reading of 42. She has had no past or current contact with

Alcohol and other Drug services but has been seeing a counsellor through mental health services, and will continue with this.

Patient two describes herself as depressed, and this particular attempt, as well as the previous attempt was related to a fight with her parents, regarding custody issues. She does not consider life would be worth living if she does not have her child with her. The attempt was in the context of drinking over the course of an evening and she remembers little of the events on the night.

#### **8.4.5 Patient three**

Patient three is a 24 year old Maori female. Her Gambling Eight screen score was 7, her CAGE score was 4 and the total Beck score was 7. There were four modes of gambling noted: casino gambling machines, gambling machines outside the casino, “scratchies” and lotto. She lives with her partner, and has a past psychiatric history with one previous suicide attempt. Alcohol was not involved in this attempt which was by drug overdose, and she has had no past or current contact with Alcohol and other Drug services. She was referred to Community Mental Health services for follow up.

Patient three reported that she took an overdose following an argument with her partner. Her family do not approve of this relationship and she has little support. She says that she has always been depressed, and has had counselling in the past. She uses alcohol on a daily basis, even though had not been drinking at the time of the attempt, and she has used a large variety of drugs.

#### **8.4.6 Patient four**

Patient four is a 34 year old male NZ European. His Gambling Eight screen score was 8, his CAGE score 4, and the total Beck score was 2. His modes of gambling were

gambling machines both within and outside of the casino. He lives with his partner, has a past psychiatric history, but has made no prior suicide attempts. This attempt was by drug overdose and involved alcohol consumption with an ETOH of 33. He has had past contact with Alcohol and other Drug services, but was not in contact currently and has been referred back to these services for follow up.

Patient four considers that this episode was related to depression over the last month which in the first instance relates to his gambling problem, and secondly his relationship problems and the fact that he is in the process of separating, and lastly, problems relating to his alcohol use. He considers he has a major gambling problem with gambling machines and in the last week has lost a considerable amount of money, and is consequently in debt. He binge drinks on a monthly basis until he blacks out. There was a history of suicide within the family, but patient four did not consider this to be a serious attempt at suicide.

#### **8.4.7 Patient five**

Patient five is a 24 year old Pacific woman. She had a score of 8 on the Gambling Eight screen, a score of 0 on CAGE and a total Beck score of 15. Five modes of gambling were detailed: gambling machines inside and outside of the casino, “scratchies”, lotto and housie. She lives with family, and while she has no past psychiatric history has made one prior suicide attempt. This attempt was by drug overdose, but did not involve alcohol, and the patient has had no prior or current contact with Alcohol and other Drug services. She was referred to Community Mental health Services for follow up.

Patient five had had no plans for overdosing but had thoughts of not wanting to be around, and is anxious about her future. The suicide attempt was precipitated by an argument with her partner. Her primary shared activity with her partner is gambling;

they are having financial problems, and are unable to pay rent or accumulate any money for their future. Her partner reports that she becomes very distressed when she loses when she is gambling. They were both willing to attend counselling for problem gambling.

#### **8.4.8 Patient six**

Patient six is a 33 year old male NZ European. He had a score of 5 on the Gambling Eight screen, a score of 4 on CAGE and a total Beck score of 9. The modes of gambling that were noted were gambling machines outside of the casino, “scratchies”, lotto and housie. He is of no fixed abode currently, has a past psychiatric history, and has made two prior suicide attempts. This attempt was by drug overdose and involved consumption of alcohol, with an ETOH of 62. He is not in current contact with Alcohol and other Drug services but has had contact in the past. He was referred to Community Mental health Services for follow up, along with referral back to Alcohol services and referral for additional counselling, all of which he was in agreement with.

Patient six had called the CATT team days prior to this most recent attempt and also called again after he had taken an overdose. This was preceded by an afternoon of drinking and although the impact of this was minimised he later acknowledged that alcohol was probably a significant part of his problem. He was initially disappointed that he had not been successful and indicated that he should consider a more definite method. Following a period of observation on the ward patient six was clear that he no longer felt suicidal. The issue of gambling was not discussed.

#### **8.4.9 Patient seven**

Patient seven is a 28 year old Maori female. Her score on the Gambling Eight screen was 4, her score on CAGE 0, and her total Beck score was 17. Casino gambling

machines and lotto were the modes of gambling noted. She lives with her partner and children and has no past psychiatric history, or previous suicide attempts. This attempt was by drug overdose, did not involve alcohol, and she has had no current or prior contact with Alcohol and other drug services. She was referred to the CATT team for follow up.

Patient seven acknowledged that this was a planned suicide attempt, with a suicide note, and she was aware of the lethality of the overdose. It was a way of escaping from her problems, as she felt she was inadequate for her family. She was however glad to be alive, and states that she will not attempt suicide again. She was not considered to be clinically depressed. There were significant financial problems, and there appeared to be past unresolved and undisclosed issues.

#### ***8.4.10 Patient eight***

Patient eight is a 37 year old NZ European female. Her score on the Gambling Eight screen was 7, her CAGE score 4, and her total Beck score 17. Gambling machines outside of the casino and lotto were the modes of gambling noted. She lives alone, has a past psychiatric history and has made four previous suicide attempts. This attempt was by drug overdose. Alcohol was not involved in the attempt, although she is in current contact with Alcohol and other Drug services, and has had periods of contact in the past as well. She was on this occasion referred to Respite services as a means of follow up.

Patient eight denied feeling suicidal on assessment, and the reasons for the overdose were unclear. She acknowledges alcohol as a problem, and wants to give up, but considered there were many reasons why this was very difficult. Alcohol was not however involved in this attempt. Information primarily came from other sources, and her family have concerns about how she will manage various areas of her life while her

use of alcohol and drugs continues. Patient eight appeared to have few supports and little insight regarding her overdose, and consequently respite care was organised.

#### **8.4.11 Patient nine**

Patient nine is a 33 year old NZ European female. Her Gambling Eight screen score was 7, her CAGE score 4, and her Beck total score 20. Gambling machines outside of the casino were her exclusive mode of gambling. She lives with her parents, has a past psychiatric history and has made one previous suicide attempt. This attempt was by drug overdose, and alcohol was involved in the attempt, with an ETOH of 3. She is not in current contact with Alcohol and other Drug services but has had past contact with these services. The method of follow up on this occasion was with respite care.

Patient nine presented as upset about having to put her life back together after this suicide attempt, and was considered to be at risk of a further attempt, particularly as she was now aware of what a lethal dose of medication would be precisely. The attempt was as a result of a breakdown in relationships with both family and work, and considered that she would rather be dead than have to sort out these difficulties. Alcohol was acknowledged as a problem, and another person who provided further information noted that reduction of alcohol needed to be a priority. Her gambling score was not discussed.

#### **8.4.12 Patient ten**

Patient ten is a 16 year old Maori male. His score on the Gambling Eight screen was 6, his CAGE score 0 and the total beck score 6. The modes of gambling detailed were casino gambling machines, housie, lotto, “scratchies” and sports betting. He lives in an institution, does not have a past psychiatric history and has made no previous suicide attempts. His attempt was by drug overdose, alcohol was not involved in this attempt,

and he has had no past or current contact with Alcohol and other Drug services. The method of follow up regarding this attempt was by referral to a youth therapist.

Patient ten took an overdose impulsively and now considers that it was stupid. He is currently living in an institution and does not feel that he gets on well with others, a fact which appears to have precipitated the attempt. He was considered to have good insight, with good supports already in place that he was using appropriately, and was at no further risk.

#### ***8.4.13 Patient eleven***

Patient eleven is a 26 year old Maori female. Her Gambling Eight screen score was 7, her CAGE score 2 and her total Beck score 6. The single mode of gambling noted was lotto. She lives with her partner and children, does not have a past psychiatric history and has made no previous suicide attempts. This attempt was by drug overdose and did not involve the use of alcohol. She has had no contact currently or in the past with Alcohol and other Drug services. She was referred to her GP for follow up.

Patient eleven appeared very clear that she did not want to die, and that she had not intended to kill herself when she took the overdose. She had taken it impulsively following an argument with her partner, and subsequently felt guilty and regretful. She describes herself as being somewhat depressed over the last month, particularly in regard to her relationship. She has supports in her life, and was discharged to the care of her GP in order to discuss the possibility of antidepressants. Patient eleven was also given information about the Gambling Problem Helpline.



#### **8.4.14 Patient twelve**

Patient twelve is a 35 year old Maori male. His Gambling Eight screen score was 7, his CAGE score was 3, and his total Beck score 12. The modes of gambling noted were: gambling machines both within and outside of the casino, casino tables, “scratchies”, lotto and horses/dog betting. He lives with his partner and children. He has a past psychiatric history but has made no previous suicide attempts. This attempt was by drug overdose, did not involve alcohol and he has had no current or previous contact with Alcohol and other Drug Services. He was admitted to hospital as a result of this suicide attempt.

Patient twelve has a history of alcohol abuse, gambling addiction, and intermittent drug abuse. This attempt was precipitated by open knowledge of his stealing from his employer in order to continue his gambling. On presentation to hospital, there were concerns regarding other psychiatric symptoms and he was consequently admitted to hospital initially in order for him to be monitored, and subsequently as he was unable to be discharged safely. He was unable to return to his home as they had been evicted because he had spent the rent money. Concerns remained regarding his psychotic symptoms and admission to an appropriate mental health unit was facilitated.

### **8.5 Gambling and Alcohol Problems**

#### **8.5.1 Patients who participated in the study with positive CAGE screen**

Of the 70 patients who consented to the study, 26 had a CAGE score of 2 or greater, which indicates an alcohol problem, comprising 37.1% of this sample. In addition to this, a further 5 had a score of 1, which was indicated previously as having high

specificity and sensitivity (Bush et al., 1987). The following table highlights CAGE results across all scores for those who participated in the study.

**Table 5: CAGE scores for patients who participated in the study**

	CAGE 0	CAGE 1	CAGE 2	CAGE 3	CAGE 4
All (n=70)	38 (54.3%)	5 (7.1%)	6 (8.6%)	7 (10%)	14 (20%)
Negative EIGHT Screen (n=58)	35 (60.4%)	5 (8.6%)	4 (6.9%)	5 (8.6%)	9 (15.5%)
Positive EIGHT Screen (n=12)	3 (25%)	0	2 (16.7%)	2 (16.7%)	5 (41.6%)

**8.5.2 Patients identified as gambling screen positive with positive CAGE score**

Of the 12 patients with a positive gambling Eight screen score, 9 had a positive CAGE score of 2 and above, comprising 75%, while the remaining 3 had a 0 CAGE score. The following table highlights the CAGE scores across all scores for those patients who had a positive gambling eight screen score in the study.

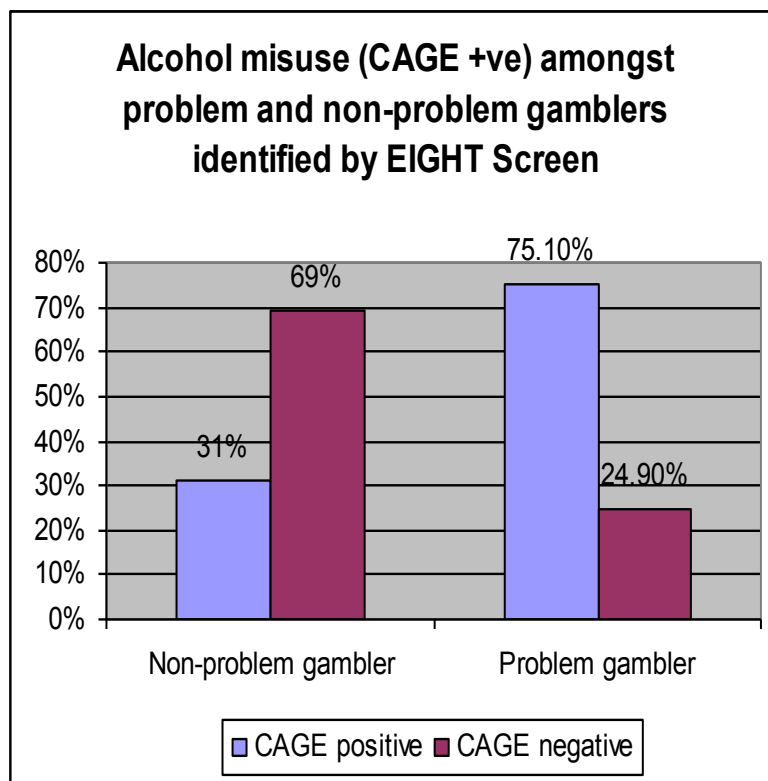
**Table 6: CAGE scores for patients with +ve Gambling Eights screen score**

	CAGE 0	CAGE 1	CAGE 2	CAGE 3	CAGE 4
All (n=70)	38 (54.3%)	5 (7.1%)	6 (8.6%)	7 (10%)	14 (20%)
Negative EIGHT Screen (n=58)	35 (60.4%)	5 (8.6%)	4 (6.9%)	5 (8.6%)	9 (15.5%)
Positive EIGHT Screen (n=12)	3 (25%)	0	2 (16.7%)	2 (16.7%)	5 (41.6%)

The following graph further demonstrates the comparison of positive CAGE scores for patients who were identified by the Eight screen as having a gambling problem and

those that were not. As shown, it highlights the high correlation of alcohol misuse with problem gambling determined in this study. This demonstrates that there was a strong evidence of an effect ( $p=.01$ ) of the CAGE score on whether or not a person in the study was identified as a problem gambler, which was demonstrated statistically using logistic regression.

**Figure 1: Alcohol misuse amongst problem and non-problem gamblers identified by Eight screen**



## 8.6 Comparison between those who participated in the study and those who did not

### 8.6.1 Demographics

The following table highlights the comparisons in demographics between those patients who agreed to participate in the study and those who did not, during the time-frame of the study. A t test could not show a difference in regard to age ( $p=.25$ ). There was evidence of difference in gender using a chi-square test between the participants and the non-participants ( $p=.02$ ). Ethnicity also showed evidence of a difference between participants and non-participants using a chi-square test ( $p=.04$ ). With the use of chi-square a difference could not be shown in regard to: living arrangements ( $p=.77$ ), past history ( $p=.47$ ), method ( $p=.98$ ), alcohol involved ( $p=.24$ ), whether they were a current client of Alcohol and other Drug services ( $p=.15$ ), or a past client of Alcohol and other drug services ( $p=.27$ ) or where the onward referral of the patient was as a result of the attempt ( $p=.71$ ). The Mann Whitney U test was used to determine whether a difference could be observed in respect of past suicide attempts but this also could not show a difference ( $p=.35$ ).

**Table 7: Comparison of patients who agreed to participate in study and those who did not**

Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
Age	Mean 31.0 years (sd 12.1)	Mean 30.2 years (sd 11.5)	Mean 32.4 years (sd 13.0)	Mean 30.0 years (sd 6.5)
<b>Gender</b>				
Female	140 (74.1%)	95 (79.8%)	45 (64.3%)	7 (58.3%)
Male	49 (25.9%)	24 (20.2%)	25 (35.7%)	5 (41.7%)

<b>Ethnicity</b>				
Maori	22 (11.6%)	10 (8.4%)	12 (17.2%)	5 (41.7%)
Pacific	3 (1.6%)	0	3 (4.3%)	1 (8.3%)
European	121 (64.0%)	81 (68.1%)	40 (57.1%)	5 (41.7%)
Chinese	3 (1.6%)	2 (1.7%)	1 (1.4%)	0
Korean	0	0	0	0
Indian	5 (2.6%)	3 (2.5%)	2 (2.9%)	0
Other	35 (18.6%)	23 (19.3%)	12 (17.1%)	1 (8.3%)
<b>Living arrangements</b>				
Lives alone	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
With partner	36 (19.1 %)	23 (19.3%)	13 (18.6%)	2 (16.7%)
With children	10 (5.3%)	7 (5.9%)	3 (4.3%)	0
Partner & children	32 (16.9%)	23 (19.3%)	9 (12.9%)	3 (25.1%)
With parents	42 (22.3 %)	26 (21.8%)	16 (22.9%)	1 (8.3%)
With friends	14 (7.4%)	9 (7.6%)	5 (7.1%)	1 (8.3%)
Institution	5 (2.6%)	2 (1.7%)	3 (4.2 %)	1 (8.3%)
No fixed abode	4 (2.1%)	3 (2.5%)	1 (1.4%)	1 (8.3%)
Other	29 (15.3%)	18 (15.2 %)	11 (15.7%)	1 (8.3%)
<b>Past psychiatric history</b>				
Yes	107 (56.6%)	65 (54.6%)	42 (60%)	7 (58.3%)
No	82 (43.4%)	54 (45.4%)	28 (40%)	5 (41.7%)
<b>Past attempts</b>				
None	110 (58.2%)	67 (56.3%)	43 (61.3%)	6 (50.0%)
One	36 (19.0%)	23 (19.3%)	13 (18.6%)	4 (33.4%)
Two	16 (8.5%)	9 (7.6%)	7 (10.0%)	1 (8.3%)
Three	6 (3.2%)	4 (3.4%)	2 (2.9%)	0
Four	6 (3.2%)	3 (2.5%)	3 (4.3%)	1 (8.3%)
Five or more	15 (7.9%)	13 (10.9%)	2 (2.9%)	0
<b>Method attempt</b>				
O/D	142 (75.2 %)	90 (75.6%)	52 (74.3%)	11 (91.7%)
Cutting	15 (7.9%)	9 (7.6%)	6 (8.6%)	0
OD/Cutting	20 (10.6%)	13 (10.9%)	7 (10.0%)	1 (8.3%)
Other	12 (6.3%)	7 (5.9%)	5 (7.1%)	0
<b>Alcohol involved</b>				
Yes	47 (24.9%)	33 (27.7%)	14 (20.0%)	5 (41.7%)
If so, blood alcohol level	Mean 50.1 s.d. 19.5	Mean 58.0 s.d. 15	Mean 50.7 s.d. 16.8	Mean 39.4 s.d. 23.4
No	142 (75.1%)	86 (72.3%)	56 (80.0%)	7 (58.3%)
<b>Current AOD client</b>				
Yes	17 (9.0%)	8 (6.7%)	9 (12.9%)	2 (16.7%)
No	172 (91.0%)	111 (93.3%)	61 (87.1%)	10 (83.3%)
<b>Past AOD client</b>				
Yes	38 (20.1%)	21 (17.6%)	17 (24.3%)	5 (41.7%)
No	151 (79.9%)	98 (82.4%)	53 (75.7%)	7 (58.3%)

Referral				
Admission	21 (11.1%)	15 (12.6%)	6 (8.6%)	1 (8.3%)
Respite	6 (3.2%)	4 (3.4%)	2 (2.9%)	2 (16.7%)
CMHC	51 (27.0%)	32 (26.9%)	19 (27.1%)	4 (33.3%)
RADS	11 (5.8%)	5 (4.2%)	6 (8.6%)	2 (16.7%)
Other	100 (52.9%)	63 (52.9%)	37 (52.8%)	3 (25%)

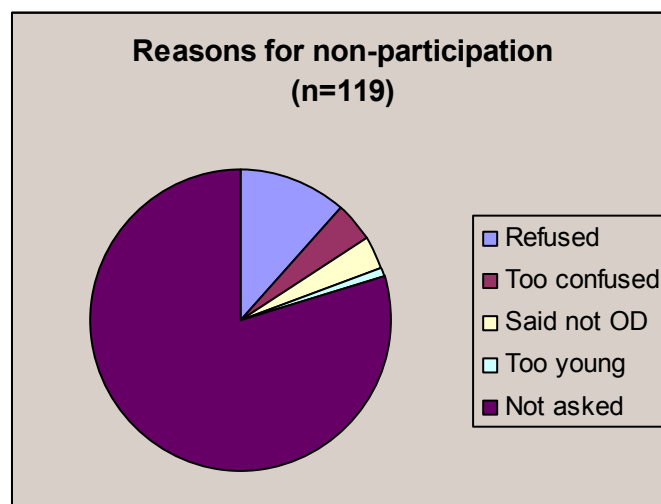
### 8.6.2 Non-participants' reasons for exclusion from the study

Many patients were either not asked to participate or were unable to for reasons such as ill-health. The following table and figure details the reasons for non-participation, and indicates that the refusal rate was as low as 11.8%. There were 33 clinicians involved in assessing patients over the period of the study, 19 of whom invited patients to participate. Of these, 15 in total were involved with the administering of the questionnaire.

**Table 8: Non-participants' reasons for exclusion from the study**

Refused	Too confused to ask	Denied intention to harm self	Too young	Not asked	Total
14 (11.8%)	5 (4.2%)	4 (3.4%)	1 (0.8%)	95 (79.8%)	119 (100%)

**Figure 2: Reasons for patients' non-participation in study (n=119)**



## 8.7 Prevalence of Problem Gambling in the Study Compared to Currently Available Problem Gambling Statistics

The most recent data in relation to problem gambling in New Zealand is Problem Gambling in New Zealand National Statistics 2002 (Paton-Simpson et al., 2003). This data consists of demographic information from all problem gambling treatment services funded by the Problem Gambling Committee, the conduit by which all problem gambling services are currently funded until July 2004, when this responsibility will be taken over by the Ministry of Health. The services consist of one nationwide telephone helpline, in which individuals only ever receive phone counselling or are referred to face to face personal counselling services, and a range of counselling services nationally, who receive referrals from the Gambling Problem Helpline as well as many other referral sources. This data, which has been divided into Helpline services and personal counselling services, will be used to compare to demographic information obtained in this study in sub-groups of age, gender and ethnicity.

### 8.7.1 Age

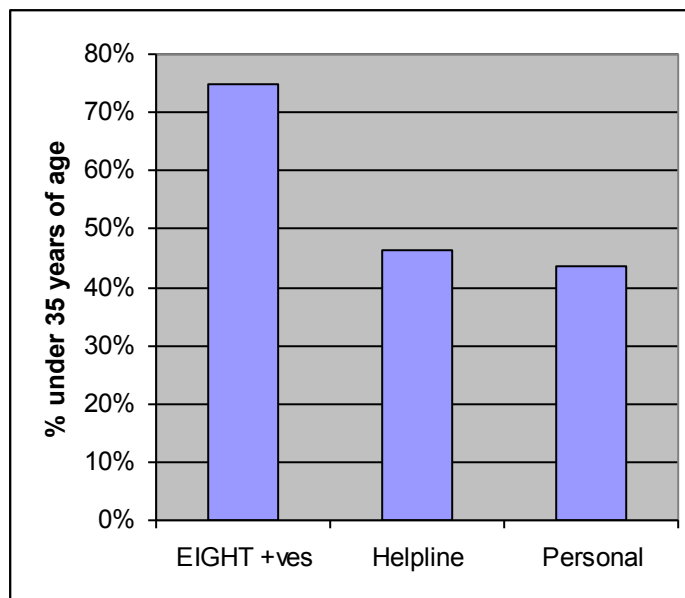
The age range across all groups in this study, including those who did not participate is shown as a mean in table 9. There was no statistical difference shown between participants and non-participants using a t test ( $p = .25$ ).

**Table 9: Mean age across all groups in the study**

Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
Age	Mean 31.0 years (sd 12.1)	Mean 30.2 years (sd 11.5)	Mean 32.4 years (sd 13.0)	Mean 30.0 years (sd 6.5)

As a comparison, the summary statistics from the Problem Gambling Committee (Paton-Simpson et al., 2003) reported 46.3% of Helpline and 43.6% of personal clients were less than 35 years of age. Figure 3 shows the comparison between problem gamblers contacting the Gambling Problem Helpline, those presenting for personal counselling at specialist problem gambling services and those who were identified as positive on the Gambling Eight screen in this study. The graph demonstrates that a higher proportion of those identified in this study as problem gamblers were less than 35 years of age. While the population presenting to specialist problem gambling services is different from those presenting following self-harm, it is noted that those who scored as positive on the Gambling Eight screen within the study are younger and that this is a different group in terms of age from those presenting to problem gambling treatment services.

**Figure 3: Proportion of identified problem gamblers under 35 years of age, for study (n=12), Helpline in 2002 (n=2133) and personal specialist problem gambling counselling (n=1731)**





### 8.7.2 Gender

The gender distribution across all groups in this study, including those who did not participate is shown (table 10), along with the gender distribution of the problem gambling treatment population in 2002 (table 11). A chi-square test showed evidence of a statistical difference of sex between the participants and the non-participants ( $p=.02$ ), with a lesser number of females participating in the study than in the total sample.

**Table 10: Gender distribution across all groups in the study**

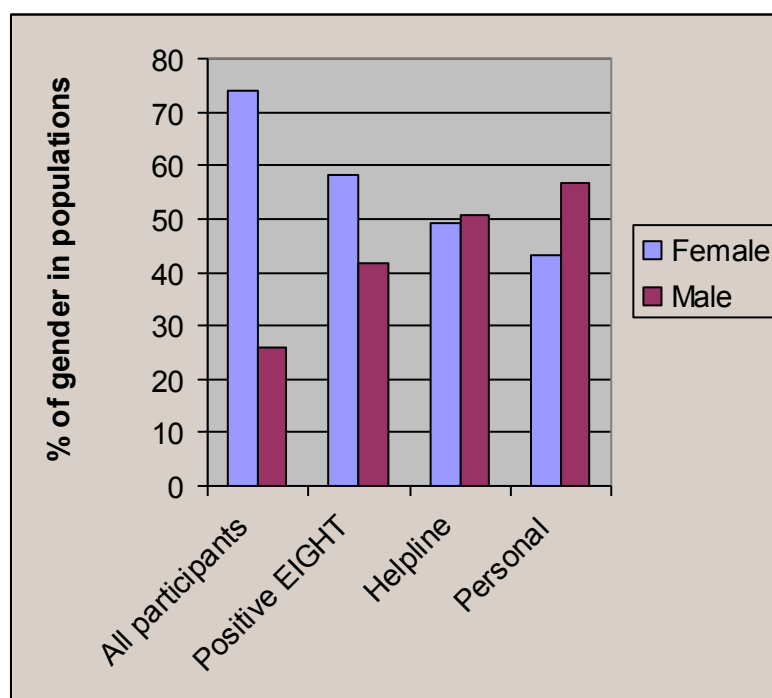
Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
<b>Gender</b>				
Female	140 (74.1%)	95 (79.8%)	45 (64.3%)	7 (58.3%)
Male	49 (25.9%)	24 (20.2%)	25 (35.7%)	5 (41.7%)

**Table 11: Gender distribution of problem gambling treatment population (from general population) in 2002**

	Telephone helpline clients	Personal clients
Female	49.2%	43.1%
Male	50.8%	56.9%
N=	2,902	1,967

The number of females shown to have gambling problems both within this study and within the general gambling treatment population was lower than the number of females presenting following an episode of deliberate self-harm, as shown in Figure 4. However, while these are different populations, the proportion of males that participated in the study and were identified with gambling problems was higher than the females and matches the gender distribution figures for the specialist problem gambling services more closely.

**Figure 4: Percentage by gender in populations of all participants (n=70), those positive on Eight screen (n=12), Helpline in 2002 (n=2902), personal specialist problem gambling counselling (n=1967)**



### 8.7.3 Ethnicity

The range of ethnicities across all groups in this study, including those who did not participate, is shown in table 12. There was evidence of a statistical difference shown using chi-square between participants and non-participants ( $p=.04$ )

**Table 12: Distribution of ethnicity across all groups in study**

Characteristics	All presenting (n=189)	Did not participate (n=119)	Participated (n=70)	Participated and Gambling Screen positive (n=12)
<b>Ethnicity</b>				
Maori	22 (11.6%)	10 (8.4%)	12 (17.1%)	5 (41.7%)
Pacific	3 (1.6%)	0	3 (4.3%)	1 (8.3%)
European	121 (64.0%)	81 (68.1%)	40 (57.1%)	5 (41.7%)
Chinese	3 (1.6%)	2 (1.7%)	1 (1.4%)	0
Korean	0	0	0	0
Indian	5 (2.6%)	3 (2.5%)	2 (2.9%)	0
Other	35 (18.5%)	23 (19.3%)	12 (17.1%)	1 (8.3%)

The distribution of ethnicities for all who participated in the study is shown in table 13, along with the range of ethnicities of the problem gambling treatment population in 2002 in table 14.

**Table 13: Distribution of ethnicity of all participants in study (n=70), participants -ve on Eight screen (n=58) and participants +ve on Eight screen (n=12)**

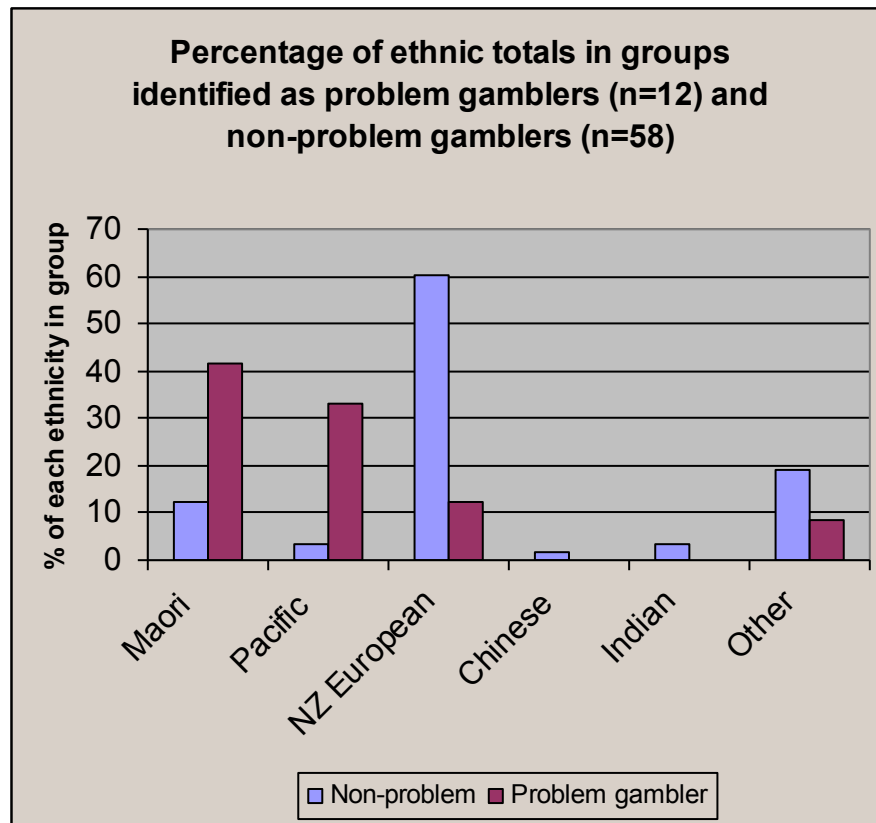
Ethnicity	All participants n=70	Participants who are negative on EIGHT Screen (n=58)	Positive on EIGHT Screen (n=12)	Positive on EIGHT Screen as a proportion (%) of total ethnic group
Maori	12 (17.1%)	7 (12.1%)	5 (41.7%)	5/12 (41.7%)
Pacific	3 (4.3%)	2 (3.4%)	1 (8.3%)	1/3 (33.3%)
NZ European	40 (57.1%)	35 (60.3%)	5 (41.7%)	5/40 (12.5%)
Chinese	1 (1.4%)	1 (1.7%)	0	0
Korean	0	0	0	0
Indian	2 (2.9%)	2 (3.4%)	0	0
Other	12 (17.1%)	11 (19.0%)	1 (8.3%)	1/12 (8.3%)
Total	70 (99.9%)	58 (99.9%)	12 (100%)	

**Table 14: Ethnicity of problem gambling treatment population (from general population) in 2002**

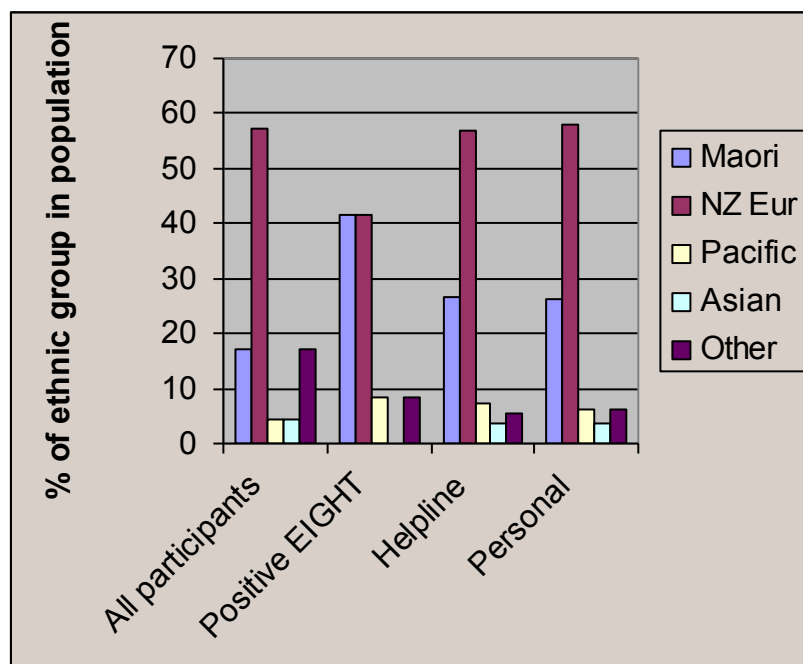
	Telephone helpline clients		Personal counselling		NZ pop 18+
	N	%	N	%	%
NZ Eur	1,342	56.9%	1,031	57.8%	78.4%
Maori	628	26.6%	466	26.1%	10.9%
Pacific	173	7.3%	109	6.1%	4.7%
Asian	87	3.7%	64	3.6%	6.1%
Other	128	5.4%	113	6.3%	
Total	2,358	100%	1,783	100%	

There was a difference shown in relation to ethnicity within the study shown in figure 5 below, which highlights Maori and Pacific people within the group identified as problem gamblers. Statistically a possible indication of an effect of ethnicity was shown ( $p=.09$ ) using logistic regression. The differences were highlighted further in the comparison between the patients who scored as positive on the Eight screen and those within the general gambling treatment population as demonstrated in Figure 6.

**Figure 5: Percentage of ethnic totals in groups identified as problem gamblers and non-problem gamblers in the study**



**Figure 6: Comparison of percentages of ethnic groups in study participants (n=70), participants +ve on the Eight screen (n=12), Helpline in 2002 (n=2358) and personal specialist problem gambling counselling (n=1783)**



#### **8.7.4 General population study prevalence**

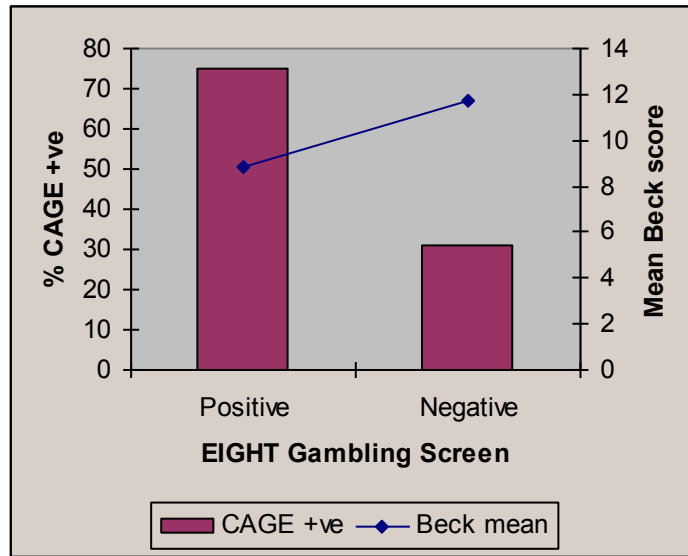
In terms of general population study prevalence, the prevalence rate of 17.1% identified in this study compares with a rate of 1.3% of pathological and problem gamblers determined in the most recent problem gambling prevalence study in New Zealand (Abbott & Volberg, 2000). This comparison is considered further in the discussion.

#### **8.8 The Effect of Alcohol and Gambling in Relation to the Seriousness of Suicide Attempts in the Study**

The following graph (Figure 7) illustrates the correlation between the Gambling Eight screen, the CAGE alcohol questionnaire and the Beck Suicide Intent scale. As indicated previously there was a strong evidence of an effect ( $p=.01$ ) of the CAGE score on whether not a person in the study was identified as a problem gambler, which was demonstrated statistically using logistic regression.

The mean Beck Suicide Intent Scale score for those who were positive on the Gambling Eight screen was 8.8 while the mean score for those who were negative on the Gambling Eight screen was 11.6.

**Figure 7: Connection between the Gambling Eight screen, the CAGE alcohol screen and the Beck Suicide Intent Scale**



# Chapter Nine

## Discussion and Recommendations

### 9.1. Introduction

This is an exploratory study to discover any connection between attempted suicide, problem gambling and alcohol in a consecutive series of patients who have presented to hospital after deliberately harming themselves. The principal findings of the study will be presented in relation to the aims of the study, and the strengths and weaknesses of the study will be considered. The results will also be discussed in relation to other research findings, and the strengths and weaknesses in relation to other studies. The implications for both future research and for best practice will be considered.

### 9.2 Principal Findings

#### 9.2.1 *Aim one*

Aim one set out to estimate the incidence of problem gambling in a population who have presented to hospital following an episode of deliberate self-harm. The results showed the prevalence of problem gambling to be high within this population. Of the 70 patients who participated in the study, 17.1% were identified as having a gambling problem. The 95% confidence interval in relation to the data set was 9.2% to 28%.

### **9.2.2 Aim two**

Aim Two was to compare the prevalence of problem gambling identified in the study to the general population using currently available statistics in sub-groups of age, gender and ethnicity. The prevalence data identified in this study was compared to the most recently available statistics for all problem gambling treatment providers in New Zealand, (Paton-Simpson et al., 2003). The services that contribute data to this report consist of both a nationwide telephone helpline and face to face personal specialist problem gambling counselling services throughout New Zealand.

While the population presenting to specialist problem gambling services is different from those presenting following self-harm, a number of factors were noted in respect of the sub-groups of age, gender and ethnicity. Firstly, those who scored as positive on the Gambling Eight screen within the study are younger and a different group in terms of age from those presenting to problem gambling treatment services. Secondly, while there was a greater number of females in the total sample in the study, which was demonstrated to be of statistical significance using a chi-square test ( $p=.02$ ), the proportion of males who participated in the study and were identified with gambling problems was higher than the females and matches the gender distribution figures for the specialist problem gambling services more closely. Thirdly, not only was an effect of ethnicity shown ( $p=.09$ ) using logistic regression, between the identified problem gamblers in the study ( $n=12$ ) and those who participated and were not identified with a gambling problem ( $n=58$ ) but the differences were highlighted further in the comparison between the patients who scored as positive on the Eight screen and those within the general gambling treatment population. These most significant differences highlighted the high proportion of Maori and Pacific peoples in all groups who were



identified as problem gamblers, within the study and in the comparison specialist problem gambling services.

In terms of general population study prevalence, the prevalence rate of 17.1% identified in this study compares with a rate of 1.3% of pathological and problem gamblers determined in the most recent problem gambling prevalence study in New Zealand (Abbott & Volberg, 2000). This comparison and further detail of the prevalence study in relation to demographic factors is considered further in this chapter.

### **9.2.3 Aim three**

Aim Three set out to investigate the effect of alcohol and gambling on the seriousness of suicide attempts. Of the participants in the study who were identified as problem gamblers, 75% were identified with an alcohol problem using the CAGE alcohol screen. There was strong statistical evidence of an effect of the CAGE score on whether or not a patient was identified as a problem gambler by the Gambling Eight screen ( $p=.01$ ), demonstrated using logistic regression.

There was no evidence to suggest that there was a relationship between the identification of a gambling problem and the seriousness of the suicide attempt as identified by the Beck Suicide Intent Scale. The mean Beck Suicide Intent scale score for those in the study who were positive on the Gambling Eight screen was 8.8, while the mean score for those in the study who were negative on the Gambling Eight screen was 11.6, although there was no statistical difference identified in respect of these figures.

### **9.3 Strengths of the Study**

#### ***9.3.1 First international study of problem gambling from self-harm perspective***

The primary strength of this exploratory study is that a literature search has determined that it is the first study internationally to consider the relationship between problem gambling and suicide from the perspective of those who have presented to hospital following an episode of self-harm. It is useful for the development of both problem gambling and deliberate self-harm services to have this first study undertaken from the perspective of self-harm in a New Zealand context, rather than the need to determine first what may be applicable from an international study, as is often necessary. The study already identifies such issues as the significance of ethnicity in relation to the study, which is of particular relevance for New Zealand.

#### ***9.3.2 Comprehensive assessment of participants***

A further strength of this study is that those who participated had a comprehensive assessment and that the participants are well described. This is the case not only for those who participated and were identified as problem gamblers by the Gambling Eight screen, as is detailed in the results chapter, but also for those who participated and were not identified as problem gamblers and for those who did not or could not participate. This has allowed for a very thorough comparison of the total sample, not only by statistical analysis but also by considering cases on an individual basis.

#### ***9.3.3 Differences between participants and non-participants in the study investigated***

The similarity in demographics between those who agreed to participate in the study and those who did not, strongly indicates that the non-participants are not a significantly different group that are likely to have fewer gambling problems and that

this somehow contributed to their decision to not participate in the study. The results demonstrated that statistically there was evidence of difference in gender using a chi-square test between the participants and the non-participants ( $p=.02$ ) and ethnicity also showed evidence of a difference between participants and non-participants using a chi-square test ( $p=.04$ ). A t test could not show a difference in regard to age ( $p=.25$ ), and with the use of chi-square a difference could not be shown in regard to: living arrangements ( $p=.77$ ), past history ( $p=.47$ ), method ( $p=.98$ ), alcohol involved ( $p=.24$ ), whether they were a current client of Alcohol and other Drug services ( $p=.15$ ), or a past client of Alcohol and other Drug services ( $p=.27$ ) or where the onward referral of the patient was to, as a result of the attempt ( $p=.71$ ). The Mann Whitney U test was used to determine whether a difference could be observed in respect of past suicide attempts but this also could not show a difference ( $p=.35$ ).

While a difference was demonstrated in gender and ethnicity, there was in the total sample an over-representation of females and an over-representation of NZ Europeans. Males were more likely to participate in the study, but there does not appear to be a considerable difference in terms of whether they were more likely to be identified with a gambling problem. Therefore, if a greater number of the females in the total sample had been screened it would seem possible that a proportion of these would score as positive on the Gambling Eight screen.

Maori and Pacific people were also more likely to participate in the study but were also more likely to be identified with a gambling problem. However, almost half of the NZ European population of the participants of the study were identified with a gambling problem when they were screened, so there is therefore a very large part of the total sample who were not screened, a proportion of whom would potentially have been

identified with a gambling problem if they had participated. Given that the decision as to whether or not to participate was primarily the decision of the clinician who was assessing the patient rather than the patient themselves, then this can not be seen as a

self-selecting group who chose not to participate because they were aware of their own gambling problems.

history and there have been no prior suicide attempts. This attempt involved carbon monoxide poisoning, and

also involved alcohol and other drug use. She has had no past or current contact with Alcohol and other drug

services and was referred to the present study by the local health services for this group. Identifiable details have

been altered for the purpose of maintaining confidentiality.

Information was primarily provided by a source other than the patient herself, and a history of alcohol, other drug

and gambling problems was described. The attempt was precipitated by an argument with family, but she was

described as behaving out of character recently, moving regularly, and has sold all her furniture and accumulated

large debts. While it was unclear as to whether the patient had wished to die or not, it was apparent that her

current problems with alcohol, drugs and gambling contributed significantly to this episode of deliberate self-

harm

## **9.4 Weaknesses of the Study**

### **9.4.1. Low participation rate of total sample**

The most significant weakness of the study is the large number in the total sample who did not complete a Gambling Eight screen, CAGE alcohol screen, or the Beck Suicide Intent Scale screen. It was recognised early on in the study however that the rate of participation was low, and an accurate record was kept of the reasons why people did not participate, which was detailed in the results. The primary reason was that the clinician involved in the assessment chose not to ask the patient whether they wished to participate (79.8%), and their reason for this is unknown. Other reasons for not asking have been stated, such as: patient too confused to ask (4.2%), denied intention to self-harm (3.4%), and too young (0.8%), although this was clearly the individual preference of the clinician as a range of people who participated in the study were under 16. It is significant to note however that the refusal rate was as low as 11.8%. While this was potentially a major weakness in the study, the way that this has been managed and the fact that the participant and the non-participant groups have been shown to not be significantly different has been addressed further in strengths of the study.

### **9.4.2 Small sample of identified problem gamblers**

The number of patients identified by the Gambling Eight screen was twelve in total. This has meant that analysing the data in terms of the inter-relationship of some of the variables has not been possible because the sample size is too small, e.g. investigating an interaction of the CAGE alcohol screen with ethnicity. The data has indicated some possible connections which may be potentially of some importance but it has not been possible to analyse these statistically.

#### **9.4.3 Number of assessing clinicians participating in the study**

The assessment of all patients within the time-frame of the study, and the decision as to whether to invite patients to participate in the study was made by a pool of 33 different clinicians. These clinicians were psychiatric specialists and consisted of Psychiatrists, Psychiatric Registrars and Psychiatric Nurse Consultants.

As indicated in the results, of the 33 participating clinicians, 19 had invited patients to participate, and only 15 of these clinicians had participated in the administering of the questionnaires. While it can not be known in this study as to why so many of the patients were not invited to participate, it was observed by the research assistant, that on the occasions when patients were assessed by an on-call clinician, then it was unlikely that they became participants in the study. It could be perhaps assumed that this was in relation to both the time available and the out of hour's nature of the assessment, but neither of these factors is related to whether or not the patient may have a gambling problem.

#### **9.4.4 Collection of modes of gambling**

The participants in the study who were identified as problem gamblers were asked to complete a section detailing what forms of gambling they participated in. This section highlighted that the majority of those who had identified gambling problems participated in many forms of gambling. This information was useful in that it would suggest that these patients in the study were largely a different group than those who present to specialist problem gambling services, where clinical experience would suggest that those with gambling problems usually have one favoured mode of gambling. As Fisher and Griffiths (1995) have highlighted, while different forms of gambling have the potential of becoming problematic to varying degrees, research has

suggested that gambling machines, particularly the modern video gambling machines, are now the leading form of gambling by problem gamblers in several countries.

Research in New Zealand highlighted in an earlier chapter that gambling machines account for 86.2% of the primary mode of gambling for those attending face to face specialist problem gambling treatment services (Paton-Simpson et al., 2003).

However, because the questionnaire in the study did not ask patients to detail which is their preferred mode of gambling, it is now not possible to know whether some of the modes of gambling identified were played infrequently, and that there was in fact a particular preferred mode. It is therefore not possible in this study to determine what modes of gambling were associated with the identified gambling problems.

## **9.5 Strengths and Weaknesses of the Study in Relation to other Studies**

### ***9.5.1 Introduction***

The primary strength of the study in relation to others is the same strength as within the study itself, that being, it is the first study internationally to consider the relationship between problem gambling and suicide from the perspective of those who have presented to hospital following an episode of self-harm. As with identifying the strengths of this study in relation to other studies, identifying the weaknesses is also difficult, as there have been no other similar studies undertaken. The weaknesses therefore, are previously mentioned: low participation rate of the total sample, the large number of clinicians involved with assessing patients for the study, and the fact that the preferred mode of gambling was not identified. There is the potential for all these factors to be addressed in further studies.

Although comparison is difficult, it is important to consider this study in relation to other problem gambling prevalence studies generally, even though this study is related to a very specific population. It is also important to consider the comparison with other studies in which the Gambling Eight screen has been used as a means of identifying problem gamblers and the prevalence rates that have been identified in these studies.

### ***9.5.2 New Zealand general population gambling problem prevalence study***

The 1999 National Prevalence Survey (Abbott & Volberg, 2000) estimated that 0.5% of the adult population of NZ were ‘probable pathological gamblers’ in the six months preceding its survey, with a rate of 1.3% of pathological and problem gamblers in total. While this figure has been much debated, as discussed in Chapter Two, given that the preceding study in 1991 (Abbott & Volberg, 1991) indicated that 3.3 percent of adults will be experiencing gambling problems with approximately one third of these considered pathological gamblers, both figures contrast significantly with the result of this study, which shows a prevalence rate of 17.1% of problem gambling for those presenting to hospital following an episode of deliberate self-harm. While the NPS has surveyed a large sample (n=6452), it is still proportionately a small sample of the total population of NZ.

It is important to note that the 1999 National Prevalence survey (Abbott & Volberg, 2000) reported a range of risk factors which were identified as associated with problem gambling. Abbott and Volberg (1991) reported that:

“In 1999, the individual risk factors most strongly associated with current problem and probable pathological gambling are ethnicity (Maori and Pacific Islanders have very high prevalence rates relative to other groups), labour force status (employed people have higher prevalence rates than those unemployed or not in the labour force), and education (people with no qualifications or vocational or trade



qualifications have higher rates than those with school qualifications only or higher qualifications)”

The association with ethnicity, specifically Maori and Pacific peoples was also identified in this study, however labour force status and education information was not collected, and a comparison is therefore not possible.

It was also reported in the 1999 NPS that male probable pathological gamblers no longer outnumbered females, although there remained a gender difference with respect to problem gamblers. This is important in relation to this study, in that it suggests that while there were a greater number of females in the non-participant sample, pathological and problem gamblers are likely to be evident within this group. While there was a considerably greater amount of demographic information collected in the NZ prevalence survey, chapter two discusses the debate regarding the accuracy and generalisability of this data. The data within the NPS however allowed for the inter-relationships between risk factors to be investigated, which was not possible in this study because of the small sample size, as stated previously.

### ***9.5.3 International problem gambling prevalence data***

The range of prevalence estimates has been detailed in previous chapters, with lifetime prevalence rates in community samples ranging from 0.1% to 5.1% (Petry & Armentano, 1999), prevalence amongst general psychiatry patients much higher, at 6.7% to 12% (Lesieur & Rosenthal, 1991) and specific populations such as substance misusers reported as high as 63% in one study, although this is critiqued in Chapter three.

While the methodology has of course varied hugely in this range of studies attempting to identify the prevalence rate of problem gambling within a range of populations, it is

noted that the rate of problem gambling determined in this study is above that of any study with psychiatry patients and is only lower than those with identified substance misuse problems. Given the high correlation of alcohol problems with those identified with gambling problems in this study, and the high figure generally in respect of other specific population studies, it indicates the importance of detecting gambling problems in those presenting following an episode of self-harm.

#### ***9.5.4 Gambling Eight screen studies***

The Gambling Eight screen was developed for use in primary health care settings (Sullivan, 1999) as detailed in Chapter seven but has been used in a variety of settings subsequently. It appears to transfer well to other settings, and as it takes less than sixty seconds to complete and has a simple method of scoring does not require a long period of training to use. A version has also been developed for self-administering.

The Gambling Eight screen has been used in many primary health settings with a variety of results. The most recent study (Sullivan, 2003c) identified in the pilot (n=180) a rate of 5% of problem gamblers in one GP practice in Auckland, and in the continuing study across a range of GP practices in Auckland (n=839) (Sullivan, 2003b), where there is a far greater range of ethnic diversity, the rate had climbed to just under 7%.

The Gambling Eight screen has also been used in a prison study (Sullivan, 2001a) in which two screens (Eight Screen & SOGS) identified 29% of the inmates as having a gambling problem (Eight Screen 24% and SOGS lifetime 24%;  $r = 83\%$ ). Those scoring three or more on either screen were approached for assessment to confirm the accuracy of the screen. The Eight Screen identified 91% of inmates who met DSM-IV criteria for pathological gambling at sentencing while the SOGS identified 82% of these

problem gamblers. The use of the Gambling Eight screen in alcohol and other drug populations was described in Chapter two.

While, as Potenza et al (2002) comment, further studies are needed to examine the generalisability of the Eight screen, it would seem that it is a useful tool in the context of this study. It has the potential to compare well with other studies that have used the Gambling Eight screen and other problem gambling screening instruments such as the SOGS in the prison study described above. The problem gambling prevalence rate determined in this study falls appropriately within the range of studies that have used the Gambling Eight screen.

## **9.7 Meaning of the Study**

### ***9.7.1 Implications for practice: Clinicians***

The new information that has come from this study has a number of implications for practice for clinicians working with problem gamblers and those working with individuals who self-harm. The risk factors that have been suggested in this study, along with other studies, highlight a number of groups that require special consideration on presentation to a service.

Younger people have been shown to be at higher risk of gambling problems in many studies (Clarke & Rossen, 2000; Lesieur & Heineman, 1988; Paton-Simpson et al., 2003; H. Shaffer & Hall, 1996) and those that were identified with gambling problems in this study, while not demonstrated to be statistically significant, were shown to have the lowest mean age. The suicide rate of young people has also been of particular concern, particularly in New Zealand (Beautrais, Joyce, & Mulder, 1996; Ministry of Health, 2003). Given these factors, it would seem important to be clearly asking

younger people who present following self-harm, about their gambling and equally, asking those who present with a gambling problem about their risk of self-harm.

There was also evidence statistically, of a possible effect of ethnicity shown in this study. Along with evidence from other problem gambling studies that have demonstrated clearly the risk factors in relation to problem gambling for Maori and Pacific people, it would seem essential to ask those presenting following self-harm about their gambling. This is particularly important given the under-representation of Maori and Pacific people in the deliberate self-harm statistics, but not the suicide statistics (Ministry of Health, 2003).

Gender is less likely to be a factor in determining whether someone is likely to have a gambling problem, given the rapid increase of gambling problems for females over recent years, primarily as a result of gambling machines (Paton-Simpson et al., 2003). It has been a commonly held misconception however, that problem gamblers are more likely to be male, and therefore, this education will be important for clinicians to ensure that their knowledge is up to date. This will determine who they are more likely to consider in respect of gambling problems, and it is now important to ask both genders equally.

The low participation rate in this study, as a result of patients not being asked suggests that introducing screening as a standard way of identifying gambling problems is not enough on its own. It will be important to provide training for psychiatrists and other psychiatric staff to feel confident to intervene, as well as to recognise the importance of doing so. In the 12 case studies detailed, only once was it noted that information was given regarding the Problem Gambling Helpline and only one other record was noted of a gambling problem, and this was raised by the client in question. While it may be that

problem gambling was discussed and not recorded, it still indicates the low priority of problem gambling for the clinicians involved in the study.

A number of other researchers (Hawton, 1994; Lewis et al., 1997; Taylor, Kingdom, & Jenkins, 1997) have suggested ways that may be effective in reducing suicide rates from an individual perspective, including detecting and treating substance misuse, which has shown to have a high correlation in the study with problem gambling and has also been shown to be common co morbidly with suicide and deliberate self-harm (Black & Moyer, 1998; Ciarrocchi, 1987; Ciarrocchi & Kirschner, 1991; Kaplan & Davis, 1997; Kausch, 2003; MacCallum & Blaszczynski, 2002; Sullivan, 1997).

Detecting and treating depression, which is very common amongst problem gamblers (Abacus Counselling and Training Services, 2003a; Ciarrocchi & Kirschner, 1991; Raylu & Oei, 2002), and which has been shown to be a significant factor in suicidality (Beautrais, Joyce, Mulder et al., 1996) is also an important strategy for clinicians in both specialist problem gambling services and services for those who deliberately self-harm.

### ***9.7.2 Implications for practice: Policy makers***

A significant result from this study was the strong relationship between alcohol problems and gambling problems. This suggests that consideration should be given by policy makers as to the co-existence of alcohol and gambling availability. This has recently been addressed in a new Gambling Act passed in September 2003, which no longer requires gambling to be on licensed premises. Submissions are currently being sought from communities by their local councils in respect of the licensing of gambling, in order to form a draft gambling venue policy by March 17, 2004 (Department of Internal Affairs of New Zealand, Undated). In respect of gambling problems, a more

recent thrust has been towards a public health approach (R. Brown & Raeburn, 2001), and it would be useful to consider within this any potential impact on suicide and deliberate self-harm.

Research in Finland (Mäkelä, 1996) concluded that primary prevention in terms of reducing general alcohol consumption would have some decreasing effect on suicide rates, by possibly moderating alcohol use problems. Given the close association between alcohol problems and problem gambling demonstrated in this study and others detailed here, it would be useful to note what impact this would have in relation to problem gambling and suicide as well.

Lewis, Hawton and Jones (1997), Taylor, Kingdom and Jenkins (1997) and Hawton (1994) have suggested population methods that may impact on the suicide rate including controlling unemployment and poverty. While problem gambling is not often considered in the writing in respect of unemployment and poverty, both are commonly associated, with lower socio-economic status being identified as a risk factor in respect of problem gambling (Abacus Counselling and Training Services, 2003b; Blaszczynski & Farrell, 1998; Jacobs, 2000; Raylu & Oei, 2002). With lower socio-economic status, there is evidence to suggest it is closely related to ethnicity (Abacus Counselling and Training Services, 2003b; Australian Productivity Commission, 1999) and this was a factor highlighted in this study.

## **9.8 Unanswered Questions and Future Research**

### **9.8.1 *Sample size***

This exploratory study has been useful in establishing a connection between problem gambling, alcohol and suicide. The study demonstrated a high prevalence of problem

gamblers (17.1%, with CI 9.2% to 28%) in the sample that participated, and further identified a strong effect ( $p=.01$ ) of the CAGE alcohol screen on whether or not a person was identified as a problem gambler. However, there remain some unanswered questions, which could only be determined by a larger sample size, particularly the inter-relationship of the variables investigated. This study has established a strong relationship between deliberate self-harm, problem gambling and alcohol which could usefully inform a larger study which has now been determined as worthwhile.

### ***9.8.2 Clinicians attitudes to problem gambling and data collection***

A significant feature of this study was the low participation rate, as a result of patients not being asked if they wished to participate, by the clinicians who assessed them.

There is little known in this study about the reasons behind this, apart from the refusal rate and some reasons that have been detailed previously. This has still left 79.8% of the non-participants not asked, with the reason for this unspecified.

It would be useful in a future study to include an evaluation of the clinicians' attitudes to participating in the study themselves, and also to consider other factors such as the time of the day that the assessment took place i.e. within normal work hours or out of hours, and determine what impact that had on participation rates. A survey on the attitude of clinicians as to the significance of problem gambling would also be useful. The study of alcohol and other drug counsellors described in Chapter three highlighted a number of obstacles in these clinicians identifying problem gamblers, and it would be important to consider whether this was also the case with psychiatric specialists.

### ***9.8.3 Modes of gambling***

The range of types of gambling engaged in was collected in this study, but not the frequency or the preferred mode of gambling. This has meant that it has not been

possible to determine what modes of gambling were in association with the identified gambling problems. This would be a useful addition to a further study of this nature.

## **9.9 Conclusion**

Diekstra (1992) suggested that a comprehensive general strategy for the prevention of suicide behaviour should consist of research, improving services, training and information on suicide, and focusing on special groups. The information from this study would indicate that those with identified gambling problems are a special group, at risk of suicide or self-harm and that considerable further work is warranted. The group who were identified with both alcohol and gambling problems are a further specialised group, and demonstrated somewhat differing features from those who had gambling problems alone, although further research would be required to confirm these inter-relationships statistically.

As stated earlier however, while the sample size in this study is small, the results indicate trends that should begin to impact on practice. Firstly, in the area of research, as outlined, as the aim of this study was as an exploratory study to investigate the connections between suicide, problem gambling and alcohol, to inform future research. Secondly, it was noted from the study, that for those involved with intervening following deliberate self-harm, a positive score on the gambling eight screen did not necessarily raise a concern to the degree that a question was asked or an intervention offered, suggesting that specialised information and training could usefully be offered to both those specialising in work with deliberate self-harm and those specialising in work with problem gamblers. Thirdly, while addressing these knowledge gaps will be of some benefit, further consideration to improving and developing appropriate services



for those who have had one or more episodes of deliberate self-harm where gambling and alcohol have been a factor, is an important way forward from this study.

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# Appendices