



**EXPLORATION OF THE IMPACT OF GAMBLING AND
PROBLEM GAMBLING ON PACIFIC FAMILIES AND
COMMUNITIES IN NEW ZEALAND**

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CONTENTS

EXECUTIVE SUMMARY	7
1. BACKGROUND.....	13
1.1 Research design.....	14
1.1.1 Objectives.....	14
1.1.2 Phase One.....	14
1.1.3 Phase Two.....	15
2. RESEARCH METHODOLOGY	16
2.1 Ethics approval.....	16
2.2 Consultation.....	16
2.3 Literature review	17
2.4 Secondary data set analyses.....	18
2.4.1 Data sets.....	18
2.4.2 Social impacts of gambling in New Zealand data set.....	18
2.4.3 Gaming and betting activities survey data set.....	19
2.4.4 Pacific Islands Families Study data set.....	19
2.4.5 Data analysis.....	20
2.5 Focus groups.....	20
2.5.1 Recruitment	20
2.5.2 Discussion topics.....	22
2.5.3 Data analysis.....	22
2.6 Semi-structured individual interviews.....	22
2.6.1 Recruitment	22
2.6.2 Discussion topics.....	23
2.6.3 Data analysis.....	23
3. LITERATURE REVIEW	24
3.1 Introduction	24
3.2 Gambling.....	25
3.3 Cultural factors for gambling	26
3.4 General risk factors for problem gambling	29
3.5 Research gaps.....	31
3.6 Conclusion.....	32
4. RESULTS: SECONDARY DATA SET ANALYSES	33
4.1 Social impacts of gambling in New Zealand data set.....	33
4.1.1 Participant characteristics	34
4.1.2 Gambling behaviour.....	34
4.1.3 Gambling frequency	36
4.1.4 Impacts of respondents' own gambling.....	43
4.1.5 Knowing a heavy gambler.....	57
4.1.6 Impacts caused by other people's gambling.....	58
4.1.7 Section summary.....	65
4.2 Gaming and betting activities survey data set	67
4.2.1 Participant characteristics	67
4.2.2 Gambling behaviour.....	68
4.2.3 Attractive and unattractive factors leading to or preventing gambling	71
4.2.4 Awareness and knowledge about harmful gambling.....	73
4.2.5 Knowledge and perception about gambling treatment service providers	78
4.2.6 Section summary.....	80

4.3	Pacific Islands Families Study data set	82
4.3.1	<i>Participant characteristics</i>	83
4.3.2	<i>Gambling behaviour</i>	85
4.3.3	<i>Associations with gambling</i>	88
4.3.4	<i>Changes in gambling and associated factors</i>	94
4.3.5	<i>Section summary</i>	100
5.	RESULTS: FOCUS GROUP AND INTERVIEW DATA ANALYSES	103
5.1	Participant characteristics	104
5.1.1	<i>Focus groups</i>	104
5.1.2	<i>Individual interviews</i>	106
5.2	Focus group themes	107
5.2.1	<i>Defining 'gambling'</i>	107
5.2.2	<i>Motivations for gambling</i>	108
5.2.3	<i>Positive aspects and impacts of gambling</i>	111
5.2.4	<i>Negative aspects and impacts of gambling</i>	112
5.2.5	<i>Cultural protective factors against harmful gambling</i>	114
5.2.6	<i>Cultural risk factors for harmful gambling</i>	115
5.2.7	<i>Help-seeking behaviours</i>	115
5.3	Individual interview themes	118
5.3.1	<i>Motivations for gambling</i>	118
5.3.2	<i>Cultural protective factors against harmful gambling</i>	120
5.3.3	<i>Cultural risk factors for harmful gambling</i>	121
5.3.4	<i>Transitioning from gambling to problem gambling</i>	122
5.3.5	<i>Help-seeking behaviours</i>	123
5.4	Chapter summary	124
6.	DISCUSSION	128
6.1	Pacific people's gambling and the impacts	128
6.1.1	<i>Migration</i>	128
6.1.2	<i>Gambling versus not gambling</i>	129
6.1.3	<i>Impacts of gambling</i>	133
6.1.4	<i>Help-seeking behaviours</i>	134
6.2	Implications	135
6.3	Conclusion	137
7.	LIMITATIONS OF THIS STUDY	138
7.1	Secondary analyses of data sets	138
7.2	Focus groups and individual interviews	139
8.	REFERENCES	140
	APPENDIX 1 Ethical approval - Phase Two	145
	APPENDIX 2 Consultation Group Members	146
	APPENDIX 3 Summary of Consultation and Advisory Group meetings	147
	APPENDIX 4 Data Tables A: Social impacts of gambling in New Zealand data	149
	APPENDIX 5 Data Tables B: Gaming and betting activities survey data	156
	APPENDIX 6 Data Tables C: Pacific Islands Families Study data	167

LIST OF TABLES

Table 1: Socio-demographic characteristics	34
Table 2: Gambling frequency by mode and ethnicity	37
Table 3: Gambling frequency by mode and gambler type	38
Table 4: Time spent on a typical occasion by mode and ethnicity	40
Table 5: Time spent on a typical occasion by mode and gambler type	42
Table 6: Relationship of heavy gambler by ethnicity	57
Table 7: Main gambling activity of heavy gambler	57
Table 8: Socio-demographic characteristics	68
Table 9: Attractive factors leading young people to gambling	72
Table 10: Unattractive factors discouraging young people from gambling	73
Table 11: Able to describe signs of harmful gambling by ethnicity	73
Table 12: Able to describe signs of harmful gambling by age group	74
Table 13: Top 10 signs of harmful gambling by ethnicity	74
Table 14: Top 10 signs of harmful gambling by age group	75
Table 15: Top 10 potential impacts by ethnicity	76
Table 16: Top 10 potential impacts by age group	76
Table 17: Strategy to avoid excessive gambling by ethnicity	77
Table 18: Strategy to avoid excessive gambling by age group	78
Table 19: Able to name a treatment service provider by ethnicity	78
Table 20: Able to name a treatment service provider by age group	78
Table 21: Top five treatment service providers by ethnicity	79
Table 22: Top five treatment service providers by age group	79
Table 23: Comfortable referring others to treatment service providers by ethnicity	79
Table 24: Comfortable referring others to treatment service providers by age group	80
Table 25: Socio-demographic characteristics of mothers in Year 9	84
Table 26: Socio-demographic characteristics of fathers in Year 6	84
Table 27: Socio-demographic characteristics of children in Year 9	85
Table 28: With whom mother gambled in Year 9	87
Table 29: With whom father gambled in Year 6	87
Table 30: No. of gambling modes by mothers' problem gambling risk level in Year 9	87
Table 31: No. of gambling modes by fathers' problem gambling risk level in Year 6	88
Table 32: Mothers' gambling and religiosity in Year 6	89
Table 33: Fathers' gambling and religiosity in Year 6	90
Table 34: Fathers' gambling and general health status in Year 6	91
Table 35: Fathers' gambling and physical activity in Year 6	92
Table 36: Mothers' gambling and self-esteem in Year 6	93
Table 37: Children's behaviour and gambling participation	93
Table 38: Children's after-school activities and gambling participation	94
Table 39: Mothers giving up gambling and life changes	95
Table 40: Fathers giving up gambling and life changes	96
Table 41: Mothers taking up gambling and life changes	97
Table 42: Fathers taking up gambling and life changes	98
Table 43: Mothers changes in weekly gambling expenditure and life changes	99
Table 44: Fathers changes in weekly gambling expenditure and life changes	100

LIST OF FIGURES

Figure 1: Gambling participation	35
Figure 2: Gambling participation by gambling mode	35
Figure 3: Number of gambling modes by ethnicity.....	36
Figure 4: Number of gambling modes by gambler type.....	36
Figure 5: Won, broken even or lost money gambling	43
Figure 6: Impacts of respondents' own gambling	43
Figure 7: Impact of own gambling on physical health by ethnicity	44
Figure 8: Impact of own gambling on mental wellbeing by ethnicity.....	44
Figure 9: Impact of own gambling on financial situation by ethnicity.....	45
Figure 10: Impact of own gambling on housing situation by ethnicity	45
Figure 11: Impact of own gambling on standard of living by ethnicity	46
Figure 12: Impact of own gambling on relationships by ethnicity.....	46
Figure 13: Impact of own gambling on child care by ethnicity.....	47
Figure 14: Impact of own gambling on elderly care by ethnicity	47
Figure 15: Impact of own gambling on feelings about self by ethnicity	48
Figure 16: Impact of own gambling on study/training performance by ethnicity.....	48
Figure 17: Impact of own gambling on work performance by ethnicity	49
Figure 18: Impact of own gambling on overall quality of life by ethnicity	49
Figure 19: Impact of own gambling on life satisfaction by ethnicity.....	50
Figure 20: Impact of own gambling on physical health by gambler type	50
Figure 21: Impact of own gambling on mental wellbeing by gambler type.....	51
Figure 22: Impact of own gambling on financial situation by gambler type.....	51
Figure 23: Impact of own gambling on housing situation by gambler type.....	52
Figure 24: Impact of own gambling on standard of living by gambler type	52
Figure 25: Impact of own gambling on relationships by gambler type.....	53
Figure 26: Impact of own gambling on child care by gambler type.....	53
Figure 27: Impact of own gambling on elderly care by gambler type.....	54
Figure 28: Impact of own gambling on feelings about self by gambler type	54
Figure 29: Impact of own gambling on study/training performance by gambler type	55
Figure 30: Impact of own gambling on work performance by gambler type.....	55
Figure 31: Impact of own gambling on overall quality of life by gambler type	56
Figure 32: Impact of own gambling on life satisfaction by gambler type.....	56
Figure 33: Knowing a heavy gambler by ethnicity	57
Figure 34: Impacts caused by other people's gambling	58
Figure 35: Impact of other people's gambling on physical health by ethnicity	59
Figure 36: Impact of other people's gambling on mental wellbeing by ethnicity.....	59
Figure 37: Impact of other people's gambling on financial situation by ethnicity.....	60
Figure 38: Impact of other people's gambling on housing situation by ethnicity	60
Figure 39: Impact of other people's gambling on standard of living by ethnicity	61
Figure 40: Impact of other people's gambling on relationships by ethnicity	61
Figure 41: Impact of other people's gambling on child care by ethnicity.....	62
Figure 42: Impact of other people's gambling on elderly care by ethnicity.....	62
Figure 43: Impact of other people's gambling on feeling about self by ethnicity.....	63
Figure 44: Impact of other people's gambling on study/training performance by ethnicity ...	63
Figure 45: Impact of other people's gambling on work performance by ethnicity	64
Figure 46: Impact of other people's gambling on overall quality of life by ethnicity.....	64
Figure 47: Impact of other people's gambling on life satisfaction by ethnicity	65
Figure 48: Gambling participation by gambling mode	68
Figure 49: Gambling participation by ethnicity	69
Figure 50: Gambling participation by age group.....	69
Figure 51: Gambling frequency by gambling mode.....	70

Figure 52: Gambling frequency for lottery products by ethnicity	71
Figure 53: Gambling frequency for lottery products by age group	71
Figure 54: Mothers' gambling participation in Year 6.....	85
Figure 55: Mothers' gambling participation in Year 9.....	85
Figure 56: Fathers' gambling participation in Year 6	86
Figure 57: Children's gambling participation in Year 9.....	86

EXECUTIVE SUMMARY

Background

Over the past couple of decades, Pacific people have consistently been reported at higher risk for developing problem gambling than other ethnicities. However, there is very little gambling-related Pacific-specific research and even less that takes into account the different cultures associated within the generic term of 'Pacific people'. This highlighted a need for significant further study in this area.

In June 2010, the Gambling and Addictions Research Centre at Auckland University of Technology (AUT University) was commissioned by the Ministry of Health to conduct the research project *Exploration of the impact of gambling and problem gambling on Pacific families and communities in New Zealand*. The primary objectives of the project were to: a) Improve understanding of the impact of gambling on the health and wellbeing of Pacific families and communities, b) Inform understanding on risk and resiliency factors in relation to gambling, and c) Improve understanding on the antecedents and aetiology of problem gambling.

Methodology

To achieve the primary objectives, this project was conducted in two phases with a specific focus on the different ethnicities comprising the Pacific population, and in particular focusing on the major ethnicities living in New Zealand: Samoan, Tongan, Cook Islands and Niuean.

The first phase involved desktop research incorporating a literature review and quantitative secondary analyses of three existing Pacific data sets. For the literature review, relevant national and international literature which pertained to gambling, problem gambling and impacts of gambling, with a focus on Pacific communities, was reviewed and summarised.

For the secondary analyses of three existing Pacific data sets, the raw data were obtained from the organisation which conducted the original research. For two of the data sets, Pacific data had originally been analysed as a homogeneous entity in comparison with data from other ethnicities. Hence, the secondary analyses performed as part of the current study were additional analyses that enabled assessment of findings by the major Pacific ethnicities living in New Zealand. For the third data set from a longitudinal birth cohort study, analyses were performed as part of the current study, which had not previously been conducted.

The three data sets analysed were:

- *Assessment of the social impacts of gambling in New Zealand* (2008) Centre for Social and Health Outcomes Research and Evaluation (SHORE), Massey University (Pacific data subset, 1,031 respondents)
- *Gaming and betting activities survey: New Zealanders' knowledge, views and experiences of gambling and gambling-related harm* (2007) Health Sponsorship Council of New Zealand (Pacific data subset, 267 respondents)
- *Pacific Islands Families Study* (PIF) (2000 to 2009) Centre for Pacific Health and Development Research, AUT University. A longitudinal birth cohort study following 1,376 Pacific children, their mothers and fathers. Data have been collected at various time points from the year 2000 (when the children were born) to 2009 (when the children were nine years of age).

Phase Two was qualitative in nature, comprising twelve focus groups (with a total of 97 participants) and 15 semi-structured in-depth interviews conducted with Samoan, Tongan and Cook Islands participants. Information obtained from the literature review and secondary data analyses were used to help develop the focus group topics. Data from the focus groups was then used to develop the semi-structured interview topics.

Literature review

The literature review revealed a paucity of research around Pacific people and gambling, particularly in an ethnic-specific context. Recreational gambling is popular; however, a proportion of people experience negative impacts from problem gambling. Previous research has indicated that Pacific people are at significantly higher risk for developing problem gambling than other ethnicities, and also appear to be under-utilising gambling help services.

Whilst acknowledging there is limited information in the following areas, there remain gaps in knowledge and understanding of:

- The impacts of gambling on significant others
- The impacts of gambling on communities
- Why most Pacific people do not gamble
- Pacific people's attitudes to gambling
- Why there are Pacific ethnic/cultural differences in gambling participation (e.g. cultural factors and religion)
- Gender differences in Pacific gambling participation
- Socio-economic and environmental factors associated with gambling participation
- The relationship between gambling and acculturation stress
- The role of 'money economy' and 'gift economy'
- Why Pacific people transition from gambling to problem gambling (and vice versa)
- The intangible costs of Pacific people's problem gambling
- The key risk factors for Pacific people developing problem gambling
- The key protective factors against Pacific people developing problem gambling
- Help-seeking behaviours of Pacific people.

The review highlighted the need to understand Pacific people's gambling, the impacts of gambling and problem gambling, and why Pacific people are at high risk for developing problem gambling.

Results

The combination of secondary analyses of three separate Pacific data sets combined with focus groups and in-depth interviews with Pacific people have provided an opportunity to substantially expand on previous knowledge related to Pacific people, their relationship to gambling, and the impacts.

Pacific people's gambling

Migration to New Zealand is a reason for Pacific people gambling, since gambling opportunities are readily available and accessible whilst in the islands there are very few, or no, gambling opportunities. Having more free time in New Zealand could also be a factor as people could gamble to fill time; in the islands, people are more likely to be very busy with general daily living activities. The secondary analyses indicated *heterogeneity in gambling participation*. Tongans were more likely to be non-gamblers, least likely to participate in continuous modes of gambling, more likely to only participate in one mode of gambling and

less likely to know “fairly heavy gamblers”. However, there were some differences between the data sets with the PIF study showing that Samoan fathers were the least likely to gamble compared to fathers in the other ethnicities. Cook Islands participants were more likely to participate in non-casino electronic gaming machine gambling and Cook Islands fathers were the most likely to gamble compared with fathers in the other ethnicities.

No major differences between the ethnicities were apparent in the mode or frequency of gambling. Lottery products were the most popular followed by non-casino and casino electronic gaming machines at a substantially lower level. The frequency of gambling depended on the mode of gambling and the more frequent the participation, the more modes of gambling were generally involved.

Gambling was defined differently by Pacific people in relation to the Western concept of gambling. This related to the lack of gambling availability in the Pacific island countries as well as to deep-rooted cultural, religious and church influenced views. Focus group participants generally thought any ‘gambling’ that was for the benefit of community or family (i.e. *cultural obligations*) was not gambling because it was ‘fund raising’ or ‘an exchange of gifts’. Some focus group participants thought this was positive with acknowledgement of the potential for gambling to raise money or contributing to fund raising being a risk factor for harmful gambling. Cook Islands participants appeared to have the most pressures to provide money for family and thus more pressures to turn to gambling in the hope of winning the money. However, for some focus group and interview participants, cultural obligations were a protective factor against harmful gambling because the money was required to send to family in the home islands.

Religious and church obligations are also important in relation to participating, or not participating, in gambling activities, with gambling acceptability or non-acceptability endorsed by specific church denominations. Obligations to the church could be a catalyst to gamble on modes other than housie and bingo which could start the transition process into harmful gambling. Conversely, churches which do not condone gambling could be protective against harmful gambling. Divinity appeared to be particularly important amongst Tongan participants in relation to gambling because “God wills it” was considered not to be gambling. This perception could also partially explain why, in the secondary analyses, over three-quarters (78%) of Tongan youth thought that ‘to win money’ was an attractive factor for gambling compared with half (53%) of Samoan youth. Mothers who never attended church had greater odds for gambling on continuous modes (1.94 times) than mothers who attended only Pasifika churches “a lot”. A similar finding was noted for fathers where those who never attended church and those who attended non-Pasifika churches had greater odds for past-year gambling (2.74 and 2.16 times respectively) as well as gambling on continuous modes (3.66 and 2.39 times respectively) than fathers who attended only Pasifika churches “a lot”.

There are also other more general reasons why Pacific people gamble. For some, gambling was a way to *escape* from family problems or issues or was a way to deal with stress. For others, gambling was a way to be *socially connected*. Nine year old children who had more after-school activities had greater odds for gambling (1.56 times or greater) than children who never had those activities. Although secondary data analyses indicated that mothers and fathers generally preferred to gamble alone, Tongan mothers were more likely to gamble with family members and less likely to gamble with spouse/partner.

Gambling was perceived, by focus group and interview participants, to be an *easy way to make money*. Winning money at gambling was endorsed by over half the youth in one of the data sets as an attractive factor for gambling with only 40% of youth endorsing ‘losing money/see others lose money’ as an unattractive factor of gambling.

Personality and behavioural factors were associated with gambling. Mothers with low self-esteem had greater odds for gambling on continuous modes (1.88 times) than mothers who did not have low self-esteem (PIF). Nine-year old children who ‘externalised’ outside the normal range or who were more hyperactive had greater odds for being a gambler (1.89 and 1.32 times respectively) than children who were within the normal ranges.

Health factors were noted to be substantially associated with gambling for fathers. Those who rated their health as poor or fair had greater odds for gambling on continuous forms (4.90 and 1.891 times respectively) than fathers who rated their health as good.

Investigation of *changes over time* from earlier to later interview time points was possible with the PIF study due to its longitudinal cohort nature. Change in *marital status* was a predictor for mothers *giving up gambling*, whether the change was from single to partnered or vice versa (2.06 and 1.73 times greater odds respectively). Mothers who *lost employment* reduced their mean weekly gambling expenditure by just less than five dollars; a similar finding was not apparent for fathers. However, *becoming depressed* was a predictive factor amongst fathers for *starting gambling* (3.34 times greater odds), and for those who already gambled, for increasing their mean weekly expenditure by over six dollars.

Taking up drinking alcohol was a predictive factor for *starting gambling* in mothers and fathers (2.23 and 2.74 times greater odds respectively) and also led to increased gambling expenditure (for those who already gambled) by at least five dollars per week. For mothers, *giving up drinking alcohol* was associated with lower odds for giving up gambling (0.65 times) whilst for fathers the converse was true with giving up drinking alcohol being predictive of also giving up gambling (3.75 times greater odds). Additionally, fathers who gambled and gave up drinking alcohol reduced their mean weekly gambling expenditure by about seven dollars. These latter findings may be indicative of gender differences in reasons for gambling. *Taking up smoking* was predictive of *starting gambling* for mothers (2.12 times greater odds), and for mothers who already gambled, taking up smoking led to increased mean weekly gambling expenditure by just under four dollars. This finding was not noted for fathers and is another indication of gender differences.

Impacts of gambling

The secondary analyses indicated that whilst most participants reported no impact of their, or someone else’s gambling, on themselves, of those who did report an impact some ethnic differences were noted. Tongan (and Other Pacific) participants were more likely to report *positive impacts* of another person’s gambling on their mental wellbeing and Tongan participants were more likely to report positive impacts on relationships, though these findings did not achieve a level of statistical significance and may be of little importance. Tongan participants were also least likely to report any impact of another person’s gambling on their own relationships with family/friends or their overall satisfaction with life.

Generally, more *negative impacts* were reported than positive impacts and overall, the negative impacts of someone else’s gambling were greater than the impacts of own gambling. Similarly, more negative impacts than positive were discussed in the focus groups and interviews. In one data set, almost three-quarters of respondents who gambled reported losing money on gambling although only 15% reported *negative financial impacts* due to own gambling (and 13% reported winning money overall, on gambling). One-fifth (21%) of respondents reported negative financial impacts from someone else’s gambling, along with negative feelings about self (20%) and negative impacts on life satisfaction (18%). Similarly in another data set, 32% of respondents identified ‘financial problems’ as the top sign of harmful gambling with 37% identifying ‘unable to pay for household bills/food/rent’ as the top impact of harmful gambling. Although only a minority of participants reported financial

negative impacts of gambling in the secondary analyses, the focus group and interview participants discussed the extreme nature of impacts caused by financial deficit including relationship breakdown, loss of accommodation and belongings, child neglect and suicide.

Gambling participation differences were also noted on impacts of gambling. Lotto/keno gamblers only, were less likely to report negative impacts on the various life domains than other gamblers whilst frequent gamblers on continuous modes were more likely to report negative impacts, particularly on financial situation and overall quality of life.

Help-seeking behaviours

In general, only female community participants in the focus groups and interviews discussed help-seeking for problem gambling. There was limited awareness of gambling help services with the gambling helpline the only treatment service recalled, possibly because of advertisements in a variety of media. Many participants recalled at least some of the advertising although the effectiveness was queried by youth participants who felt they targeted 'older' people. These qualitative findings were similar to findings from the secondary analyses; only 56% of respondents were able to name a treatment service with 49% of those recalling the gambling helpline. Cook Islands participants were less likely to report knowing of the helpline. The limited awareness of where to seek help for gambling problems could be one reason why Pacific people are under-represented at problem gambling treatment services. Other reasons raised by focus group participants included shame and cultural issues (particularly by Tongan participants in relation to seeking help for problematic gambling, or to seeking help from other Tongans).

Some gamblers (27%) have used strategies to attempt to avoid excessive gambling with 68% indicating 'avoiding places with betting/gambling as an attraction'. Cook Islands and Niuean participants respectively were more likely to report a different strategy of either 'separating the money for betting and stop gambling when it was used' or 'setting a dollar figure for gambling before leaving home'.

Help could also start informally within the family, or via gambling venue staff intervention and the importance of a culturally appropriate and respectful environment was critical to assist Pacific people with gambling issues, particularly for those who held strong island beliefs and traditions.

Conclusion

The primary objectives of this project were to: improve understanding of the impact of gambling on the health and wellbeing of Pacific families and communities, inform understanding on risk and resiliency factors in relation to gambling, and improve understanding on the antecedents and aetiology of problem gambling.

As detailed in the literature review, very little empirical research around Pacific people and their gambling behaviours had previously been conducted and there were numerous gaps in knowledge identified. In particular, given the high risk of Pacific people for developing problem gambling and under-representation at treatment services, an in-depth understanding of gambling in a New Zealand Pacific context was crucial.

The two-pronged approach of the current project comprising quantitative secondary analyses of large existing data sets combined with qualitative focus groups and interviews has significantly increased our understanding of Pacific gambling behaviours and impacts. Whilst not all the identified gaps in knowledge have been addressed and additional gaps have presented themselves, the current project has advanced understanding and knowledge around

why Pacific people do, or do not gamble and why some are potentially at high risk for developing problem gambling. Other knowledge gaps which have been identified, at least to some extent, and which add to the current evidence-base have included: impacts of gambling (positive and negative), Pacific people's attitudes towards gambling, socio-economic and environmental factors associated with gambling participation, the relationship between gambling and migration/cultural differences with living in New Zealand versus living in a Pacific island, some risk and protective factors for/against developing problem gambling, and some insight into the help-seeking behaviours of Pacific people.

1. BACKGROUND

Nationally representative prevalence surveys conducted in 1991 and 1999 identified that Pacific people were at substantially greater risk of developing problems related to gambling than other population groups, with an estimate that they were over six times more likely to have problems than European/Pakeha populations. The prevalence surveys also indicated that Pacific people have a 'bimodal' distribution for gambling, meaning that whilst fewer Pacific people take part in gambling activities than the general population, a disproportionate number of those who do gamble have a higher expenditure than other population groups (Abbott, 2001; Abbott & Volberg, 2000). Abbott and Volberg (2000) hypothesised that Pacific people might be at high risk for developing gambling problems due to the bimodal distribution since those who gamble tend to have higher levels of involvement with continuous forms of gambling, are less likely to have experience with those forms of gambling, and can be experiencing stress associated with acculturation, unemployment or under-employment.

The nationally representative New Zealand Health Survey conducted in 2002/03 confirmed the previous prevalence surveys' findings of Pacific people being the most at-risk group for developing gambling problems with a risk ratio of 4.5¹ times more likely than European/Others (Ministry of Health, 2006). The higher risk continued to be noted in the 2006/07 New Zealand Health Survey which found Pacific people to be approximately four times² more likely to be problem gamblers than the general population (Ministry of Health, 2009) and which also supported a bimodal pattern for gambling. The 2006/07 New Zealand Health Survey also indicated that a fifth of problem gamblers were of Pacific ethnicity whilst comprising only 5.3% of the total adult population.

Results from the six- and nine-year data collection points in the longitudinal Pacific Islands Families (PIF) study also indicated a bimodal distribution for gambling with a low participation rate (in comparison to that expected by the general population) but with a high expenditure by those who did gamble (Bellringer, Abbott, Williams, & Gao, 2008; Bellringer, Taylor, Poon, Abbott, & Paterson, 2012).

The high risk for Pacific people developing problem gambling and the fact that the term 'Pacific' encapsulates several distinct ethnicities have highlighted the need for significant further study in this area, especially since there is very little gambling-related Pacific-specific research that takes into account the different cultures within the generic term of 'Pacific people'.

In June 2010, the Gambling and Addictions Research Centre at Auckland University of Technology was commissioned by the Ministry of Health to conduct the research project *Exploration of the impact of gambling and problem gambling on Pacific families and communities in New Zealand*.

¹The national prevalence surveys in 1991 and 1999 used the Revised South Oaks Gambling Screen (SOGS-R), the 2002/03 health survey used a non-validated problem gambling screen and the 2006/07 health survey used the Problem Gambling Severity Index. Thus, the results from the surveys are not directly comparable.

² After adjusting for age.

1.1 Research design

1.1.1 Objectives

The primary objectives of the project were to:

- Improve understanding of the impact of gambling on the health and wellbeing of Pacific families and communities
- Inform understanding on risk and resiliency factors in relation to gambling
- Improve understanding on the antecedents and aetiology of problem gambling.

The research was conducted in two phases.

Phase One

- Literature review
- Secondary analyses of Pacific data from existing data sets.

Phase Two

- Focus groups with key Pacific stakeholders
- Semi-structured individual interviews with key Pacific stakeholders.

The first phase of the project included a literature review and secondary analyses of three existing Pacific data sets. Information obtained from the literature review and secondary data analyses were used to help develop the focus group topics in Phase Two. Focus group results were then used to develop the topics used in the semi-structured interviews; generally the interview topics stemmed from gaps in, or limited information from, the focus groups.

1.1.2 Phase One

Literature review

Relevant national and international literature pertaining to gambling, problem gambling and impacts of gambling in Pacific communities was reviewed and summarised. Where sample sizes allowed, data were examined by the major Pacific ethnic groups (Samoan, Tongan, Cook Islands and Niuean).

Secondary analyses

Three data sets were analysed:

- *Assessment of the social impacts of gambling in New Zealand* (2008) Centre for Social and Health Outcomes Research and Evaluation (SHORE), Massey University
- *Gaming and betting activities survey: New Zealanders' knowledge, views and experiences of gambling and gambling-related harm* (2007) Health Sponsorship Council of New Zealand
- *Pacific Islands Families Study* (2000 to 2009) Centre for Pacific Health and Development Research, AUT University

The data sets were provided in an anonymised form to the researchers. Analyses were conducted on the three data sets to expand on the original reports, with a focus on the objectives of the current project. Cross-sectional analyses were conducted for all three data sets with limited longitudinal analyses also conducted on the Pacific Islands Families data set.

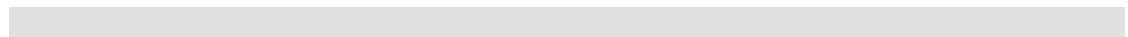
1.1.3 Phase Two

Focus groups

Focus groups were conducted with key Pacific stakeholders including gambling treatment providers, gambling venue staff, general community gamblers and non-gamblers, current/ex problem gamblers, significant others of problem gamblers and church leaders. The purpose of the focus groups was to elicit views on Pacific people's gambling (or non-gambling) in relation to Pacific culture, and the effects of gambling (and problem gambling) on Pacific families and communities. Recognising that Pacific people are a heterogeneous group, Samoan, Tongan and Cook Islands views³ were specifically sought, as were those of New Zealand born and island born young people (aged 18 to 24 years).

Semi-structured individual interviews

Semi-structured individual interviews were conducted with Pacific general community gamblers and non-gamblers, current/ex problem gamblers and significant others of problem gamblers. The purpose of the interviews was to allow for data to be gathered that expanded and/or clarified the information obtained from the focus groups. Thus, the topics covered in the interviews were tailored dependent on the responses gathered from the focus groups. Samoan, Tongan and Cook Islands participants were recruited.



³ The scope of this project precluded more than three ethnic groups being specifically included in the qualitative part of the project.

2. RESEARCH METHODOLOGY

2.1 Ethics approval

Ethical approval was not required for Phase One which involved desk-top analyses of available, anonymised data sets.

Phase Two involved focus groups and interviews. An ethics application for Phase Two was submitted to the AUT Ethics Committee (AUTEC) which is a Health Research Council accredited human ethics committee. All participant materials (i.e. information sheet and consent form) and other relevant documents were submitted to AUTEC, which considers the ethical implications of proposals for research projects with human participants. AUT is committed to ensuring a high level of ethical research and AUTEC uses the following principles in its decision making in order to enable this to happen:

Key principles:

- Informed and voluntary consent
- Respect for rights of privacy and confidentiality
- Minimisation of risk
- Truthfulness, including limitation of deception
- Social and cultural sensitivity including commitment to the principles of the Treaty of Waitangi/Te Tiriti O Waitangi
- Research adequacy
- Avoidance of conflict of interest.

Other relevant principles:

- Respect for vulnerability of some participants
- Respect for property (including University property and intellectual property rights).

The ethics approval for Phase Two was granted on 5 October 2011 (Appendix 1).

During the research the following measures were taken to protect the identity of the participants:

- All participants were allocated a code by the research team to protect their identities
- No personal identifying information has been reported.

In addition:

- Participants in focus groups and interviews were informed that participation in the research was voluntary and that they could withdraw at any time, prior to data reporting.

2.2 Consultation

Cultural safety, integrity and appropriateness of the research process were key considerations throughout. In this regard, AUT Pacific researchers provided advice at all stages of the study. Additionally, Bridget Fa'amatua'ainu was recruited as the key research officer for this project. This supports the development of Pacific research capacity in the problem gambling sector.

A Consultation Group was established specifically for this project to advise on the research process and provide cultural guidance. The Group comprised specialist Pacific problem gambling treatment service staff (or ex-staff). Appendix 2 details membership of the Consultation Group.

In addition, the Advisory Group established for the AUT Pacific Islands Families study was consulted during this project, again to provide advice and guidance on the research process. The Advisory Group comprises Pacific people who have expertise in the area of Pacific health, an understanding of Pacific communities in New Zealand, an interest in Pacific health and wider social issues, and experience in working with Pacific communities.

Two Consultation/Advisory Group meetings were held to discuss Phase Two methodology and related issues. A summary of discussions is presented in Appendix 3.

2.3 Literature review

The literature review was conducted through the following means:

- Electronic bibliographic indexes accessed via on-line database searches
- Specialist libraries accessed via web-based searches and searches through personal collections.

Electronic bibliographic indexes

A search of on-line databases accessible through the Auckland University of Technology library system was conducted to locate potentially relevant literature.

Each literature search on each database accessed varying numbers of articles. There were varying degrees of overlap between the databases. For titles or abstracts that appeared to be relevant to this project, full text publications were accessed electronically and reviewed.

Specialist libraries

Various gambling-related organisations and government departments have websites which include searchable databases and/or libraries, or which detail gambling-related publications and reports. These websites were searched for literature relevant to the project. Any material that appeared to be relevant was downloaded and reviewed.

The research team also has access to substantial personal libraries in relation to gambling. These collections contain reports and articles that have not been published in mainstream literature (grey literature) plus publications that are difficult to obtain. They also include pre-publication reports and articles from a variety of sources. Where relevant, these materials were utilised for this project.

2.4 Secondary data set analyses

2.4.1 Data sets

Secondary analyses were conducted on three data sets as part of this study:

- *Assessment of the social impacts of gambling in New Zealand* (2008) Centre for Social and Health Outcomes Research and Evaluation (SHORE), Massey University
- *Gaming and betting activities survey: New Zealanders' knowledge, views and experiences of gambling and gambling-related harm* (2007) Health Sponsorship Council of New Zealand
- *Pacific Islands Families Study* (2000 to 2009) Centre for Pacific Health and Development Research, AUT University

For the first two data sets, only the Pacific data subsets were analysed.

2.4.2 Social impacts of gambling in New Zealand data set

During 2007, the Centre for Social and Health Outcomes Research and Evaluation (SHORE) at Massey University conducted a national telephone survey of more than 7,000 New Zealanders examining social impacts of gambling. The study design deliberately oversampled people of Pacific Island origin (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008).

For the current study, the original Pacific data subset of 1,031 respondents was analysed to expand on the original report, with a focus on investigating the impact of gambling and problem gambling on Pacific families and communities in New Zealand.

Although the original report presented results for Pacific people, a more detailed breakdown (e.g. for Samoans, Tongans, Cook Islands and Niueans) was not presented. As part of secondary analysis for the current study, such differences were investigated.

Specific subject areas that were investigated included:

- Respondents' own gambling behaviour (types, frequency, time spent, money spent)
- Opinions on the impacts of gambling on domains of life (e.g. physical/mental health, finances, relationships)
- Experiences of someone else's gambling.

Opinions on the impacts of gambling were compared for various measures of participation in active gambling.

As a proxy for problem gambling, respondents were categorised depending on whether they admitted to at least weekly participation in a mode of gambling other than Lotto and keno (categorised as 'frequent continuous gamblers'). Respondents who gambled less than once a week on a mode of gambling other than Lotto and keno were categorised as 'infrequent continuous gamblers'.

2.4.3 Gaming and betting activities survey data set

During 2006/07, the National Research Bureau (on behalf of the Health Sponsorship Council of New Zealand) conducted a national face-to-face survey of 1,973 New Zealanders examining gaming and betting activities (National Research Bureau Ltd, 2007).

For the current study the Pacific data subset was analysed to expand on the original report, with a focus on investigating the impact of gambling and problem gambling on Pacific families and communities in New Zealand.

Although the original report presented results for Pacific people, a more detailed breakdown (e.g. for Samoans, Tongans, Cook Islands and Niueans) was not presented. As part of secondary analysis for the current study, such differences were investigated. It should be noted, however, that Pacific respondent numbers were relatively low and breakdown by ethnicity was not possible in all cases.

Specific subject areas that were investigated included:

- Gambling participation
- Knowledge about gambling harm
- Responses to gambling harm.

2.4.4 Pacific Islands Families Study data set

The longitudinal Pacific Islands Families Study (PIF) began with a birth cohort (N=1,398) in the year 2000. It is a prospective study which aims to determine the pathways which lead to optimal health, development and social outcomes for Pacific children and their families. Data were collected from parents and children in phases as the children reached the ages of six weeks (baseline) and one, two, four, six and nine years. Fathers were included only at the one, two and six year phases.

Additional to analyses that have previously been conducted and reported to the Ministry of Health in relation to the Pacific Islands Families study (Bellringer, Abbott, Williams, & Gao, 2008; Bellringer, Taylor, Poon, Abbott, & Paterson, 2012), the aim of these analyses was to further explore gambling behaviours of participants of the PIF study with reference to the overall objectives of the current project. In particular, the focus was on gathering information about the impact that gambling may have had on various aspects of health and wellbeing for Pacific families and individuals.

The current project used data on gambling-related questions from all phases, together with other information covering a variety of aspects of the participants' daily lives. Very limited gambling-related questions were included at all phases of the study, with significantly more questions included at the six- and nine-year time points.

Summary statistics are provided as follows:

- Demographics (e.g. age, sex, ethnicity) of participants (mothers, fathers and children) at each measurement wave
- Tabulated summaries of gambling-related responses.

In particular, the research topics examined were:

1. Expansion of analysis of gambling behaviours of mothers and fathers at the Year 6 phase (cf: Bellringer et al., 2008) including associations with:
 - General health status
 - Responses to questions relating to physical activity
 - Religiosity
 - Rosenberg self-esteem scale (mothers only).
2. Expansion of analysis of gambling behaviours of mothers at the Year 9 phase (cf: Bellringer et al., 2012) including associations with:
 - Religiosity
 - Size of household
 - Financial hardship questions and stressful life events.
3. Expansion of analysis of gambling behaviours of nine-year old children at the Year 9 phase (cf: Bellringer et al., 2012) including:
 - Child Behaviour Checklist: Clinical-range internalising and externalising
 - Gambling behaviour of mothers in relation to child gambling: Preferred types, time spent and frequency
 - After-school activities and time use questions
 - Family cohesion.
4. A cohort-level longitudinal analysis of gambling behaviours as follows.
 - Scope: Mothers at 6-weeks and Years 1, 2, 4, 6 and 9; fathers at Years 1, 2 and 6
 - Response variables: Bet money in the past 12 months (Yes/No), usual expenditure.

Different analyses were performed at the Year 6 and Year 9 phases dependent on analyses already performed as part of the previous reports and also dependent on which variables were measured at each phase (not all questions were included at each data collection phase).

The aim of the longitudinal analysis was to explore the continuity/transience of gambling behaviour, i.e. to search for potential predictors of gambling uptake or cessation.

2.4.5 Data analysis

Analysis of each of the three data sets is described immediately before presentation of the results from the respective data set in sections 4.1, 4.2 and 4.3.

2.5 Focus groups

2.5.1 Recruitment

Focus groups were conducted with key Pacific stakeholders including gambling treatment providers, gambling venue staff, general community gamblers and non-gamblers⁴, current/ex-problem gamblers, significant others of problem gamblers and church leaders. The purpose

⁴ Prior to recruitment, potential participants were asked on what modes they gambled and the frequency of gambling so they could be categorised as gamblers or non-gamblers. Although some of the 'non-gambler' participants gambled, if their gambling frequency was less than monthly they were considered to be non-gamblers for the purpose of the focus groups.

of the focus groups was to elicit views on Pacific people's gambling (or non-gambling) in relation to Pacific culture, and the effects of gambling (and problem gambling) on Pacific families and communities. Recognising that Pacific people are a heterogeneous group, Samoan, Tongan and Cook Islands views⁵ were specifically sought, as were those of New Zealand born and island born young people (aged 18 to 24 years). The Consultation Group, in providing feedback on the study methodology, advised that the focus groups should contain a mix of ages (rather than being divided into youth and adults) to open up community dialogue. Additionally, although ethnic-specific focus groups were planned, during participant recruitment it became apparent that people were reluctant to participate if they were to be ethnically segregated. Thus, for each community participant focus group, the participant mix varied. Twelve focus groups were held in the Auckland region between 25 October and 18 November 2011. Table A details the composition and number of participants in each focus group.

The focus groups were facilitated by a Samoan researcher, with a co-facilitator present at all groups. The focus groups were digitally recorded for subsequent data transcription and analysis. At focus group 10, a Samoan translator was present to translate the facilitator's comments; the participants' discussion was in Samoan with the subsequent recording translated into English at the data transcription stage.

Table A: Composition and number of participants per focus group

Participant type	Number of participants												Total Nos.
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12	
Pacific gambling treatment provider staff									5				5
Pacific gambling venue staff						7							7
Samoan community gambler	1			1	1	1		2					6
Tongan community gambler		2	3		1	2							8
Cook Island community gambler			3			1		4			1		9
Current/ex problem gambler										6			6
Youth community gambler													
NZ born	2		1		3			1					7
Youth community gambler													
Island born				1	1			1					3
Samoan community non-gambler	2	1	1		4								8
Tongan community non-gambler		3	1			1					2		7
Cook Island community non-gambler				1				2			5		8
Significant other of problem gambler										5			5
Church Leader												5	5
Multiple/other Pacific community gambler	1			1									2
Youth community non-gambler NZ born	1			1	2						1		5
Youth community non-gambler Island born	2										1		3
Other Pacific community non-gambler		2				1							3
Total numbers	9	8	9	5	12	6	7	10	5	11	10	5	97

Participants were recruited as follows:

- Pacific gambling treatment provider staff: Via gambling treatment provider services in the Auckland area
- Pacific gambling venue staff: Via a casino
- Current/ex-problem gamblers and significant others of problem gamblers: Via gambling treatment provider services in the Auckland area

⁵ The scope of this project precluded more than three ethnic groups being specifically included in the focus groups.

- Community gamblers and non-gamblers, and church leaders: Via advertisements and/or announcements (verbal and written) in the central and South Auckland areas
 - Community centres, leisure centres, public libraries, gambling venues, community newspapers, churches, Pacific health organisations, Pacific radio, university campuses

On completion of each focus group, participants were given a \$30 petrol voucher as compensation for their time and travel.

2.5.2 Discussion topics

Focus groups were semi-structured to elicit detailed discussion around the following topics. The topics were identified from gaps in the literature, feedback and comments from the Consultation and Advisory Groups, and preliminary results from the secondary data set analyses. The topics were kept broad to elicit maximum discussion.

- Understanding what is meant by the term ‘gambling’
- Positive aspects and impacts of gambling specific to Pacific individuals, families and communities
- Negative aspects and impacts of gambling specific to Pacific individuals, families and communities
- Culture-specific (including gender roles) relationships with gambling participation.

2.5.3 Data analysis

A systematic qualitative analysis of similarities and differences in participants’ perceptions was conducted to interpret the data from the transcribed recordings in relation to the original research questions. Emerging trends and patterns were grouped according to themes. Responses were ordered into more specific categories for comparative purposes to determine possible cultural differences. A ‘picture’ of the impacts of gambling and problem gambling on Pacific families and communities emerged as the data analysis proceeded. Qualitative analyses were undertaken using NVivo (Version 9) software.

Participants had the opportunity to review draft transcripts for accuracy prior to analysis. No inaccuracies were reported.

2.6 Semi-structured individual interviews

2.6.1 Recruitment

Semi-structured individual interviews were conducted with Pacific general community gamblers and non-gamblers, current/ex-problem gamblers and significant others of problem gamblers. The purpose of the interviews was to allow for data to be gathered that expanded and/or clarified the information obtained from the focus groups. Thus, the topics covered in the interviews were tailored dependent on the responses gathered from the focus groups. Interviews were ethnic-specific for Samoan, Tongan and Cook Islands participants⁶. Fifteen

⁶ The scope of this project precluded more than three ethnic groups being specifically included in the individual interviews.

interviews were held in the Auckland region between 26 January and 15 February 2012. Table B details the participant composition of the interviews.

The semi-structured interviews were facilitated by a Samoan researcher. The interviews were digitally recorded for subsequent data transcription and analysis. At two interviews a Samoan translator was present to translate the facilitator's comments; the participants' discussion was in Samoan with the subsequent recording translated into English at the data transcription stage.

Table B: Composition of semi-structured interviews

Individual interviews	Samoan	Cook Islands	Tongan
1 - 3	Community gambler	Community gambler	Community gambler
4 - 6	Community youth gambler (18-24 years)	Community youth gambler (18-24 years)	Community youth gambler (18-24 years)
7 - 9	Current or ex-problem gambler	Current or ex-problem gambler	Current or ex-problem gambler
10 - 12	Community non-gambler	Community non-gambler	Community non-gambler
13 - 15	Significant other	Significant other	Significant other

Participants were recruited in the same manner as detailed in Section 2.5.1 for the focus groups. On completion of each interview, participants were given a \$40 petrol voucher as compensation for their time and travel.

2.6.2 Discussion topics

Interviews were semi-structured to elicit detailed discussion around:

- Importance of family in gambling or not gambling
- The role of gambling in Pacific families and communities
- Social/community pressures regarding gambling/not gambling
- Aspects of culture/identity that are protective against harmful gambling
- Aspects of culture/identity that are risk factors for harmful gambling
- Why Pacific people transition from gambling to problem gambling (and vice versa)
- Forms of gambling that may represent social capital and social connectedness in Pacific communities
- Help-seeking behaviours and knowledge and opinions of current services.

2.6.3 Data analysis

Data analysis was conducted in the same manner as detailed in Section 2.5.2 for the focus groups.



3. LITERATURE REVIEW

3.1 Introduction

Ethnicity is a social construct which is unstable, situational and subject to evolution over time. Callister (2004) reinforces this statement by showing the changes in definitions of ethnicity within the official statistics. What was once a sociological construct of ethnic classification externally defined as ‘race’ is now commonly referred to as self-defined ‘ethnicity’. This underlying notion, as Novitz (1989) argues, has allowed an encompassing of a fluid and dynamic collection of values or practices from diverse sources of discourse, into what is conceptualised as ethnic identity. Keddell (2006) noted that this helps to explain differences in identity outcomes, while normalising similar experiences and identity outcomes which may not align with cultural or racial predilections.

The Health Research Council of New Zealand uses the term ‘Pasifika’ to refer to indigenous groups from the Pacific Islands who are “linguistically, culturally and geographically distinctive from each other” (Health Research Council of New Zealand, 2003). Pacific people make up less than a tenth (6.9%) of the total New Zealand population. The largest Pacific ethnic group is represented by Samoan people (131,103), followed by Cook Islands (58,011), Tongan (50,478), Niuean (22,476), Fijian (9,864), Tokelauan (6,819), Tuvaluan (2,628) and other Pacific people (6,378) (Statistics New Zealand, 2006).

Migration from the Pacific has opened up the opportunity to engage in dialogue about defining a Pacific person in New Zealand. Anae and colleagues (2008) consider that rather than defining Pacific people as one generic ‘Pacific community’, Pacific people comprise people from different social positions and encompass a diversity of cultural backgrounds and experiences. This includes Pacific people from countries which are part of the wider Realm of New Zealand as well as those which are not. People from the Cook Islands, Niue and Tokelau belong to the former category and can migrate to New Zealand as citizens (New Zealand Constitution, 2012), whilst Pacific people from other nations such as Samoa and Tonga come to New Zealand under migrant status. The term ‘New Zealand born’ acknowledges how both Pacific descent and local upbringing combine into one shared cultural identity, recognised by many Pacific youth in New Zealand. According to the 2006 Census, of the Pacific population in New Zealand, 60% are currently New Zealand born and two-fifths of overseas born Pacific people are long-term migrants having been in New Zealand for more than 20 years (Statistics New Zealand, 2006).

As Pacific people in New Zealand comprise a variety of cultures it is unwise to classify them as one homogeneous group as they have their own distinct cultures and traditions and can have different motivations to gamble. For example for some Samoans, the reason for participating in some forms of gambling may be more than for winning money or for other social or emotional rewards; certain forms of gambling may be perceived to “infer a sense of status and elitism” (Perese, 2009). Conversely, a qualitative study of 50 Tongan community leaders and health professionals identified that some Tongans gamble based on an interpretation/belief in their dreams (misi) which in fact constitutes a win as a divine blessing (Guttenbeil-Po’uhila et al., 2004). In a more recent qualitative study of four ethnic groups including 58 Pacific participants it was reported that some Tongans gamble due to a belief that it is a quick way to make money and thus fulfil their dreams (Tse et al., 2012).

There appear to be increasing differences between New Zealand born and overseas born Pacific people. Sending overseas remittances is more common for migrant Pacific than for

those born in New Zealand (Fitzgerald, 1988; Macpherson, 1994). More significantly, New Zealand born Pacific people may now be a couple of generations removed from their country of origin and may have no, or very little, relationship with their island of origin. However, Perese (2009) asserts that New Zealand born Samoans, may still contribute to overseas remittances by financially assisting parents.

3.2 Gambling

Gambling is accepted as a legal and popular form of recreation in New Zealand culture. A recent national in-home health and lifestyles survey of 1,740 people aged 15 years and over reported that over four-fifths (81%) of respondents had participated in at least one gambling activity in the past year, with half participating in one (26%) or two (24%) activities, one fifth (18%) in three activities, and 14% in four or more activities. For Pacific respondents, the proportion gambling on at least one activity in the previous year was lower, at 70% (Gray, 2011).

The lower gambling participation rate for Pacific people was similar to that noted in previous studies. In the 2006/07 national New Zealand Health Survey, only 55% of Pacific respondents had gambled in the previous year, compared with 65% of the general population (Ministry of Health, 2009). In the same time period, the national Gaming and Betting Activities Survey reported that 71% of Pacific respondents had gambled in the past year compared with 82% of the general population (National Research Bureau Ltd, 2007). Lower Pacific participation rates of 50% were reported both in a study assessing the social impacts of gambling (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008) and at the nine-year data collection point of the longitudinal Pacific Islands Families study (Bellringer, Taylor, Poon, Abbott, & Paterson, 2012).

Despite the lower participation in gambling, however, Pacific people appear to be at substantially higher risk of developing problem gambling than other ethnicities apart from Maori. Nationally representative prevalence surveys conducted in 1991 and 1999 estimated that Pacific populations were over six times more likely to have problems than European/Pakeha populations (Abbott, 2001; Abbott & Volberg, 2000). They also indicated that whilst fewer Pacific people take part in gambling activities than the general population, a disproportionate number of those who do gamble have a higher expenditure than other population groups; a 'bimodal' distribution for gambling (Abbott, 2001; Abbott & Volberg, 2000). Abbott and Volberg (2000) hypothesised that the bimodal distribution could lead to a higher risk for developing gambling problems as those who gamble tend to have higher levels of involvement with continuous forms of gambling, are less likely to have experience with those forms of gambling, and can be experiencing stress associated with acculturation, unemployment or under-employment. Furthermore, Pacific people were less likely to have resolved their gambling problems than Europeans when they were re-interviewed seven years following the first assessment in 1991. This could indicate that the gambling problems experienced by Pacific people could be more persistent (Abbott, 2001), or it might indicate a reluctance to seek help (whether from formal or informal sources).

Results from the six- and nine-year data collection points in the Pacific Islands Families study also indicated a bimodal distribution for gambling with a low participation rate (in comparison to that expected by the general population) but with a high expenditure by those who did gamble (Bellringer, Abbott, Williams, & Gao, 2008; Bellringer et al., 2012).

The nationally representative New Zealand Health Survey conducted in 2002/03 confirmed the previous prevalence studies' findings of Pacific people being the most at-risk group for

developing gambling problems with a risk ratio of 4.5⁷ times more likely than European/Others (Ministry of Health, 2006). The higher risk continued to be noted in the 2006/07 New Zealand Health Survey which found Pacific people to be approximately four times⁸ more likely to be problem gamblers than the general population (Ministry of Health, 2009) and which also supported a bimodal pattern for gambling. The 2006/07 New Zealand Health Survey also indicated that a fifth of problem gamblers were of Pacific ethnicity whilst comprising only 5.3% of the total adult population.

Despite being at higher risk for developing gambling problems, very little empirical research has been conducted to establish why Pacific people are at greater risk, what protective factors could reduce the risk, or indeed why many Pacific people choose not to gamble at all. Additionally in most studies, due to limited sample size, Pacific data are examined as a homogeneous group and do not take into account the heterogeneous and diverse nature of the different Pacific cultures.

3.3 Cultural factors for gambling

As detailed above, there is a paucity of data to indicate why Pacific people gamble, or do not gamble. In their review of the role of culture in gambling and problem gambling, Raylu and Oei (2004) discussed three cultural variables in relation to gambling and problem gambling development: cultural values and beliefs, effects of acculturation, and attitudes towards seeking professional help when experiencing problems. They indicated that cultural beliefs and values can influence gambling behaviours and help-seeking attitudes. A negative cultural attitude towards help-seeking leads inevitably to likelihood of continued gambling and thus subsequent problem gambling development. They also indicate that there are no available empirical data to suggest whether successfully or unsuccessfully adapting to a new country leads to increased gambling and problem gambling.

The available literature on Pacific people's gambling has indicated that some motivations to gamble may be related to factors relating to church obligations, cultural obligations, and due to stresses of migration.

Church obligations

In a recent review of the literature, Perese (2009) noted the importance of the church and religion to Samoan people, dating back to the early 1800s when Christianity was introduced to Samoa. Churches were supported and provided for by local villagers with this tradition continuing into recent times via financial contributions, often achieved through popular fund raising activities such as housie (Perese, 2009). Similarly, since the arrival of Christianity, churches have been a central feature for Tongans and are particularly important for Tongan migrants in overseas countries, providing a place where Tongan culture can be re-affirmed and preserved (Ka'ili, 2005).

It would appear that fund raising through gambling is not considered gambling by Samoans and Tongans. Rather, fund raising for family, community and church are considered to be 'giving' by Samoans and not 'gambling'; the rationale being that the reason is to donate money rather than win money (Perese & Faleafa, 2000). Guttenbeil-Po'uhila and colleagues

⁷ The national prevalence surveys in 1991 and 1999 used the Revised South Oaks Gambling Screen (SOGS-R), the 2002/03 health survey used a non-validated problem gambling screen and the 2006/07 health survey used the Problem Gambling Severity Index. Thus, the results from the surveys are not directly comparable.

⁸ After adjusting for age.

(2004) point out that a Tongan perspective of gambling indicates that fund raising is seen as 'giving or fulfilling' social obligations.

A small qualitative study with 15 Pacific participants (as part of a larger study investigating why people gamble) also reported that gambling is considered an acceptable form of fund raising for churches (Tse et al., 2005); the gambling often takes the form of housie/bingo (Perese, Bellringer, Williams, & Abbott, 2009). This was further substantiated in the aforementioned recent qualitative study of four ethnic groups where it was reported that amongst Samoans, money was required for family and church obligations, and this was obtained via fund raising gambling activities (Tse et al., 2012).

Impacts of housie participation

Whilst there have been no studies which specifically investigate housie gambling in association with fund raising for the church, the Pacific Islands Families study reported that 60% of cohort children had played housie at nine years of age (with 11% playing for money) and that the housie participation was generally equally split between playing with family, playing with friends, and playing both with family and friends (Bellringer et al., 2012). This implies that housie is a common form of gambling within Pacific households and that everyone including children, participates in one form or another.

A nationally representative study of the assessment of the social impacts of gambling reported that playing housie was associated with better feelings about self for Pacific people (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008). This was the only positive association with gambling compared with numerous negative associations such as worse physical and mental health, and quality of life. The authors concluded that this may mean that there are insufficient resources available to Pacific people to counteract the negative consequences of gambling (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008). In another study comprising in-depth interviews with Samoans, housie participation as a church fund raising mechanism was viewed positively and was a form of collective well-being (Perese, 2009). This substantiates the previous study's finding of housie being associated with better feelings about self.

Cultural obligations and financial pressures

The previously mentioned small qualitative study with 15 Pacific participants and the more recent qualitative study of four ethnic groups reported that for some Pacific people one reason for gambling was to "meet traditional and familial obligations to family (close, extended or non-blood links), village, church and community" and for fa'alavelave (Tse et al., 2005, 2012). Fa'alavelave is a Samoan gift-giving obligation which is a common and traditional system of formal and informal exchange (often of money) for ceremonial events (Meleisea et al., 1987). The need to contribute to family requests for financial assistance is considered a constant and never-ending cycle in Pacific families (Anae et al., 2008). Providing financial support to other family members for family and village of origin events is also a cultural obligation (Cowley et al., 2004).

Gambling amongst Samoan and Tongan populations has been associated with gift giving (Guttenbeil-Po'uhila et al., 2004; Perese & Faleafa, 2000). At the first data collection point (six-weeks after birth of cohort child) in the previously mentioned Pacific Island Families study, mothers who reported taking part in traditional gift-giving events were found to be more likely to gamble, to be more likely to have weekly gambling expenditure in the upper quartile (\geq \$20), and were more likely to have received criticism for their gambling than mothers who did not take part in gift-giving customs (Bellringer, Perese, Abbott, & Williams, 2006). This finding suggests that mothers taking part in gift-giving customs may have a

greater propensity to gamble and thus potentially have a greater risk for future problem development.

When examined two years later, mothers who reported gambling were significantly less likely to report participating in gift-giving events (0.57 times lower) than mothers who did not gamble. However, mothers who reported a weekly gambling expenditure of \$20 or more were 1.64 times more likely to participate in gift-giving activities than mothers whose weekly expenditure was less than \$20 (Perese, Gao, Erick, Macpherson, Cowley-Malcolm, & Sundborn, 2011). This continued association, over a two-year period, between higher expenditure on gambling and gift-giving gives strength to the possibility that partaking in gift-giving activities may pose a risk for future problem gambling development.

Perese (2009) reported that there were differences between some New Zealand born Samoans and older Samoans in their relationship between fa'alavelave and gambling. Perese reported that for some older Samoans, gambling was motivated by a desire to win money to help pay for fa'alavelave. However, for some younger New Zealand born Samoans, instead of influencing the development of gambling, involvement in fa'alavelave could pre-empt and hide problematic gambling. For example, if the gambler gifted money to their parents, the parents might think that the person had money to spare and thus could not be a gambler.

A couple of studies have reported the pawning of Tongan cultural goods because of gambling (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008; Guttenbeil-Po'uhila et al., 2004). The loss of these cultural goods affects a family's ability to meet community obligations. This can cause shame and a loss of cultural standing and disrupts the cycle/flow (giving and receiving) of the gift-giving system. Participants in the study by Guttenbeil-Po'uhila et al. (2004) suggested that there has been an increase in Tongan pawn shops and money lenders as a result of gambling. This may have affected the ease with which Tongan goods can be pawned, as Tongan businesses are more willing to accept crafts as security.

Migration stressors to gamble

Guttenbeil-Po'uhila and colleagues (2004) identified that some Tongan men would gamble at Totalisator Agency Board (TAB) outlets to escape from the isolation experienced upon migration to New Zealand. Similarly, the previously mentioned study of four ethnic groups reported that Samoans and Tongans gamble to escape from relationship problems, as a stress release and to relieve boredom (i.e. they have too much free time). That study also reported poverty and low socio-economic status to be a trigger for Pacific people gambling (Tse et al., 2012). These findings corroborate Clarke et al. (2007) who indicated, in their review of the literature, that several factors such as "social isolation, disconnectedness, boredom, socio-cultural ambivalence, financial hardship, under-employment and the need to participate in acceptable recreational activities" have been identified as triggering factors for problematic gambling amongst migrant and refugee groups.

There have been changes in Tongan culture to accommodate gambling now that it has become a normal activity, particularly in relation to cultural sanctions around women. Guttenbeil-Po'uhila and colleagues (2004) reported that it is now commonplace to see Tongan women (especially older Tongan women) at places such as bars, pubs and casinos, where once Tongan women had little options other than church and home. Gambling in a non-church environment is acceptable for Tongan women if they go in groups (Guttenbeil-Po'uhila et al., 2004).

Cultural factors associated with help-seeking/treatment services

The existence of a negative cultural attitude to help-seeking for gambling problems has not yet been explored. However, Perese and Faleafa (2000) and Guttenbeil-Po'uhila and colleagues (2004) noted that many in the Samoan and Tongan communities respectively, were not aware of how to access help services. This was also true for Tongan church workers who reported often being approached for help by church members, but did not know how to find help. Tongan participants in the study by Guttenbeil-Po'uhila et al. (2004) suggested that services need to be coordinated and that all community, health and church leaders need to work together in the community.

Whilst the aforementioned studies were conducted prior to the availability of Pacific-specific treatment services in New Zealand, which did not appear until the mid-2000s, it is evident from current presentations at treatment services that Pacific people are under-represented in relation to the prevalence of Pacific problem gamblers. For instance, in the year 2009/10, nine percent of all clients receiving face-to-face interventions (any type of intervention) and 10% of clients calling the gambling helpline in 2010 were of Pacific ethnicity (Ministry of Health, 2011). Although the percentage of Pacific people seeking help has increased over the past few years, 14% of current probable and pathological gamblers were identified as being of Pacific ethnicity in the last national prevalence survey conducted in 1999 (Abbott, & Volberg, 2000). However, as this prevalence survey is over a decade old, prevalence may have altered in the changing gambling environment though other nationally representative surveys (e.g. the aforementioned New Zealand Health Surveys) have indicated continued substantially higher risk of problem gambling for Pacific peoples. Another national New Zealand gambling prevalence study is currently underway and will provide up-to-date prevalence and incidence rates of problem gambling for the New Zealand population, including Pacific people.

3.4 General risk factors for problem gambling

There are, of course, numerous other aspects unrelated to Pacific culture and traditions that affect gambling behaviour and that may be risk or protective factors for the development of problem gambling amongst Pacific people and indeed any population groups in general. These may be situational factors such as availability of gambling, accessibility to gambling opportunities/outlets, and exposure (amount of) to gambling. They can also relate to individual characteristics such as demographic factors (e.g. age, gender, socio-economic status), personality factors (e.g. arousal/sensation seeking and impulsivity), type of gambling activity (continuous forms vs. non-continuous forms), and cognitive variables (e.g. illusion of control, gambler's fallacy and chasing losses). As these factors are general in nature and not Pacific-specific, only those discussed in New Zealand research are touched upon briefly below. However, recent in-depth review and discussion around these factors can be found elsewhere (e.g. Abbott, 2007; Czerny, Koenig, & Turner, 2008; Toneatto, & Nguyen, 2007; Zangeneh, Grunfeld, & Koenig, 2008).

Situational factors

People who live in neighbourhoods with close geographical access to gambling venues tend to have more opportunity to gamble and thus are more likely to be gamblers or problem gamblers compared with those who live in neighbourhoods furthest from gambling venues (Welte, Wiczorek, Barnes, Tidwell, & Hoffman, 2004; Welte, Wiczorek, Barnes, & Tidwell, 2006).

In New Zealand, electronic gaming machines (EGMs), TABs and other gambling venues are more widespread in socio-economically disadvantaged areas than in the more affluent areas

(Ministry of Health, 2006; Pearce et al., 2008; Wheeler et al., 2006). The median travel distance between the closest gambling outlets in the least deprived areas is about twice the distance in the most deprived areas, and the median number of gambling outlets is highest in the most deprived areas (Pearce et al., 2008).

Pacific people generally reside in areas of higher deprivation/lower socio-economic status. The 2006 census identified that 97% of Pacific people lived in urban areas with 67% of the population residing in the Auckland area (Statistics New Zealand, 2006; 2007a, p9); the Auckland District Health Board identified that 65% of its Pacific population lived in the three most deprived deciles (Auckland District Health Board, 2001). It has been estimated that people who live in the most deprived quintile of neighbourhoods are at least three times more likely to be problem gamblers than people living in any other deprivation quintiles (Ministry of Health, 2006). As previously mentioned, the 2006/07 New Zealand Health Survey reported Pacific people to be approximately four times more likely to be problem gamblers than the general population (Ministry of Health, 2009). They are affected to a greater extent by the harm caused by their own as well as close family members' gambling (Ministry of Health, 2009). Given that more gambling venues and, thus, opportunities to gamble are located in the areas of higher deprivation and that these are the areas where a majority of the Pacific population lives, this could be a contributory factor to Pacific people being at higher risk of developing problem gambling than other populations.

Individual characteristics

Age, gender and ethnicity

In general, males, young adults (particularly those aged less than thirty years) and people from some minority ethnic groups have been reported to be more likely to develop problem gambling than other population groups (Bondolfi, Osiek, & Ferrero, 2000; Ministry of Health, 2006, 2008, 2009; Shinogle et al., 2011; Volberg, Abbott, Rönnerberg, & Munck, 2001). Immigrants to the country of study also have a higher risk of developing problem gambling (Bellringer, Perese, Abbott, & Williams, 2006; Volberg et al., 2001).

Males tend to start gambling at a younger age and are at a higher risk of developing problem gambling as young adults in comparison with females who tend to start gambling when they are older, and who develop, and progress into, problem gambling at a faster rate in middle-age (Afifi, Cox, Martens, Sareen, & Enns, 2010; Grant & Kim, 2004; Ibáñez, Blanco, Moreryra, & Sáiz-Ruiz, 2003; Tavares et al., 2003; Tavares, Zilberman, Beites, & Gentil, 2001). These findings have also been reported for youth gambling participation in New Zealand, in a study with secondary analyses of existing youth data sets and additional qualitative key informant interviews (Rossen, Butler, & Denny, 2011).

Marital status

There are contradictory findings when attempting to determine associations between gambling/problem gambling and marital status. For instance, Bondolfi and colleagues (2000) found evidence that being married is associated with a higher risk of having a gambling problem, while other studies indicate that non-partnered/single individuals are more likely to be problem gamblers (Volberg et al., 2001). Amongst Pacific people, results from the six-year data collection point of the previously mentioned Pacific Islands Families study indicated that mothers who were partnered were more likely to gamble than non-partnered mothers (Bellringer et al., 2006). Longitudinal analysis between the six- and nine-year data collection points of the same study indicated that a change in marital status for mothers from partnered to non-partnered was associated with statistically significant lower odds for gambling (0.43 times) compared with mothers whose marital status remained stable; an association with problem gambling was not investigated (Bellringer et al., 2012).

Economic status

Income level does not appear to be a good measure for predicting gambling/problem gambling risk based on inconsistent results which indicate increased risk associated both with lower (Afifi et al., 2010; Shinogle et al., 2011) and higher (Bondolfi et al., 2000; Potenza et al., 2001) income. In recent studies, measures that reflect relative economic status such as the NZDep (Salmond & Crampton, 2001) and NZiDep (Salmond, Crampton, King, & Waldegrave, 2005) which indicate socio-economic deprivation for individuals, and the Jensen Index (Jensen, 1988) which measures equivalent household income based on number of adults and children in the household, are being applied (Gray, 2011; Pearce, Mason, Hiscock, & Day, 2008; Wheeler, Rigby, & Huriwai, 2006). Gray (2011) noted that people with a high household equivalised income are more likely to participate in three or more gambling modes and to be at moderate risk/problem gamblers.

Smoking and excessive alcohol consumption

Current tobacco smoking and excessive alcohol consumption have been reported in numerous studies to be directly associated with problem gambling (e.g. Fong et al., 2011; French, Maclean, & Ettner, 2008; Griffiths, Wardle, Orford, Sproston, & Erens, 2010). These associations have also been noted in New Zealand studies (e.g. Bellringer, Abbott, Williams, & Gao, 2008; Goodyear-Smith, Arroll, Kerse, Sullivan, Coupe, Tse, Shepherd, Rossen, & Perese, 2006; Ministry of Health, 2009).

3.5 Research gaps

As previously detailed, there is scant research specifically relating to Pacific people and gambling and examining the impacts of gambling (positive and negative) on Pacific communities, families and individuals. Most of the research to date has been at the homogeneous 'Pacific' population level. The Pacific-specific studies have generally been qualitative in nature and focused on Samoan or Tongan populations, apart from the longitudinal Pacific Islands Families study which has examined gambling within a familial context with sufficient sample sizes for Cook Islands and Niuean data to also be examined. Whilst acknowledging there is limited information in the following areas, there remain gaps in knowledge and understanding of:

- The impacts of gambling on significant others
- The impacts of gambling on communities
- Why most Pacific people do not gamble
- Pacific people's attitudes to gambling
- Why there are Pacific ethnic/cultural differences in gambling participation (e.g. cultural factors, religion)
- Gender differences in Pacific gambling participation
- Socio-economic and environmental factors associated with gambling participation
- The relationship between gambling and acculturation stress
- The role of 'money economy' and 'gift economy'
- Why Pacific people transition from gambling to problem gambling (and vice versa)
- The intangible costs of Pacific people's problem gambling
- The key risk factors for Pacific people developing problem gambling
- The key protective factors against Pacific people developing problem gambling
- Help-seeking behaviours of Pacific people.

3.6 Conclusion

This literature review has shown a paucity of research around Pacific people and gambling, particularly from an ethnic-specific context. Of note is the lack of Cook Islands specific research, despite the Cook Islands population being the second largest Pacific population in New Zealand.

Recreational gambling is popular; however, a proportion of people experience negative impacts from problem gambling. Previous research has indicated that Pacific people are at significantly higher risk for developing problem gambling and also appear to be under-utilising gambling help services than other ethnicities.

To further understand why Pacific people do, or do not gamble, and why they are at high risk for developing problem gambling requires that gambling is viewed through a Pacific cultural lens in order to understand the impacts of gambling in a New Zealand Pacific context. This is the aim of the current study.



4. RESULTS: SECONDARY DATA SET ANALYSES

This chapter details secondary analyses from the three data sets:

- *Assessment of the social impacts of gambling in New Zealand* (2008) Centre for Social and Health Outcomes Research and Evaluation (SHORE), Massey University
- *Gaming and betting activities survey: New Zealanders' knowledge, views and experiences of gambling and gambling-related harm* (2007) Health Sponsorship Council of New Zealand
- *Pacific Islands Families Study* (2000 to 2009) Centre for Pacific Health and Development Research, AUT University.

The data presented in Sections 4.1, 4.2 and 4.3 expand on the original reports, in particular focusing on the Pacific data for the first two data sets which were of national populations.

4.1 Social impacts of gambling in New Zealand data set

This section details secondary analyses of the Pacific subset of data from the 'Social impacts of gambling in New Zealand' study conducted by Massey University (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008) and expanding on the original analyses. The total survey sample size was 7,010 respondents aged from 15 to 80 years. Full methodological details are available in the original report (Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki, 2008).

For the analyses detailed in the current report, the original Pacific data subset of 1,031 respondents was analysed and categorised into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean and Other Pacific (i.e. those not in the named categories or who identified with multiple ethnic groups).

The respondents were also categorised into four groups with reference to their gambling participation level in the past 12 months:

- Non-gamblers: Had not participated in any gambling activity
- Lotto/keno only: Had only participated in Lotto or keno (not including Instant Kiwi)
- Infrequent continuous: Had participated in at least one continuous gambling mode (any mode other than Lotto and keno, including Instant Kiwi) less frequently than once a week
- Frequent continuous: Had participated in at least one continuous gambling mode (any mode other than Lotto and keno, including Instant Kiwi) at least once a week.

Specific subject areas that were investigated included:

- Respondents' own gambling behaviour (types, frequency, time spent, money spent)
- Opinions on the impacts of gambling on domains of life (e.g. physical/mental health, finances, relationships)
- Experiences of someone else's gambling.

The original study used sample weighting factors to adjust results to the wider population. Weighting factors were not used in the current secondary analyses as they did not distinguish between Pacific ethnicities (e.g. Samoans vs. Tongans); they only weighted Pacific as a whole versus other major ethnic groups. Thus weighted and un-weighted results would be much the same when comparing the Pacific ethnicities with each other. The distribution of weights was also similar across categorisations by age and gender. Thus, the results presented in the

current report are broadly representative of the wider Pacific population. It should be noted that that some small amount of bias may be present due to not using the weighting factors; however, this is unlikely to alter any of the conclusions.

Full tables of data to support the figures presented in this section are detailed in Appendix 4.

4.1.1 Participant characteristics

Socio-demographic characteristics of the Pacific subsample are presented in Table 1.

No substantial difference between the ethnicities was noted for age, marital status or personal income; a large majority (88%) of participants were aged between 18 and 64 years, and a smaller majority (58%) were married. Half (50%) were in the lowest income bracket of up to \$30,000 per annum before tax.

There was a relatively equal distribution of male and female participants for each Pacific ethnicity apart from Niueans who were disproportionately female⁹ (61% female vs. 39% male). Niueans also differed from the other Pacific groups in relation to highest educational qualification with an apparent overall higher level of education; 37% reported a university or professional level qualification. For the other ethnicities, high school education was the highest level attained for the largest percentage of participants (38% to 51%).

Table 1: Socio-demographic characteristics

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Sex												
Female	171	(54)	105	(50)	135	(54)	56	(61)	89	(55)	556	(54)
Male	146	(46)	105	(50)	114	(46)	36	(39)	74	(45)	475	(46)
Marital status												
Divorced	23	(7)	12	(6)	15	(6)	6	(7)	8	(5)	64	(6)
Single	102	(32)	75	(36)	98	(40)	30	(33)	65	(40)	370	(36)
Married	189	(60)	121	(58)	135	(54)	56	(61)	89	(55)	590	(58)
Age group (years)												
15 - 17	19	(6)	19	(9)	27	(11)	5	(5)	18	(11)	88	(9)
18 - 35	143	(45)	110	(52)	88	(35)	43	(47)	78	(48)	462	(45)
36 - 64	144	(45)	77	(37)	124	(50)	40	(43)	63	(39)	448	(43)
65+	11	(3)	4	(2)	10	(4)	4	(4)	4	(2)	33	(3)
Highest qualification												
None	34	(11)	28	(14)	57	(24)	13	(14)	26	(17)	158	(16)
High school	153	(51)	95	(48)	96	(41)	28	(31)	60	(38)	432	(44)
Trade/technical certificate	45	(15)	32	(16)	39	(16)	16	(18)	24	(15)	156	(16)
University/professional	69	(23)	44	(22)	45	(19)	34	(37)	46	(29)	238	(24)
Personal income (before tax)												
Up to \$30,000	121	(46)	93	(58)	93	(48)	31	(40)	66	(55)	404	(50)
\$31,000 - \$40,000	47	(18)	25	(16)	32	(16)	17	(22)	11	(9)	132	(16)
\$41,000 - \$50,000	39	(15)	15	(9)	28	(14)	15	(19)	23	(19)	120	(15)
Over \$50,000	54	(21)	26	(16)	42	(22)	15	(19)	21	(17)	158	(19)

4.1.2 Gambling behaviour

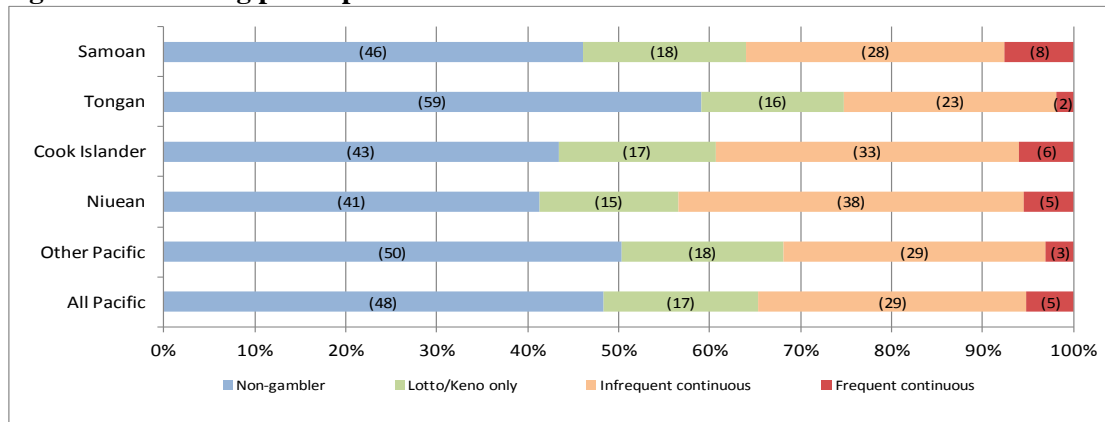
Gambling participation

Significant variation in gambling participation by ethnic group was noted ($p=0.018$). A slightly higher percentage of Tongans were non-gamblers, compared to other ethnicities (59%; $n=124$ vs. 41-50%). The Tongan and Other Pacific groups had low percentages (2%;

⁹ Statistics New Zealand reported that in 2006 the gender balance of Niueans was 49% male and 51% female, which was similar to the total Pacific population (Statistics New Zealand, 2007b: p.6). Therefore, the Niuean sample analysed in the secondary analyses presented here is not necessarily representative of the Niuean population due to the slight female gender bias in respondents.

n=4 and 3%; n=5 respectively) for frequently participating in continuous forms of gambling (all forms other than Lotto and keno) compared with the other ethnic groups (5% to 8%) (Figure 1).

Figure 1: Gambling participation

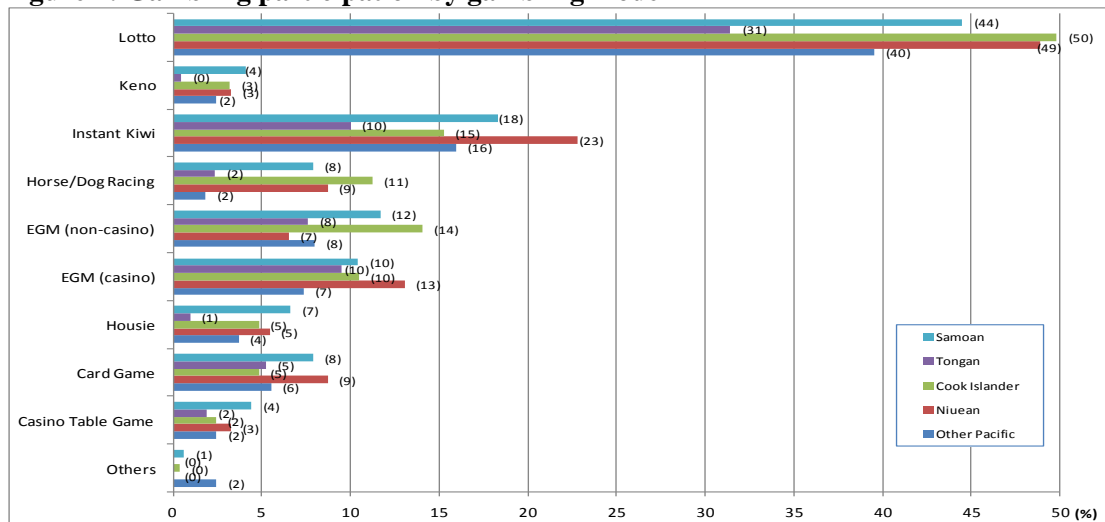


Gambling modes

Lotto was the most popular form of gambling for all ethnicities, followed by Instant Kiwi. A lower percentage of Tongans participated in Lotto (31%; n=66) and Instant Kiwi (10%; n=21) than the other ethnicities, with the highest Lotto participation by Cook Islands participants (50%; n=124) and Niuean participants (49%; n=45) and the highest Instant Kiwi participation by Niueans (23%; n=21).

Participation in electronic gaming machines (casino and non-casino) was substantially lower, ranging from seven percent to 14% with no major ethnic differences noted. The other forms of gambling were participated in by less than 10% of respondents. The most notable difference between participation for the ethnicities in these other forms of gambling is again that generally a lower percentage of Tongans participated than the other groups, for example in keno, horse/dog racing and housie (Figure 2).

Figure 2: Gambling participation by gambling mode

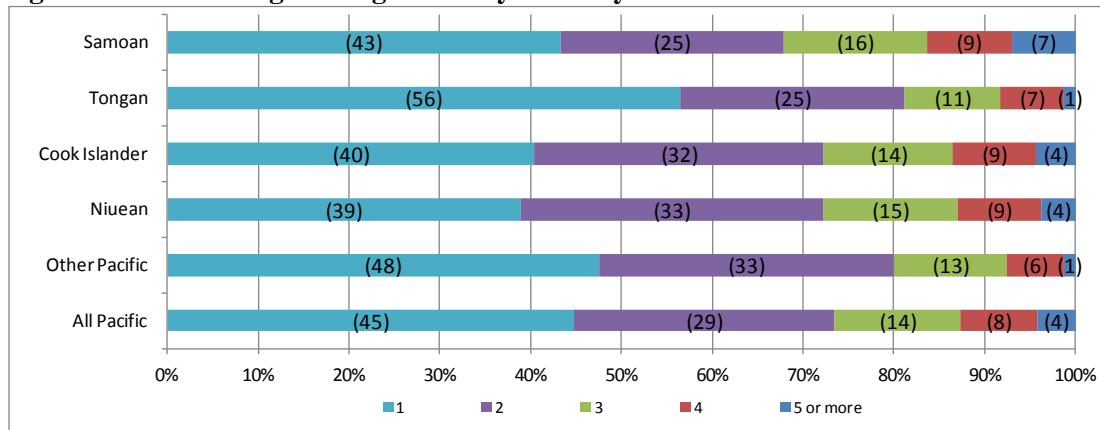


Number of gambling modes

Of the participants who gambled, a higher percentage of Tongans participated in only one mode of gambling compared with the other ethnicities (56%; n=48 vs. 39% to 48%); similarly

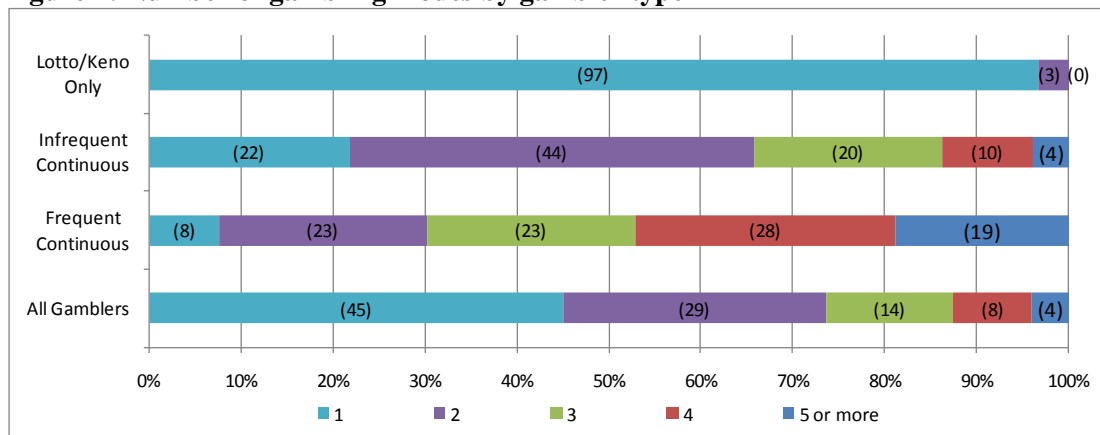
this was reflected by the lower percentage of Tongans participating in three or more gambling modes compared with the other ethnicities (19%; n=16 vs. 28% to 32%). The Other Pacific group had a similar percentage participating in three or more forms of gambling to Tongans (20%; n=16) (Figure 3).

Figure 3: Number of gambling modes by ethnicity



When examined by gambler type, it was apparent that gamblers who only participated in Lotto/keno were more likely to participate in one mode (97%; n=170) with three percent (n=6) participating in both Lotto and keno. A majority of gamblers who participated infrequently on continuous forms of gambling participated in one or two modes (66%; n=200), whilst gamblers who participated frequently on continuous forms were more likely to participate in multiple modes; only eight percent (n=4) participated in only one mode (Figure 4).

Figure 4: Number of gambling modes by gambler type



4.1.3 Gambling frequency

There were no major ethnic differences in gambling frequency on each of the modes of gambling. A majority of participants had never gambled on each of the modes examined, ranging from 51% of Cook Islands/Niueans for Lotto to 99.5% of Tongans for keno. It was very rare for any mode of gambling to be participated in daily, with participation generally being less than monthly or one to three times per month. Lotto was the exception with a higher proportion playing one to six times per week compared with other modes (Table 2).

Table 2: Gambling frequency by mode and ethnicity

	Samoaan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Lotto												
Never	176	(56)	144	(69)	125	(51)	47	(51)	98	(61)	590	(58)
Less than monthly	44	(14)	29	(14)	44	(18)	13	(14)	29	(18)	159	(16)
1-3 times per month	48	(15)	20	(10)	38	(15)	17	(18)	18	(11)	141	(14)
1-6 times per week	48	(15)	16	(8)	39	(16)	15	(16)	16	(10)	134	(13)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Keno												
Never	304	(96)	209	(100)	241	(98)	89	(97)	159	(98)	1002	(97)
Less than monthly	4	(1)	0	(0)	2	(1)	3	(3)	3	(2)	12	(1)
1-3 times per month	6	(2)	1	(0)	3	(1)	0	(0)	0	(0)	10	(1)
1-6 times per week	2	(1)	0	(0)	0	(0)	0	(0)	1	(1)	3	(0)
At least daily	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	1	(0)
Instant Kiwi												
Never	259	(82)	189	(90)	211	(85)	71	(77)	137	(84)	867	(84)
Less than monthly	31	(10)	11	(5)	25	(10)	9	(10)	16	(10)	92	(9)
1-3 times per month	22	(7)	9	(4)	8	(3)	9	(10)	8	(5)	56	(5)
1-6 times per week	5	(2)	1	(0)	4	(2)	3	(3)	1	(1)	14	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)	1	(0)
Horse/Dog Racing												
Never	292	(92)	205	(98)	221	(89)	84	(91)	160	(98)	962	(93)
Less than monthly	13	(4)	4	(2)	17	(7)	3	(3)	1	(1)	38	(4)
1-3 times per month	8	(3)	1	(0)	6	(2)	3	(3)	2	(1)	20	(2)
1-6 times per week	3	(1)	0	(0)	5	(2)	2	(2)	0	(0)	10	(1)
At least daily	1	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(0)
EGM (non-casino)												
Never	280	(88)	194	(92)	214	(87)	86	(93)	150	(92)	924	(90)
Less than monthly	23	(7)	10	(5)	16	(7)	4	(4)	8	(5)	61	(6)
1-3 times per month	11	(3)	3	(1)	11	(4)	2	(2)	3	(2)	30	(3)
1-6 times per week	3	(1)	3	(1)	5	(2)	0	(0)	2	(1)	13	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
EGM (casino)												
Never	283	(90)	190	(90)	222	(90)	80	(87)	151	(93)	926	(90)
Less than monthly	27	(9)	16	(8)	22	(9)	8	(9)	12	(7)	85	(8)
1-3 times per month	4	(1)	3	(1)	3	(1)	3	(3)	0	(0)	13	(1)
1-6 times per week	2	(1)	1	(0)	1	(0)	1	(1)	0	(0)	5	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Housie												
Never	296	(94)	208	(99)	237	(95)	87	(95)	157	(96)	985	(96)
Less than monthly	9	(3)	1	(0)	7	(3)	4	(4)	3	(2)	24	(2)
1-3 times per month	2	(1)	1	(0)	4	(2)	0	(0)	1	(1)	8	(1)
1-6 times per week	9	(3)	0	(0)	1	(0)	1	(1)	2	(1)	13	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Card Game												
Never	292	(92)	199	(95)	237	(95)	84	(91)	154	(94)	966	(94)
Less than monthly	14	(4)	7	(3)	9	(4)	6	(7)	5	(3)	41	(4)
1-3 times per month	6	(2)	4	(2)	1	(0)	1	(1)	4	(2)	16	(2)
1-6 times per week	5	(2)	0	(0)	2	(1)	1	(1)	0	(0)	8	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Casino Table Game												
Never	302	(96)	206	(98)	242	(98)	89	(97)	159	(98)	998	(97)
Less than monthly	12	(4)	4	(2)	5	(2)	1	(1)	4	(2)	26	(3)
1-3 times per month	1	(0)	0	(0)	1	(0)	1	(1)	0	(0)	3	(0)
1-6 times per week	1	(0)	0	(0)	0	(0)	1	(1)	0	(0)	2	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Others												
Never	315	(99)	209	(100)	248	(100)	92	(100)	159	(98)	1023	(99)
Less than monthly	2	(1)	0	(0)	0	(0)	0	(0)	3	(2)	5	(0)
1-3 times per month	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)	1	(0)
1-6 times per week	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	1	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)

When examined by gambler type, it was noted that a greater percentage of gamblers who participated frequently on continuous modes gambled more often on all modes of gambling than gamblers who participated infrequently on continuous modes (Table 3).

Table 3: Gambling frequency by mode and gambler type

	Non-gamblers		Lotto/Keno Only		Infrequent Continuous		Frequent Continuous		All	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Lotto										
Never	497	(100)	1	(1)	81	(27)	11	(21)	590	(58)
Less than monthly	0	(0)	68	(40)	83	(27)	8	(15)	159	(16)
1-3 times per month	0	(0)	55	(32)	75	(25)	11	(21)	141	(14)
1-6 times per week	0	(0)	48	(28)	63	(21)	23	(43)	134	(13)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Keno										
Never	498	(100)	169	(97)	289	(95)	46	(87)	1002	(97)
Less than monthly	0	(0)	2	(1)	7	(2)	3	(6)	12	(1)
1-3 times per month	0	(0)	2	(1)	6	(2)	2	(4)	10	(1)
1-6 times per week	0	(0)	1	(1)	0	(0)	2	(4)	3	(0)
At least daily	0	(0)	0	(0)	1	(0)	0	(0)	1	(0)
Instant Kiwi										
Never	498	(100)	176	(100)	170	(56)	23	(43)	867	(84)
Less than monthly	0	(0)	0	(0)	86	(28)	6	(11)	92	(9)
1-3 times per month	0	(0)	0	(0)	47	(16)	9	(17)	56	(5)
1-6 times per week	0	(0)	0	(0)	0	(0)	14	(26)	14	(1)
At least daily	0	(0)	0	(0)	0	(0)	1	(2)	1	(0)
Horse/Dog Racing										
Never	498	(100)	176	(100)	252	(83)	36	(68)	962	(93)
Less than monthly	0	(0)	0	(0)	34	(11)	4	(8)	38	(4)
1-3 times per month	0	(0)	0	(0)	18	(6)	2	(4)	20	(2)
1-6 times per week	0	(0)	0	(0)	0	(0)	10	(19)	10	(1)
At least daily	0	(0)	0	(0)	0	(0)	1	(2)	1	(0)
EGM (non-casino)										
Never	498	(100)	176	(100)	222	(74)	28	(53)	924	(90)
Less than monthly	0	(0)	0	(0)	55	(18)	6	(11)	61	(6)
1-3 times per month	0	(0)	0	(0)	24	(8)	6	(11)	30	(3)
1-6 times per week	0	(0)	0	(0)	0	(0)	13	(25)	13	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
EGM (casino)										
Never	498	(100)	176	(100)	220	(73)	32	(60)	926	(90)
Less than monthly	0	(0)	0	(0)	71	(24)	14	(26)	85	(8)
1-3 times per month	0	(0)	0	(0)	11	(4)	2	(4)	13	(1)
1-6 times per week	0	(0)	0	(0)	0	(0)	5	(9)	5	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Housie										
Never	498	(100)	176	(100)	274	(90)	37	(70)	985	(96)
Less than monthly	0	(0)	0	(0)	21	(7)	3	(6)	24	(2)
1-3 times per month	0	(0)	0	(0)	8	(3)	0	(0)	8	(1)
1-6 times per week	0	(0)	0	(0)	0	(0)	13	(25)	13	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Card Game										
Never	498	(100)	176	(100)	254	(84)	38	(72)	966	(94)
Less than monthly	0	(0)	0	(0)	37	(12)	4	(8)	41	(4)
1-3 times per month	0	(0)	0	(0)	13	(4)	3	(6)	16	(2)
1-6 times per week	0	(0)	0	(0)	0	(0)	8	(15)	8	(1)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Casino Table Game										
Never	498	(100)	176	(100)	277	(92)	47	(89)	998	(97)
Less than monthly	0	(0)	0	(0)	23	(8)	3	(6)	26	(3)
1-3 times per month	0	(0)	0	(0)	2	(1)	1	(2)	3	(0)
1-6 times per week	0	(0)	0	(0)	0	(0)	2	(4)	2	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Others										
Never	497	(100)	176	(100)	298	(98)	52	(98)	1023	(99)
Less than monthly	0	(0)	0	(0)	5	(2)	0	(0)	5	(0)
1-3 times per month	0	(0)	0	(0)	1	(0)	0	(0)	1	(0)
1-6 times per week	0	(0)	0	(0)	0	(0)	1	(2)	1	(0)
At least daily	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)

Time spent on a typical gambling occasion

All participants (n=357) who gambled on continuous modes (i.e. excluding non-gamblers and Lotto/keno only gamblers) were asked about their time spent on a typical gambling occasion.

No major ethnic differences were noted for time spent gambling on a typical occasion for Instant Kiwi, horse/dog racing, housie, card games and casino table games. Overall, the majority of Instant Kiwi gamblers (94%; n=153) and approximately half the horse/dog racing gamblers (49%; n=33) participated for less than 15 minutes whilst the majority of housie gamblers (89%; n=40) participated for one to four hours. The majority of card game participants gambled for either one to four hours (42%; n=27) or four to nine hours (41%; n=26). Approximately half (48%; n=15) of the casino table game gamblers also participated in typical sessions lasting one to four hours (Table 4).

Ethnic differences were noted amongst respondents who participated in electronic gaming machine gambling. Overall, 19% (n=20) of respondents reported participating in non-casino electronic gaming machines for typical durations of less than 15 minutes, one-quarter (24%; n=26) reported typical participation of 30 to 59 minutes, and over one-third (36%; n=39) reported typical participation of one to four hours. However, almost half the Samoan respondents (49%; n=18) reported participating for one to four hours, whilst Cook Islands and Other Pacific respondents were more evenly split between 30 to 59 minutes and one to four hours (31%/40% Cook Islands, 38%/31% Other Pacific). For casino electronic gaming machines, about two-fifths (42%; n=42) overall participated for one to four hours on a typical occasion. However, Niuean respondents showed a slightly different profile with 17% (n=2) participating for this period of time and 33% (n=4) participating for four to nine hours (Table 4).

However, as sample sizes were small for all groups apart from Instant Kiwi participants, these findings should be treated with caution.

Table 4: Time spent on a typical occasion by mode and ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Instant Kiwi												
Less than 15mins	53	(91)	20	(95)	37	(97)	19	(95)	24	(96)	153	(94)
15 - 29 minutes	2	(3)	1	(5)	1	(3)	0	(0)	0	(0)	4	(2)
30 - 59 minutes	3	(5)	0	(0)	0	(0)	1	(5)	0	(0)	4	(2)
1 - 4 hours	0	(0)	0	(0)	0	(0)	0	(0)	1	(4)	1	(1)
4 - 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Horse/Dog Racing												
Less than 15mins	10	(42)	2	(40)	17	(61)	3	(38)	1	(33)	33	(49)
15 - 29 minutes	2	(8)	1	(20)	2	(7)	0	(0)	0	(0)	5	(7)
30 - 59 minutes	1	(4)	0	(0)	4	(14)	2	(25)	0	(0)	7	(10)
1 - 4 hours	5	(21)	0	(0)	3	(11)	2	(25)	2	(67)	12	(18)
4 - 9 hours	6	(25)	2	(40)	2	(7)	1	(13)	0	(0)	11	(16)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
EGM (non-casino)												
Less than 15mins	6	(16)	4	(25)	4	(11)	3	(50)	3	(23)	20	(19)
15 - 29 minutes	5	(14)	4	(25)	5	(14)	2	(33)	0	(0)	16	(15)
30 - 59 minutes	6	(16)	3	(19)	11	(31)	1	(17)	5	(38)	26	(24)
1 - 4 hours	18	(49)	3	(19)	14	(40)	0	(0)	4	(31)	39	(36)
4 - 9 hours	2	(5)	2	(13)	1	(3)	0	(0)	1	(8)	6	(6)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
EGM (casino)												
Less than 15mins	5	(15)	2	(11)	4	(16)	3	(25)	3	(25)	17	(17)
15 - 29 minutes	1	(3)	2	(11)	6	(24)	2	(17)	0	(0)	11	(11)
30 - 59 minutes	6	(18)	4	(21)	3	(12)	1	(8)	2	(17)	16	(16)
1 - 4 hours	17	(52)	8	(42)	9	(36)	2	(17)	6	(50)	42	(42)
4 - 9 hours	4	(12)	3	(16)	3	(12)	4	(33)	1	(8)	15	(15)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Housie												
Less than 15mins	0	(0)	0	(0)	1	(8)	0	(0)	0	(0)	1	(2)
15 - 29 minutes	1	(5)	0	(0)	0	(0)	0	(0)	0	(0)	1	(2)
30 - 59 minutes	1	(5)	0	(0)	0	(0)	1	(20)	0	(0)	2	(4)
1 - 4 hours	17	(85)	2	(100)	11	(92)	4	(80)	6	(100)	40	(89)
4 - 9 hours	1	(5)	0	(0)	0	(0)	0	(0)	0	(0)	1	(2)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Card Game												
Less than 15mins	1	(4)	1	(10)	0	(0)	0	(0)	0	(0)	2	(3)
15 - 29 minutes	0	(0)	0	(0)	1	(8)	0	(0)	0	(0)	1	(2)
30 - 59 minutes	0	(0)	1	(10)	3	(25)	1	(13)	0	(0)	5	(8)
1 - 4 hours	11	(44)	6	(60)	3	(25)	3	(38)	4	(44)	27	(42)
4 - 9 hours	11	(44)	2	(20)	4	(33)	4	(50)	5	(56)	26	(41)
More than 9 hours	2	(8)	0	(0)	1	(8)	0	(0)	0	(0)	3	(5)
Casino Table Game												
Less than 15mins	3	(21)	0	(0)	1	(17)	0	(0)	2	(50)	6	(19)
15 - 29 minutes	2	(14)	0	(0)	0	(0)	0	(0)	0	(0)	2	(6)
30 - 59 minutes	1	(7)	2	(50)	1	(17)	1	(33)	0	(0)	5	(16)
1 - 4 hours	7	(50)	2	(50)	3	(50)	1	(33)	2	(50)	15	(48)
4 - 9 hours	1	(7)	0	(0)	1	(17)	1	(33)	0	(0)	3	(10)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Others												
Less than 15mins	1	(50)	0	(0)	0	(0)	0	(0)	2	(50)	3	(43)
15-29 minutes	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	1	(14)
30-59 minutes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1-4 hours	1	(50)	0	(0)	0	(0)	0	(0)	1	(25)	2	(29)
4-9 hours	0	(0)	0	(0)	0	(0)	0	(0)	1	(25)	1	(14)
More than 9 hours	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)

Non-gamblers and Lotto/keno only gamblers have been excluded from this table as they were not asked about time spent gambling

When examined by gambler type, it was apparent that a greater percentage of gamblers who participated frequently on continuous modes were more likely to gamble for longer periods of time on all modes except for Instant Kiwi and Housie than gamblers who participated infrequently on continuous modes. This was most noticeable for the one to four hour, and four to nine hour session times which were more likely for a markedly larger percentage of 'frequent continuous' gamblers than 'infrequent continuous' gamblers; for example 64% (n=16) of 'frequent continuous' gamblers had a typical session of one to four hours on non-casino electronic gaming machines versus 28% (n=23) of 'infrequent continuous' gamblers (Table 5).

However, as samples sizes were small for the 'frequent continuous' respondents, these findings should be treated with caution.

Table 5: Time spent on a typical occasion by mode and gambler type

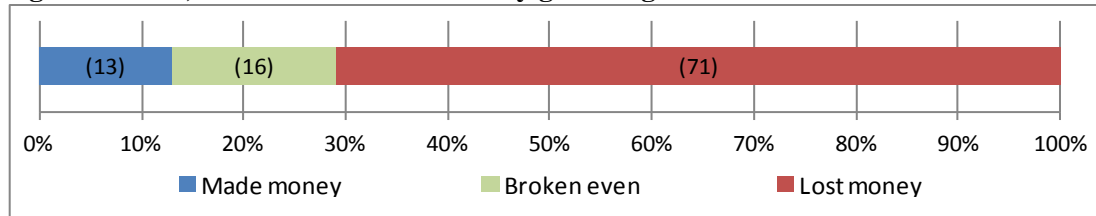
	Infrequent Continuous		Frequent Continuous		All	
	N	(%)	N	(%)	N	(%)
Instant Kiwi						
Less than 15mins	126	(95)	27	(93)	153	(94)
15 - 29 minutes	4	(3)	0	(0)	4	(2)
30 - 59 minutes	3	(2)	1	(3)	4	(2)
1 - 4 hours	0	(0)	1	(3)	1	(1)
4 - 9 hours	0	(0)	0	(0)	0	(0)
More than 9 hours	0	(0)	0	(0)	0	(0)
Horse/Dog Racing						
Less than 15mins	30	(59)	3	(18)	33	(49)
15 - 29 minutes	3	(6)	2	(12)	5	(7)
30 - 59 minutes	3	(6)	4	(24)	7	(10)
1 - 4 hours	7	(14)	5	(29)	12	(18)
4 - 9 hours	8	(16)	3	(18)	11	(16)
More than 9 hours	0	(0)	0	(0)	0	(0)
EGM (non-casino)						
Less than 15mins	18	(22)	2	(8)	20	(19)
15 - 29 minutes	15	(18)	1	(4)	16	(15)
30 - 59 minutes	23	(28)	3	(12)	26	(24)
1 - 4 hours	23	(28)	16	(64)	39	(36)
4 - 9 hours	3	(4)	3	(12)	6	(6)
More than 9 hours	0	(0)	0	(0)	0	(0)
EGM (casino)						
Less than 15mins	17	(21)	0	(0)	17	(17)
15 - 29 minutes	10	(13)	1	(5)	11	(11)
30 - 59 minutes	12	(15)	4	(19)	16	(16)
1 - 4 hours	32	(40)	10	(48)	42	(42)
4 - 9 hours	9	(11)	6	(29)	15	(15)
More than 9 hours	0	(0)	0	(0)	0	(0)
Housie						
Less than 15mins	1	(3)	0	(0)	1	(2)
15 - 29 minutes	0	(0)	1	(6)	1	(2)
30 - 59 minutes	2	(7)	0	(0)	2	(4)
1 - 4 hours	25	(86)	15	(94)	40	(89)
4 - 9 hours	1	(3)	0	(0)	1	(2)
More than 9 hours	0	(0)	0	(0)	0	(0)
Card Game						
Less than 15mins	2	(4)	0	(0)	2	(3)
15 - 29 minutes	1	(2)	0	(0)	1	(2)
30 - 59 minutes	4	(8)	1	(7)	5	(8)
1 - 4 hours	26	(53)	1	(7)	27	(42)
4 - 9 hours	14	(29)	12	(80)	26	(41)
More than 9 hours	2	(4)	1	(7)	3	(5)
Casino Table Game						
Less than 15mins	5	(20)	1	(17)	6	(19)
15 - 29 minutes	1	(4)	1	(17)	2	(6)
30 - 59 minutes	5	(20)	0	(0)	5	(16)
1 - 4 hours	11	(44)	4	(67)	15	(48)
4 - 9 hours	3	(12)	0	(0)	3	(10)
More than 9 hours	0	(0)	0	(0)	0	(0)
Others						
Less than 15mins	3	(50)	0	(0)	3	(43)
15—29 minutes	0	(0)	1	(100)	1	(14)
30—59 minutes	0	(0)	0	(0)	0	(0)
1—4 hours	2	(33)	0	(0)	2	(29)
4—9 hours	1	(17)	0	(0)	1	(14)
More than 9 hours	0	(0)	0	(0)	0	(0)

Non-gamblers and Lotto/keno only gamblers have been excluded from this table as they were not asked about time spent gambling

Winning/losing

Seventy-one percent (n=375) of respondents indicated they had lost money gambling, 16% (n=85) reported breaking even and 13 percent (n=69) reported making money (winning) (Figure 5). Whilst not unexpected, it is interesting to note that although 71% of respondents lost money gambling only 15% had reported negative financial impacts due to their gambling (see 4.1.4).

Figure 5: Won, broken even or lost money gambling



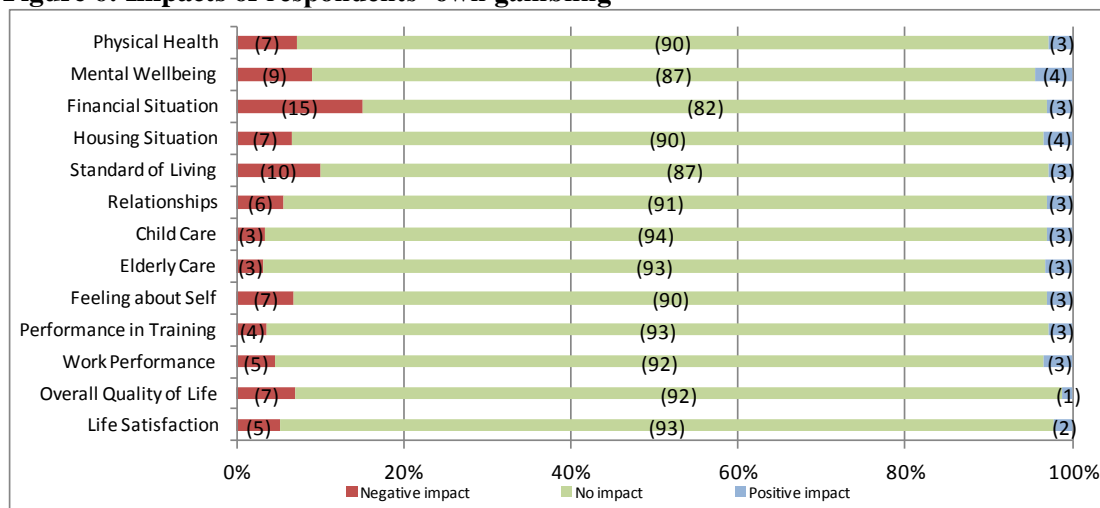
4.1.4 Impacts of respondents' own gambling

General impacts of the respondents' own gambling are summarised in this section. These have been reported according to whether the gambling was perceived to have had a negative impact on the domain in question (presumed to be a worsening of the situation), no impact, or a positive impact (presumed to be an improvement of the situation). The impacts are examined by ethnicity and gambler type.

Overall

In general, the majority of respondents indicated that their gambling had no impact on various domains in their life (82% to 94%) with four percent or less indicating a positive impact. However, a noticeable negative impact was noted for financial situation (15%; n=81). Noted at between five percent to 10% were negative impacts for physical health, mental wellbeing, housing situation, standard of living, relationships, feelings about self, work performance, overall quality of life and life satisfaction. Negative impacts on child care, elderly care and study or work-related training performance were noted at less than five percent (Figure 6).

Figure 6: Impacts of respondents' own gambling

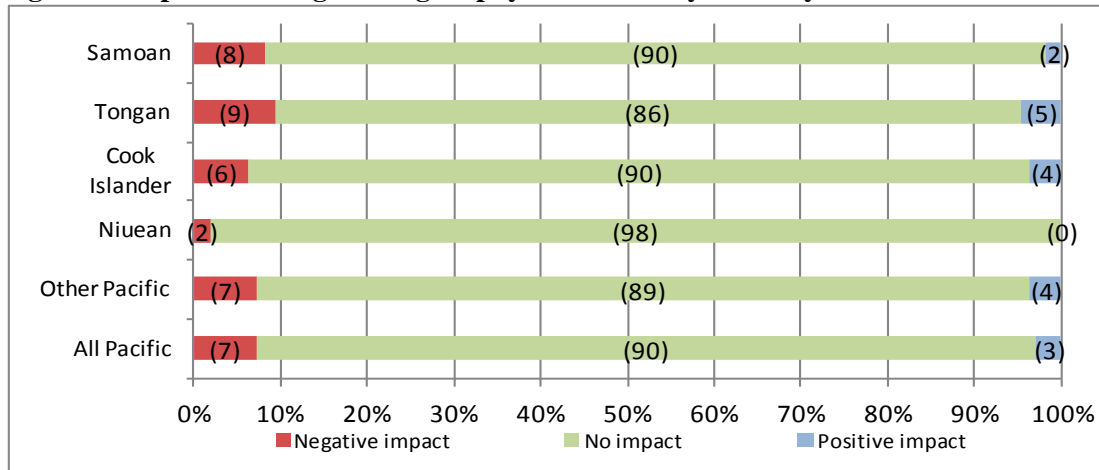


Ethnic differences

Physical health

There were no major ethnic differences regarding impact of own gambling on self-rated physical health with the exception of Niuean respondents who showed a slightly different profile from the other groups; only two percent (n=1) of Niuean respondents reported negative impacts (vs. 6% to 9% for the other groups) and none reported positive impacts (vs. 2% to 5%) (Figure 7).

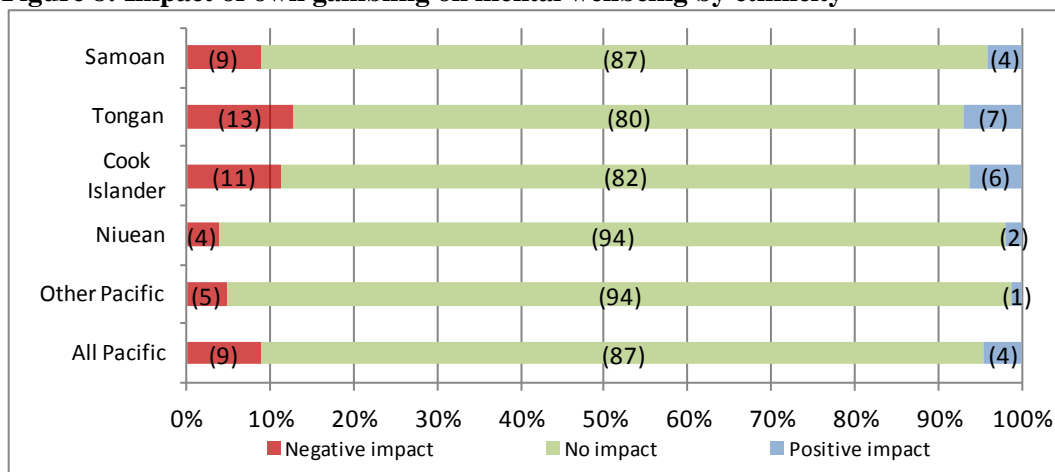
Figure 7: Impact of own gambling on physical health by ethnicity



Mental wellbeing

There were no major ethnic differences between Samoan, Tongan and Cook Islands respondents in relation to own gambling on mental wellbeing. Niuean and Other Pacific respondents showed a slightly different profile from the other groups; only four percent (n=2) of Niuean respondents and five percent (n=4) of Other Pacific respondents reported negative impacts (vs. 9% to 13% for the other groups) and two percent (n=1)/one percent (n=1) (Niuean/Other Pacific) reported positive impacts (vs. 4% to 7%) (Figure 8).

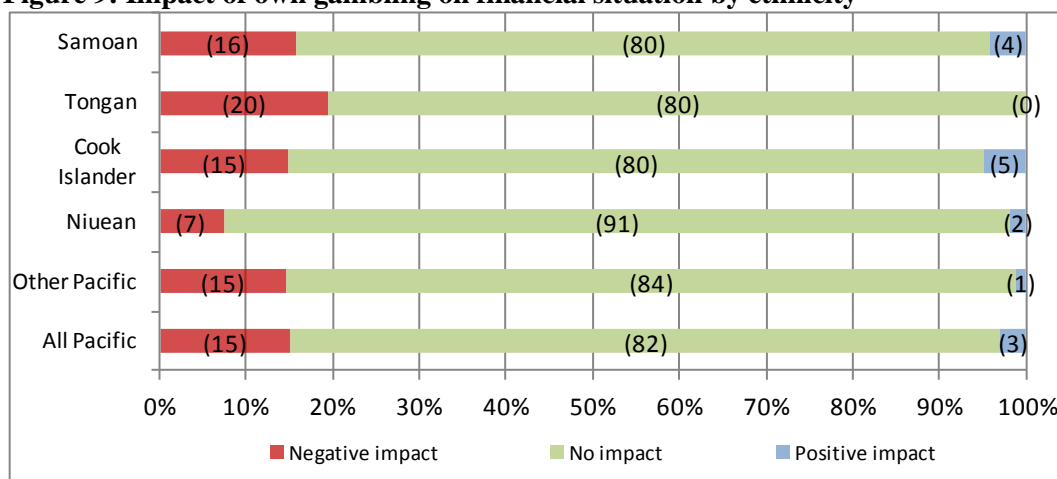
Figure 8: Impact of own gambling on mental wellbeing by ethnicity



Financial situation

Samoan and Cook Islands respondents reported similar impacts of their gambling on their financial situation with 16% (n=27) and 15% (n=21) reporting negative impacts and four percent (n=7) and five percent (n=7) reporting positive impacts, respectively. Tongan respondents had a slightly different profile with 20% (n=17) reporting negative impacts and none reporting positive impacts. Again, Niueans showed a different profile with less reporting negative impacts (7%; n=4) and a slightly greater percentage reporting no impact (91%; n=49 vs. 80% to 84% for the other groups) (Figure 9).

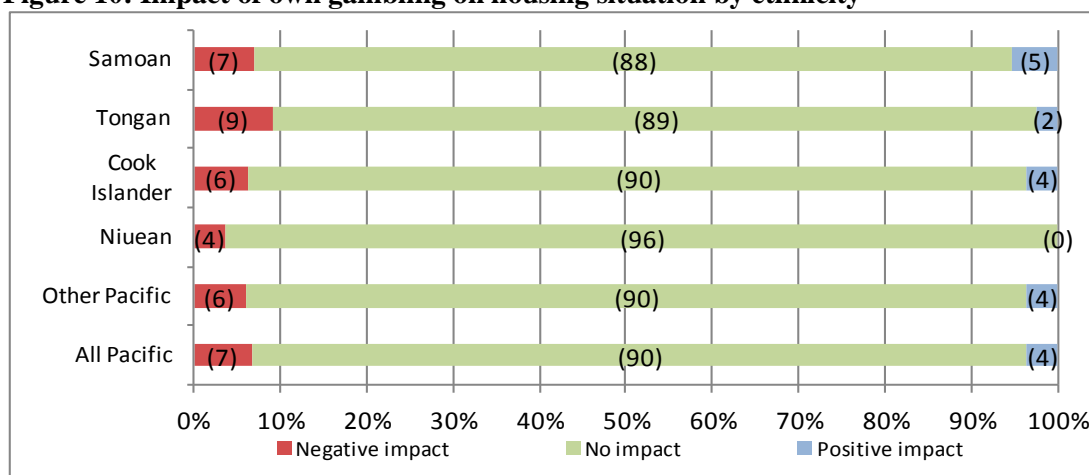
Figure 9: Impact of own gambling on financial situation by ethnicity



Housing situation

There were no major ethnic differences regarding impact of own gambling on housing situation with the exception of Niuean respondents who showed a slightly different profile from the other groups; four percent (n=2) of Niuean respondents reported negative impacts (vs. 6% to 9% for the other groups) and none reported positive impacts (vs. 2% to 5%) (Figure 10).

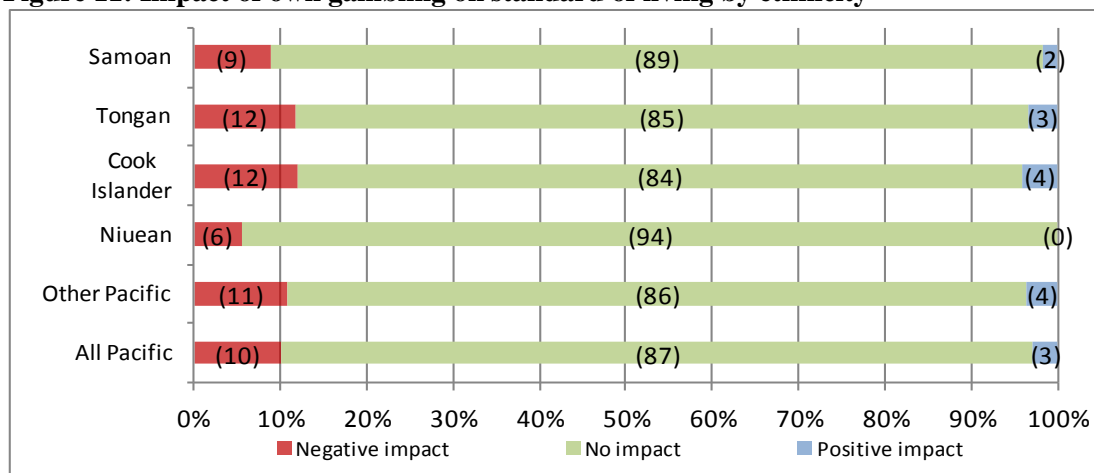
Figure 10: Impact of own gambling on housing situation by ethnicity



Standard of living

There were no major ethnic differences regarding impact of own gambling on material standard of living with the exception of Niuean respondents who showed a slightly different profile from the other groups; six percent (n=3) of Niuean respondents reported negative impacts (vs. 9% to 12% for the other groups) and none reported positive impacts (vs. 2% to 4%) (Figure 11).

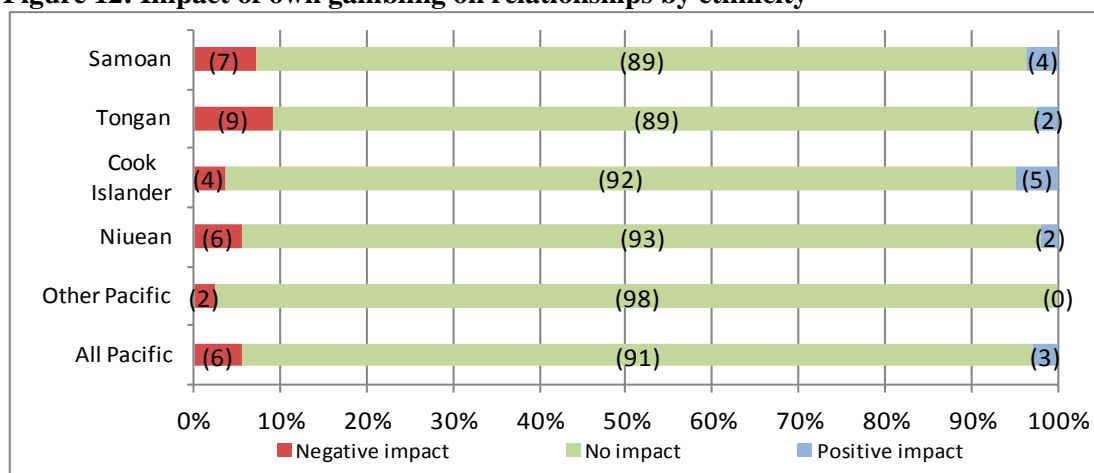
Figure 11: Impact of own gambling on standard of living by ethnicity



Relationships

There were no major ethnic differences regarding impact on relationships with family/friends caused by the respondents' own gambling. A majority (89% to 98%) of respondents indicated no impact with two percent to nine percent reporting a negative impact and up to five percent reporting a positive impact (Figure 12).

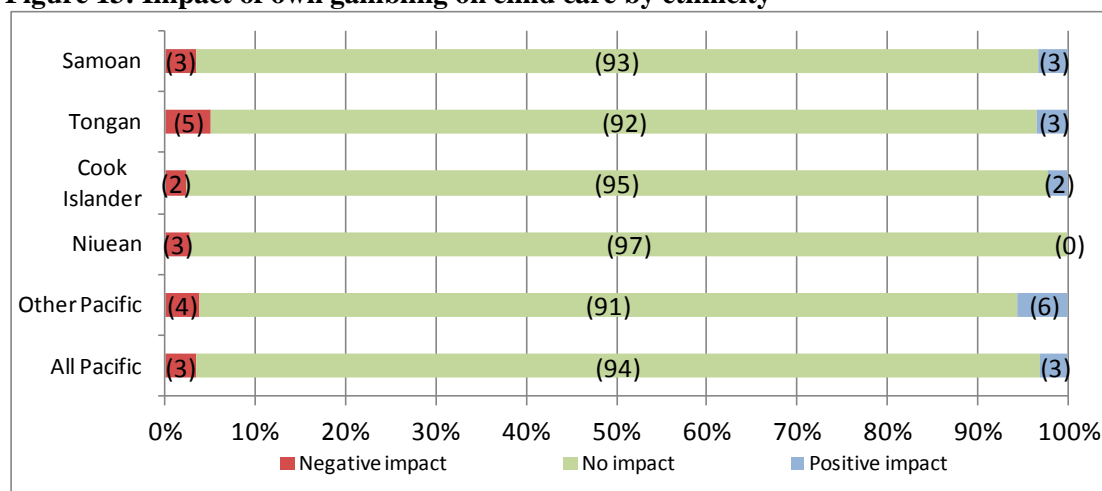
Figure 12: Impact of own gambling on relationships by ethnicity



Child care

There were no major ethnic differences regarding impact on child care caused by the respondents' own gambling. A majority (91% to 97%) of respondents indicated no impact with two percent to five percent reporting a negative impact and up to six percent reporting a positive impact (Figure 13).

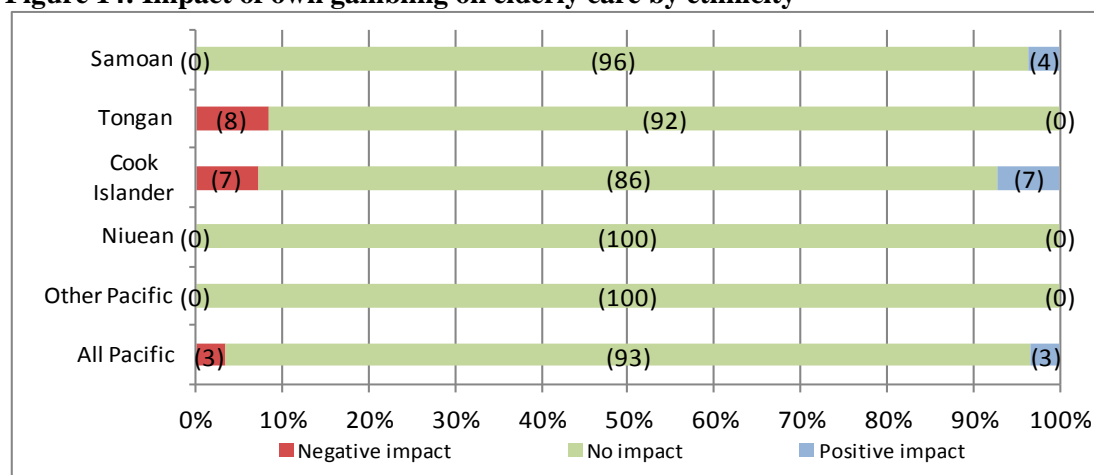
Figure 13: Impact of own gambling on child care by ethnicity



Elderly care

Niuean and Other Pacific respondents reported no impact of their gambling on care giving for the elderly. Tongan and Cook Islands respondents reported negative impacts at eight percent (n=1) and seven percent (n=2) respectively, whilst Samoan and Cook Islands respondents reported positive impacts at four percent (n=1) and seven percent (n=2) respectively (Figure 14).

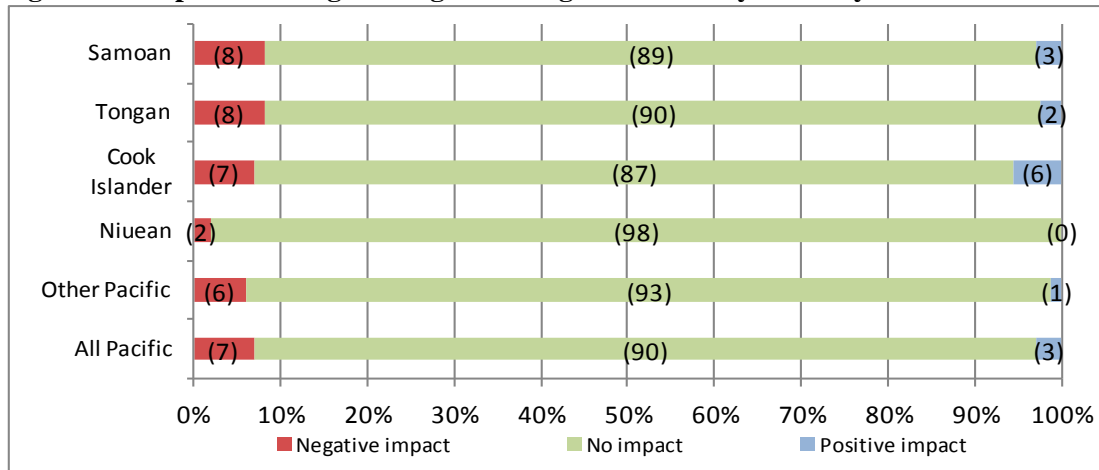
Figure 14: Impact of own gambling on elderly care by ethnicity



Feelings about self

There were no major ethnic differences regarding impact of own gambling on feelings about self with the exception of Niueans, a slightly greater percentage of whom reported no impact (98%; n=53) compared with the other groups (87% to 93%) and Cook Islands respondents, a slightly higher percentage of whom reported positive impacts (6%; n=8 vs. 0 to 3%) (Figure 15).

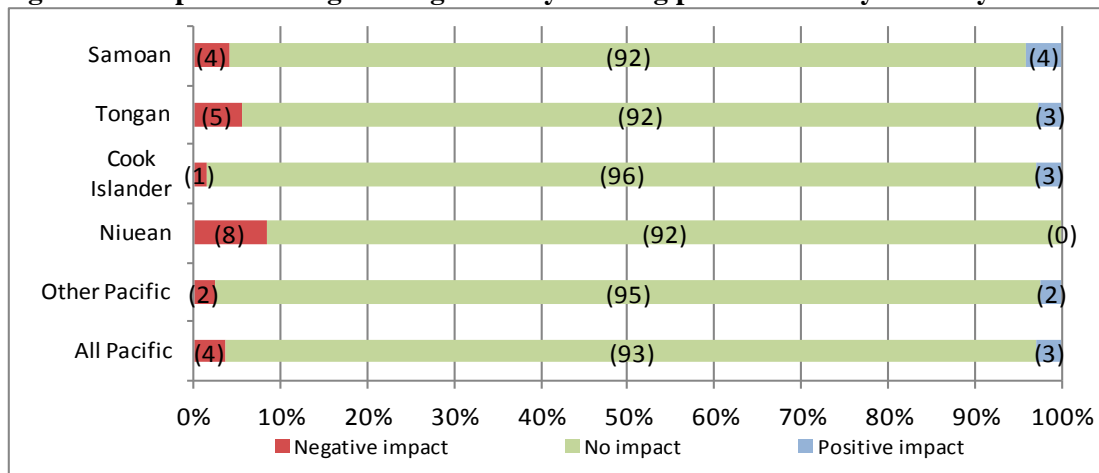
Figure 15: Impact of own gambling on feelings about self by ethnicity



Study or work-related training performance

There were no major ethnic differences regarding impact of own gambling on study or work-related training performance, with the exception of Niueans, a slightly higher percentage of whom reported negative impacts than the other groups (8%; n=2 vs. 1% to 5%) and none of whom reported positive impacts compared with the other groups (2% to 4%) (Figure 16).

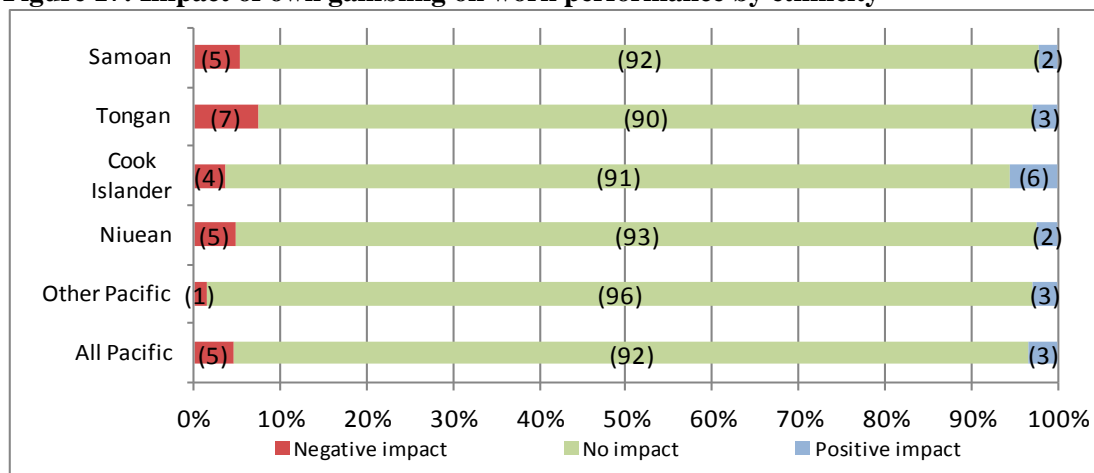
Figure 16: Impact of own gambling on study/training performance by ethnicity



Work performance

There were no major ethnic differences regarding impact of own gambling on work performance, with the exception of Cook Islands respondents, a slightly higher percentage of whom reported positive impacts than the other groups (6%; n=6 vs. 2% to 3%), and Other Pacific respondents of whom a slightly lower percentage reported negative impacts compared with the other groups (1%; n=1 vs. 4% to 7%) (Figure 17).

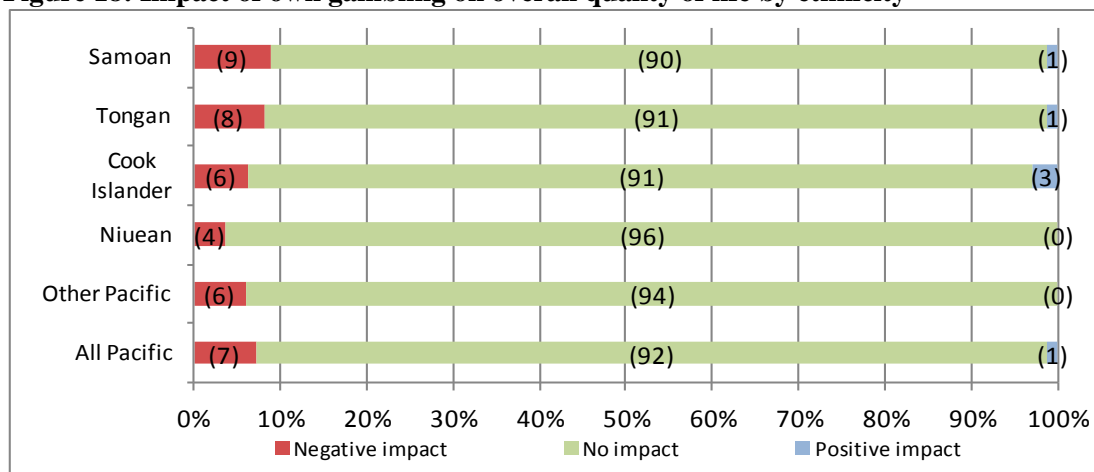
Figure 17: Impact of own gambling on work performance by ethnicity



Overall quality of life

There were no major ethnic differences regarding impact on overall quality of life caused by the respondents' own gambling. A majority (90% to 96%) of respondents indicated no impact with four percent to nine percent reporting a negative impact and up to three percent reporting a positive impact (Figure 18).

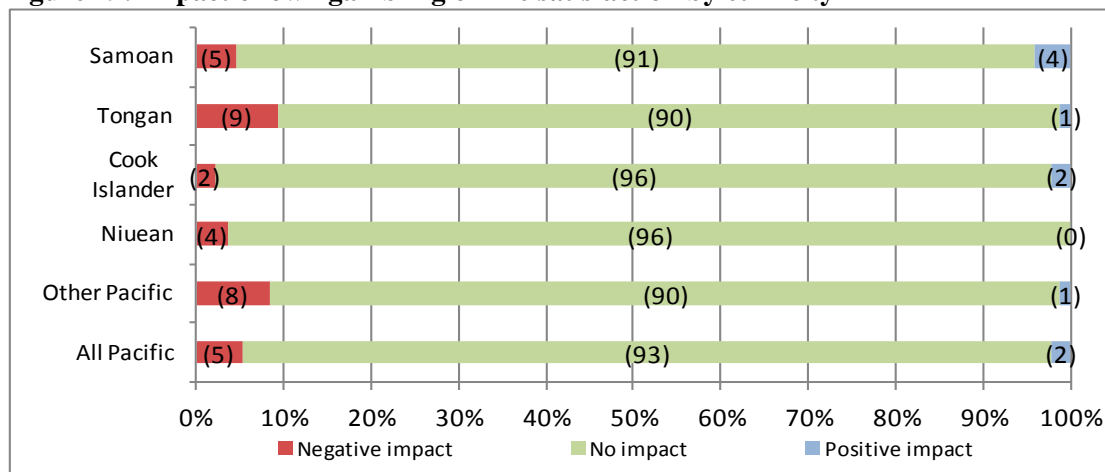
Figure 18: Impact of own gambling on overall quality of life by ethnicity



Overall satisfaction with life

A higher percentage of Tongan and Other Pacific respondents reported negative impacts on overall life satisfaction (9%; n=8 and 8%; n=7 respectively) compared with the other groups (2% to 5%). There were no other notable differences between the groups (Figure 19).

Figure 19: Impact of own gambling on life satisfaction by ethnicity

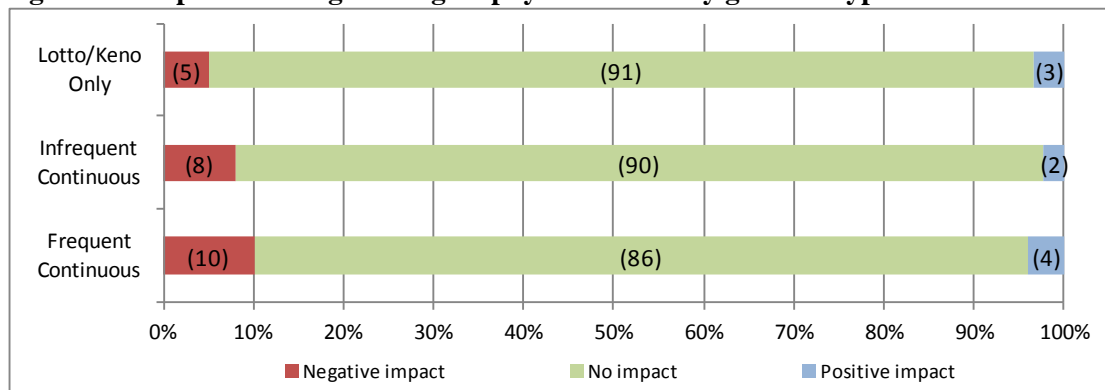


Differences by gambler type

Physical health

A slightly higher percentage of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their physical health caused by their gambling (10%; n=5) compared with gamblers who participated infrequently on continuous modes (8%; n=24) and gamblers who participated in Lotto/keno only (5%; n=9). Minimal positive impacts on physical health were reported by all gambler types, ranging from two to four percent (Figure 20).

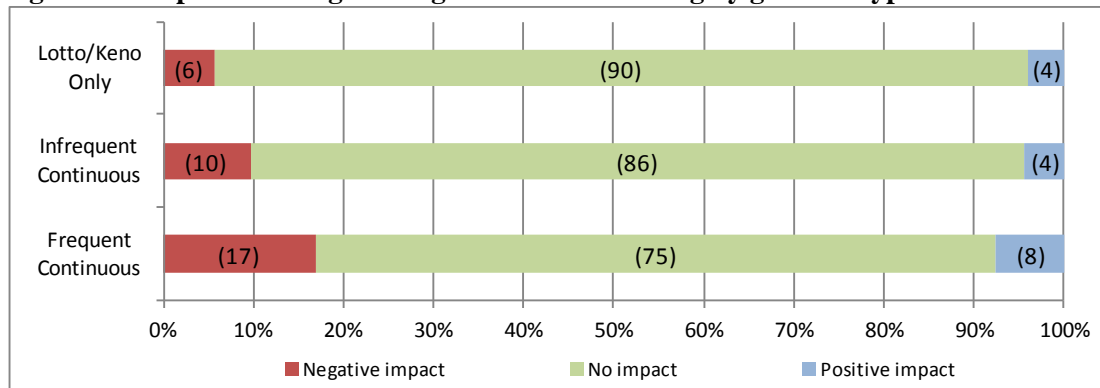
Figure 20: Impact of own gambling on physical health by gambler type



Mental wellbeing

A higher percentage of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their mental wellbeing caused by their gambling (17%; n=9) compared with gamblers who participated infrequently on continuous modes (10%; n=29) and gamblers who participated in Lotto/keno only (6%; n=10). Conversely, the percentage of 'frequent continuous' gamblers reporting positive impacts on their mental wellbeing (8%; n=4) was twice the percentage of the other gambler types (4%). Thus, overall less 'frequent continuous' gamblers reported no impact (75%; n=40) compared with 'infrequent continuous' gamblers (86%; n=258) and Lotto/keno only gamblers (90%; n=158) (Figure 21).

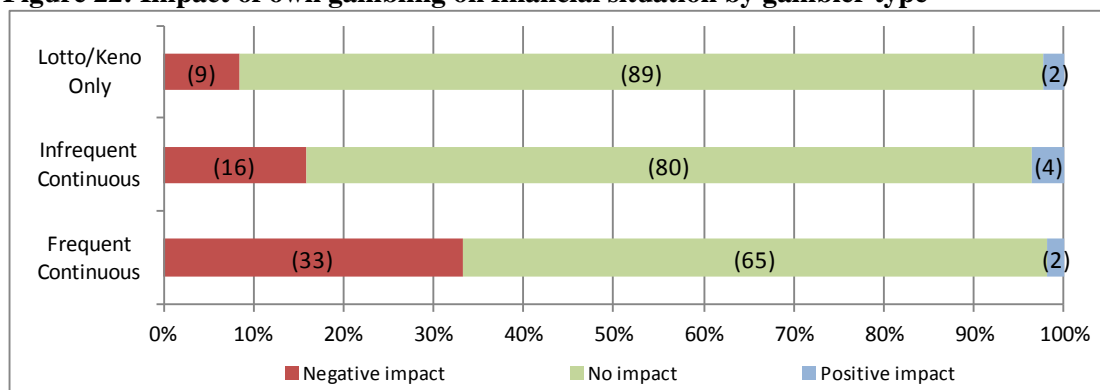
Figure 21: Impact of own gambling on mental wellbeing by gambler type



Financial situation

One third of gamblers (33%; n=17) who participated frequently on continuous modes of gambling reported negative impacts on their financial situation caused by their gambling; this was substantially higher than that reported by gamblers who participated infrequently on continuous modes (16%; n=48) and gamblers who participated in Lotto/keno only (9%; n=15). Minimal positive impacts on financial situation were reported by all gambler types, ranging from two percent to four percent (Figure 22). Variations by gambler type for perceived impact of own gambling on financial situation were highly significant ($p < 0.001$).

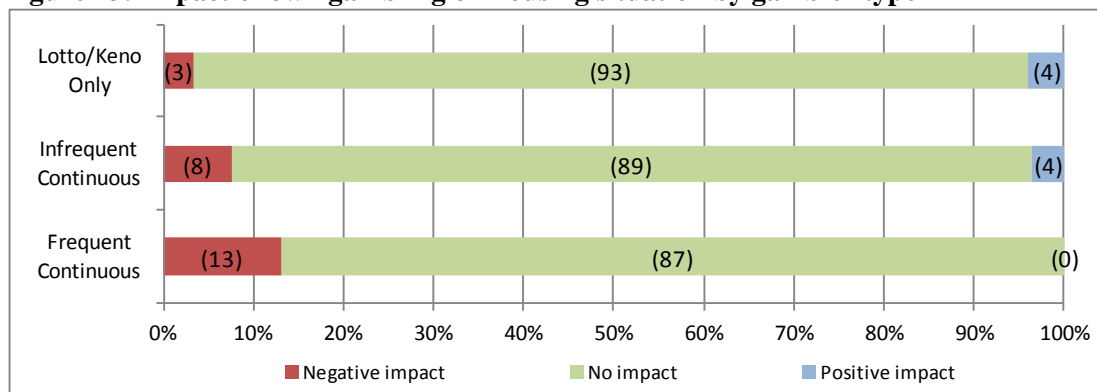
Figure 22: Impact of own gambling on financial situation by gambler type



Housing situation

A slightly higher percentage of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their housing situation caused by their gambling (13%; n=7) compared with gamblers who participated infrequently on continuous modes (8%; n=23) and gamblers who participated in Lotto/keno only (3%; n=6). No 'frequent continuous' gamblers reported any positive impacts on their housing situation compared with four percent for the other gambler types (Figure 23).

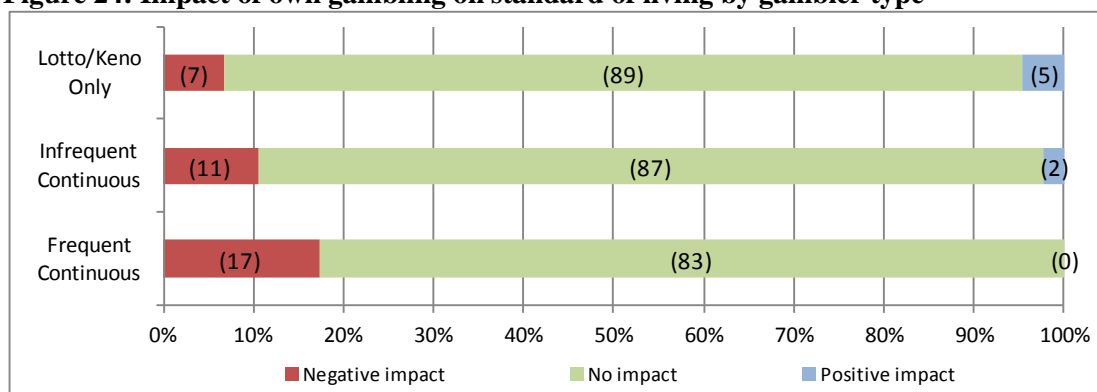
Figure 23: Impact of own gambling on housing situation by gambler type



Standard of living

A slightly higher percentage of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their standard of living caused by their gambling (17%; n=9) compared with gamblers who participated infrequently on continuous modes (11%; n=32) and gamblers who participated in Lotto/keno only (7%; n=12). No 'frequent continuous' gamblers reported any positive impacts on their standard of living compared with two percent to five percent for the other gambler types (Figure 24).

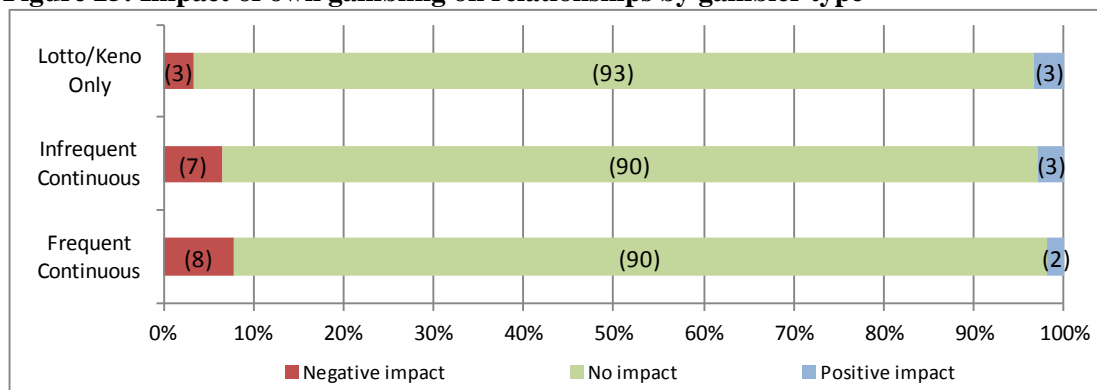
Figure 24: Impact of own gambling on standard of living by gambler type



Relationships with family/friends

A similar percentage of gamblers who participated frequently or infrequently on continuous modes of gambling reported negative impacts on their relationships with family and friends caused by their gambling (8%; n=4 and 7%; n=20 respectively) compared with gamblers who participated in Lotto/keno only (3%; n=6). Minimal positive impacts on relationships were reported by all gambler types, ranging from two percent to three percent (Figure 25).

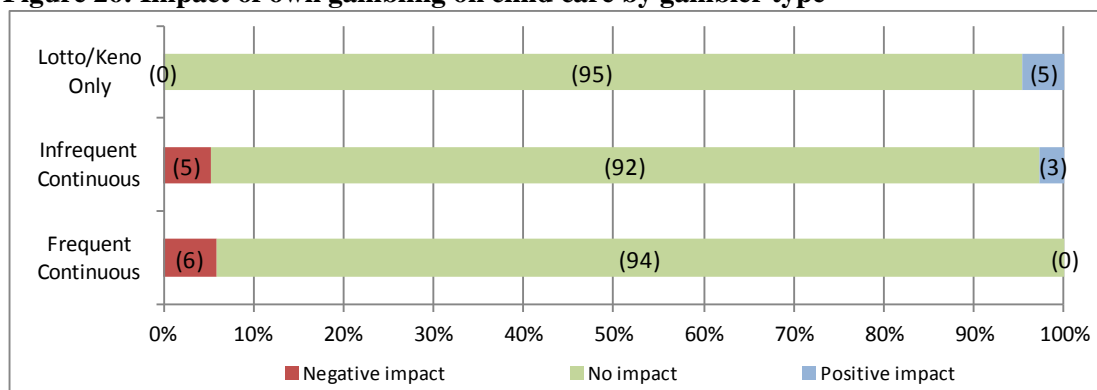
Figure 25: Impact of own gambling on relationships by gambler type



Child care

No gamblers who participated in Lotto/keno reported any negative impacts on child care due to their own gambling, compared with five percent to six percent for gamblers who participated in continuous modes. Conversely, five percent (n=6) of gamblers who participated in Lotto/keno only reported positive impacts on child care, compared with three percent (n=5) for 'infrequent continuous' gamblers and none for 'frequent continuous' gamblers (Figure 26).

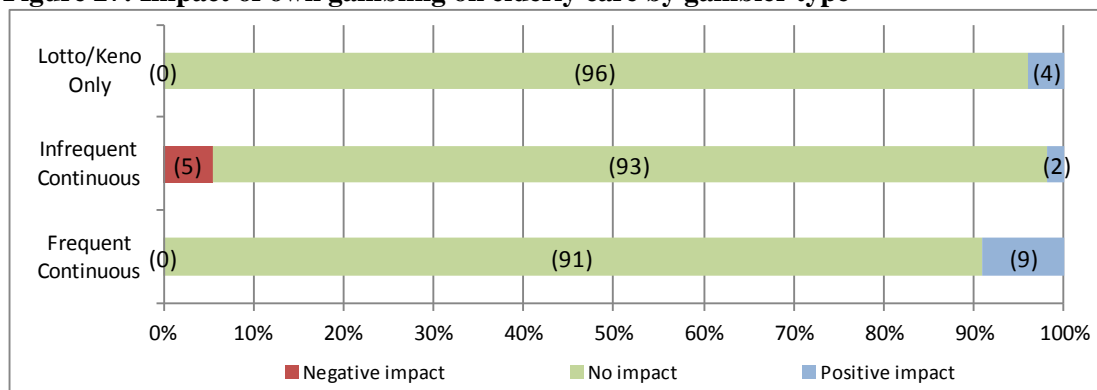
Figure 26: Impact of own gambling on child care by gambler type



Elderly care

Five percent (n=3) of 'infrequent continuous' gamblers reported negative impacts on care giving for the elderly due to their own gambling and only two percent (n=1) reported positive impacts. Conversely, no gamblers who played Lotto/keno only or who were 'frequent continuous' gamblers reported negative impacts whilst four percent to nine percent respectively reported positive impacts (Figure 27).

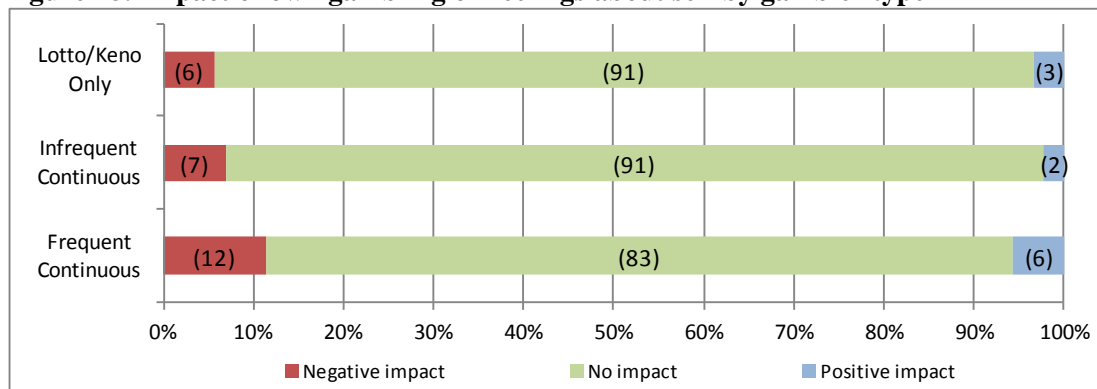
Figure 27: Impact of own gambling on elderly care by gambler type



Feelings about self

A slightly higher percentage of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their feelings about self caused by their gambling (12%; n=6) compared with gamblers who participated infrequently on continuous modes (7%; n=21) and gamblers who participated in Lotto/keno only (6%; n=10). Similarly, a slightly higher percentage of 'frequent continuous' gamblers reported positive impacts on their feelings about self (6%; n=3) compared with 'infrequent continuous' gamblers (2%; n=7) and gamblers who participated in Lotto/keno only (3%; n=6) (Figure 28).

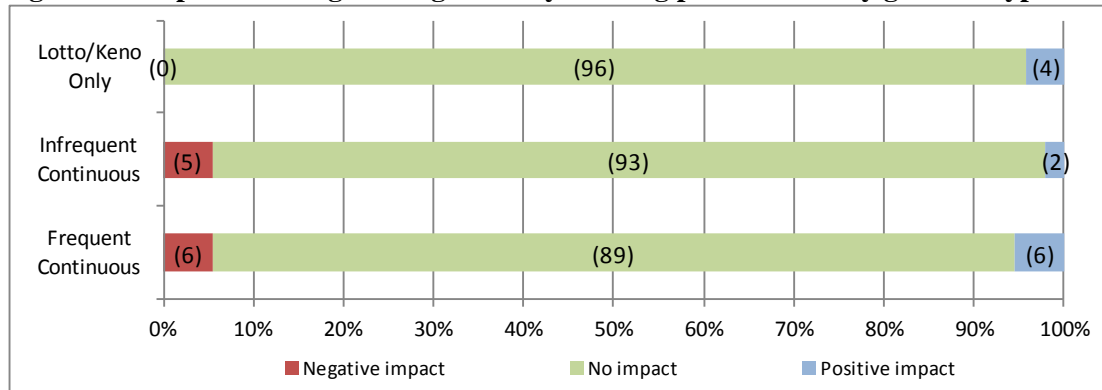
Figure 28: Impact of own gambling on feelings about self by gambler type



Study or work-related training performance

No gamblers who participated in Lotto/keno only reported any negative impacts on study or work-related training performance due to their own gambling, compared with five percent to six percent for gamblers on continuous modes. Four percent (n=3) of gamblers who participated in Lotto/keno only reported positive impacts on training performance, compared with two percent (n=3) for ‘infrequent continuous’ gamblers and six percent (n=1) for ‘frequent continuous’ gamblers (Figure 29).

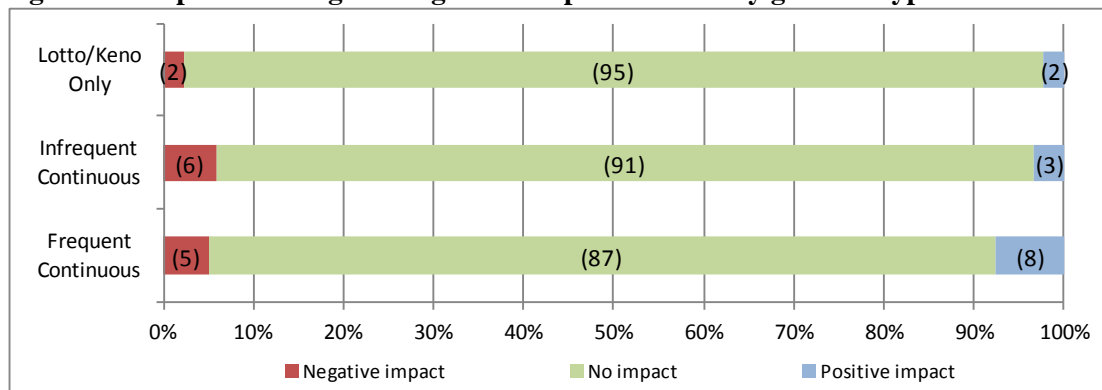
Figure 29: Impact of own gambling on study/training performance by gambler type



Work performance

Two percent (n=3) of gamblers who participated in Lotto/keno only reported negative impacts on work performance due to their own gambling, compared with five percent to six percent for gamblers on continuous modes. Two percent (n=3) of gamblers who participated in Lotto/keno only reported positive impacts on work performance, compared with three percent (n=8) for ‘infrequent continuous’ gamblers and eight percent (n=3) for ‘frequent continuous’ gamblers (Figure 30).

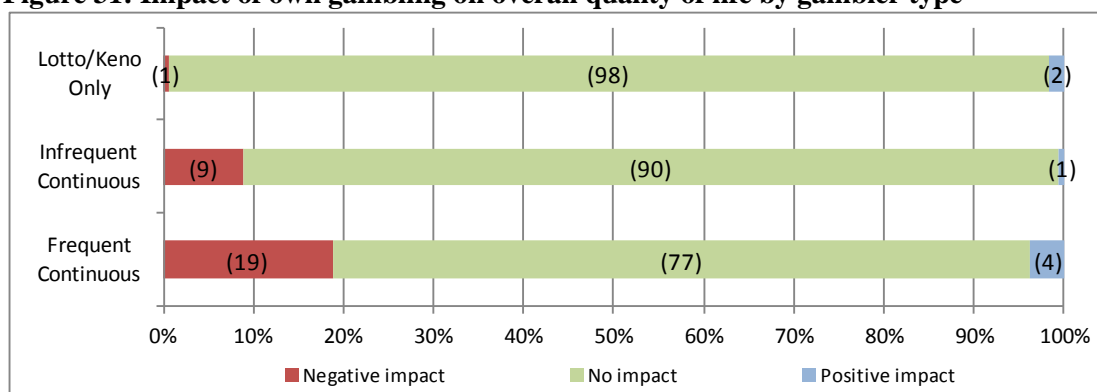
Figure 30: Impact of own gambling on work performance by gambler type



Overall quality of life

Almost one-fifth (19%; n=10) of gamblers who participated frequently on continuous modes of gambling reported negative impacts on their overall quality of life caused by their gambling compared with gamblers who participated infrequently on continuous modes (9%; n=27) and gamblers who participated in Lotto/keno only (1%; n=1). Conversely, twice the percentage of 'frequent continuous' gamblers reported positive impacts on their overall quality of life (4%; n=2) compared with the other gambler types (1% to 2%). Thus, overall less 'frequent continuous' gamblers reported no impact (77%; n=41) compared with 'infrequent continuous' gamblers (90%; n=272) and Lotto/keno only gamblers (98%; n=171) (Figure 31). Variations by gambler type for perceived impact of own gambling on overall quality of life were highly significant ($p < 0.001$).

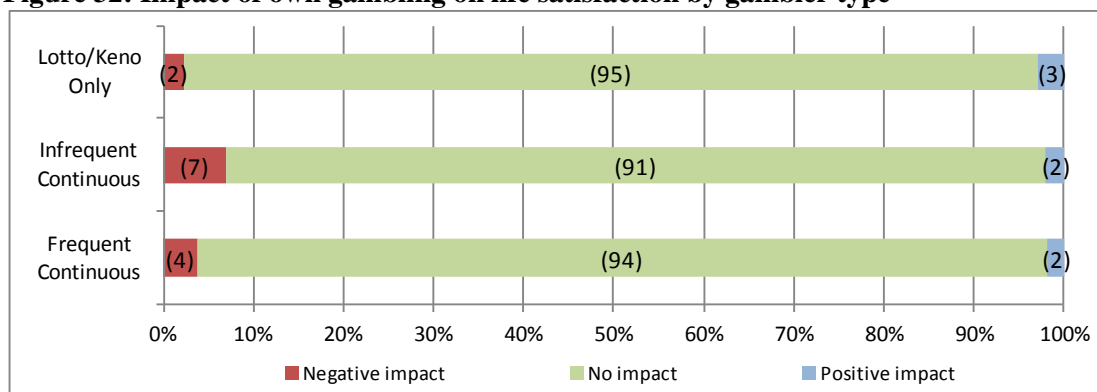
Figure 31: Impact of own gambling on overall quality of life by gambler type



Overall satisfaction with life

A slightly higher percentage of gamblers who participated infrequently on continuous modes of gambling reported negative impacts on their overall satisfaction with life (7%; n=21) compared with gamblers who participated frequently on continuous modes (4%; n=2) and gamblers who participated in Lotto/keno only (2%; n=4). All gambler types reported positive impacts on their life satisfaction at similar percentages (2% to 3%) (Figure 32).

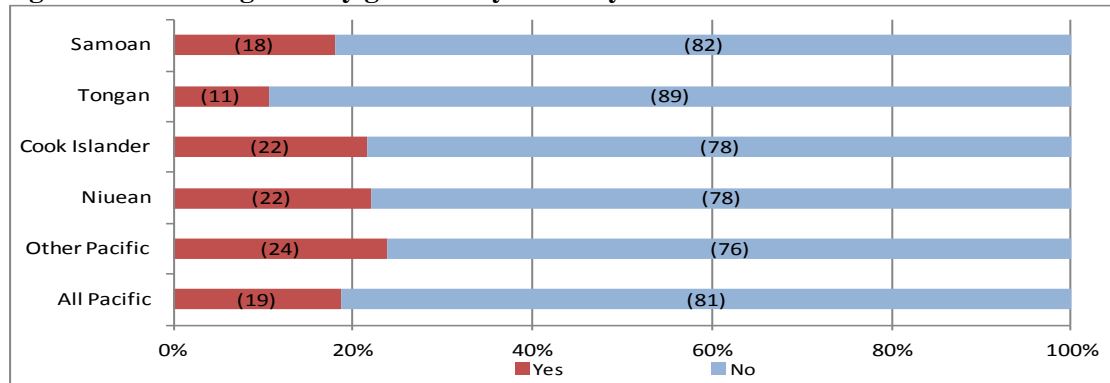
Figure 32: Impact of own gambling on life satisfaction by gambler type



4.1.5 Knowing a heavy gambler

One hundred and ninety Pacific respondents (19%) reported knowing one or more people who were “fairly heavy gamblers” during the past 12 months. Significant ethnic variation was seen, with Tongans (11%; n=22) less likely to report knowing “fairly heavy gamblers” compared to the other ethnic groups (18% to 24%) (p=0.007) (Figure 33).

Figure 33: Knowing a heavy gambler by ethnicity



For each of the ethnic groups the heavy gambler known by the respondent was generally a wider family member (i.e. not immediate family) (26% to 43%). The relationship of other heavy gamblers to respondents varied by ethnicity and was generally 15% or less apart from the following. Tongans reported mothers and friends at 19% (n=4) each, Cook Islanders reported friends at 26% (n=14), and Niueans reported siblings and friends at 26% (n=5) and 21% (n=4) respectively (Table 6).

Table 6: Relationship of heavy gambler by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Spouse/partner	2	(4)	1	(5)	0	(0)	0	(0)	1	(3)	4	(2)
Mother	8	(14)	4	(19)	8	(15)	2	(11)	6	(16)	28	(15)
Father	5	(9)	2	(10)	3	(6)	3	(16)	1	(3)	14	(7)
Children	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
Sibling	7	(13)	0	(0)	8	(15)	5	(26)	7	(18)	27	(14)
Wider Family	22	(39)	9	(43)	19	(36)	5	(26)	14	(37)	69	(37)
Friend	8	(14)	4	(19)	14	(26)	4	(21)	7	(18)	37	(20)
Work Colleague	1	(2)	1	(5)	1	(2)	0	(0)	2	(5)	5	(3)
Other	2	(4)	0	(0)	0	(0)	0	(0)	0	(0)	2	(1)

In general, the gambling mode most participated in by the heavy gambler was electronic gaming machines, either within or outside casinos. Horse/dog racing also appeared popular for all ethnic groups apart from Tongans, and housie was popular for Samoans (Table 7).

Table 7: Main gambling activity of heavy gambler

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Main type of gambling first heavy gambler												
Lotto	0	(0)	1	(5)	0	(0)	1	(5)	3	(9)	5	(3)
Keno	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
Instant Kiwi	0	(0)	0	(0)	1	(2)	0	(0)	0	(0)	1	(1)
Horse/Dog Racing	6	(12)	1	(5)	8	(15)	4	(21)	6	(18)	25	(14)
EGM (non-casino)	17	(33)	5	(25)	21	(40)	6	(32)	15	(45)	64	(36)
EGM (casino)	10	(19)	9	(45)	14	(27)	7	(37)	5	(15)	45	(26)
Housie	8	(15)	2	(10)	4	(8)	1	(5)	2	(6)	17	(10)
Card Game	2	(4)	1	(5)	0	(0)	0	(0)	0	(0)	3	(2)
Casino Table Game	6	(12)	1	(5)	0	(0)	0	(0)	0	(0)	7	(4)
Others	2	(4)	0	(0)	4	(8)	0	(0)	2	(6)	8	(5)

4.1.6 Impacts caused by other people's gambling

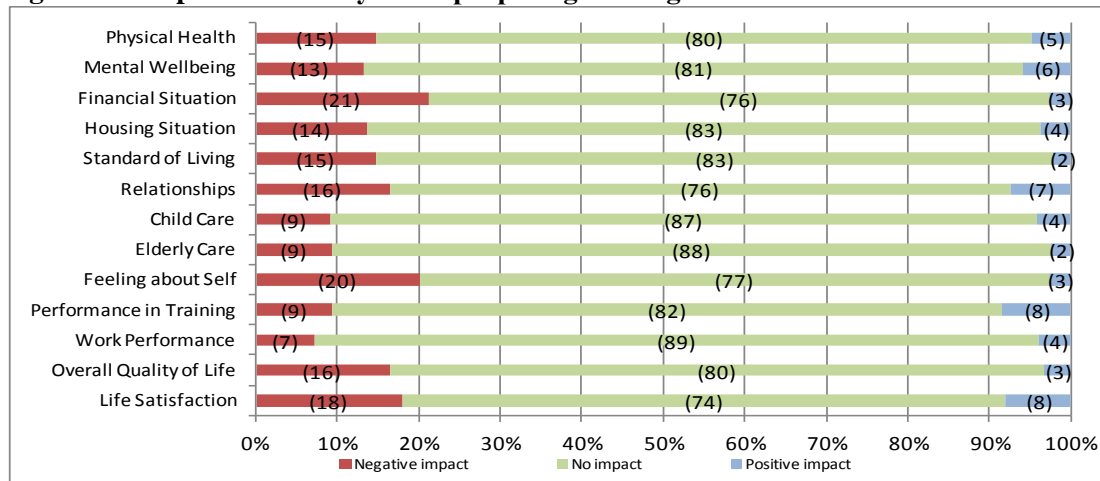
The 190 respondents who reported knowing one or more people who were “fairly heavy gamblers” during the past 12 months completed a section of the questionnaire about the impact that the other person's gambling had on their own life.

The impacts caused by other people's gambling on specific aspects of the respondent's life are summarised in this section. These have been reported according to whether the other person's gambling was perceived to have had a negative impact on the domain in question (presumed to be a worsening of the situation), no impact, or a positive impact (presumed to be an improvement of the situation). The impacts are examined overall and by the respondents' ethnicity.

General

In general, the majority of respondents indicated that the other person's gambling had no impact on various domains in their life (74% to 89%) with eight percent or less indicating a positive impact. However, one-fifth of respondents reported negative impacts for financial situation (21%; n=40) and feelings about self (20%; n=38). For all the other domains examined, between seven percent (n=11) (work performance) and 18% (n=34) (life satisfaction) of respondents reported negative impacts (Figure 34).

Figure 34: Impacts caused by other people's gambling

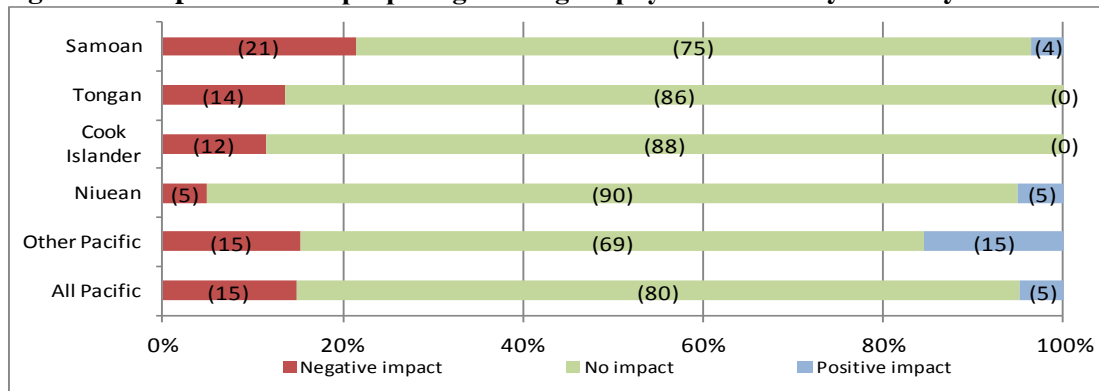


Ethnic differences

Physical health

Fifteen percent (n=6) of the Other Pacific group reported positive impacts of another person's gambling on self-rated physical health compared with zero to five percent for the other ethnic groups. There were no other major ethnic differences with the exception of Niuean respondents with only five percent (n=1) reporting negative impacts (vs. 12% to 21% for the other groups) (Figure 35). Variations by ethnicity for perceived impact of another person's gambling on self-rated physical health were slightly significant (p=0.0202).

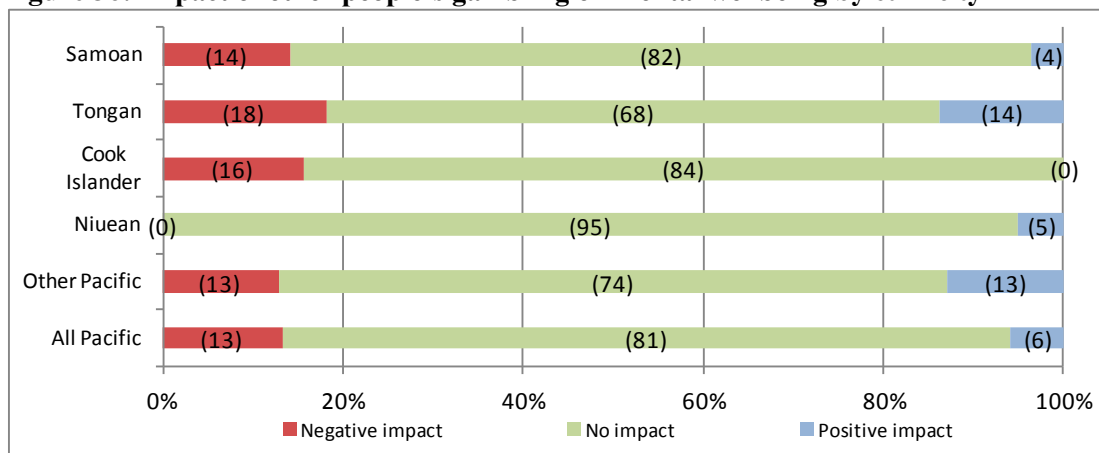
Figure 35: Impact of other people's gambling on physical health by ethnicity



Mental wellbeing

Niuean respondents showed a different profile from the other ethnic groups with 95% (n=19) reporting no impact of another person's gambling on their mental wellbeing compared with 68% to 84% for the other ethnic groups. No Niueans reported negative impacts compared with 13% to 18% of the other ethnic groups. No Cook Islanders reported positive impacts whilst 14% (n=3) of Tongan and 13% (n=5) of Other Pacific respondents reported positive impacts on their mental wellbeing. Positive impacts were reported by four percent (n=2)/five percent (n=1) of Samoans and Niueans respectively (Figure 36).

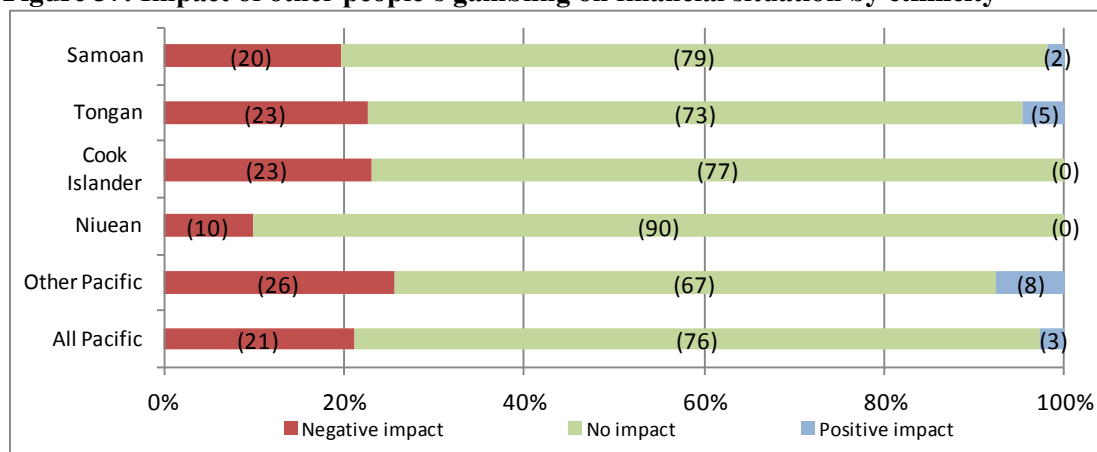
Figure 36: Impact of other people's gambling on mental wellbeing by ethnicity



Financial situation

Niuean respondents showed a slightly different profile from the other ethnic groups with 90% (n=18) reporting no impact of another person's gambling on their financial situation compared with 67% to 79% of the other ethnic groups. Ten percent (n=2) of Niueans reported negative impacts compared with one-fifth (20%) to one-quarter (26%) of the other ethnic groups. No Cook Islanders or Niueans reported positive impacts compared with two percent to eight percent of the other ethnic groups (Figure 37).

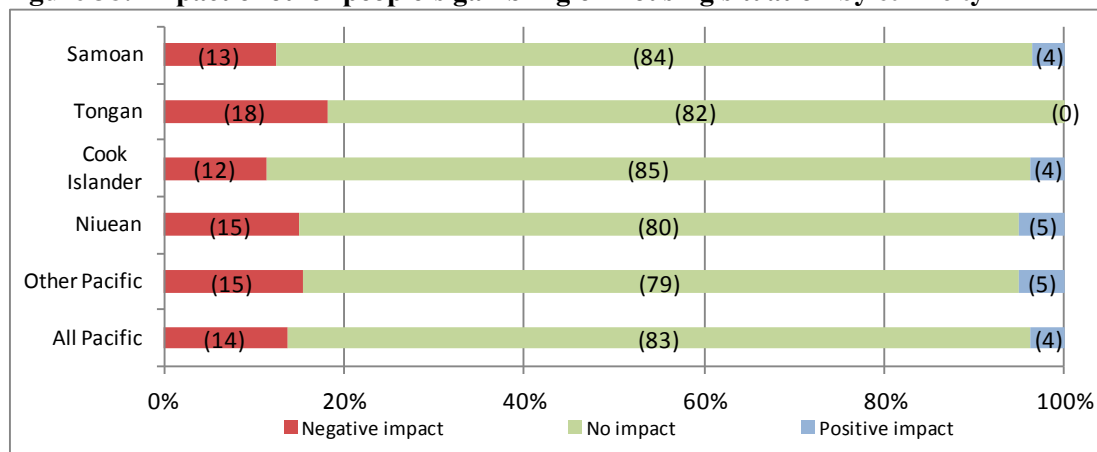
Figure 37: Impact of other people's gambling on financial situation by ethnicity



Housing situation

There were no major ethnic differences regarding impact of another person's gambling on the respondents' housing situation. Twelve percent to 18% reported negative impacts and four percent to five percent reported positive impacts; Tongans were the exception with none reporting positive impacts on their housing situation (Figure 38).

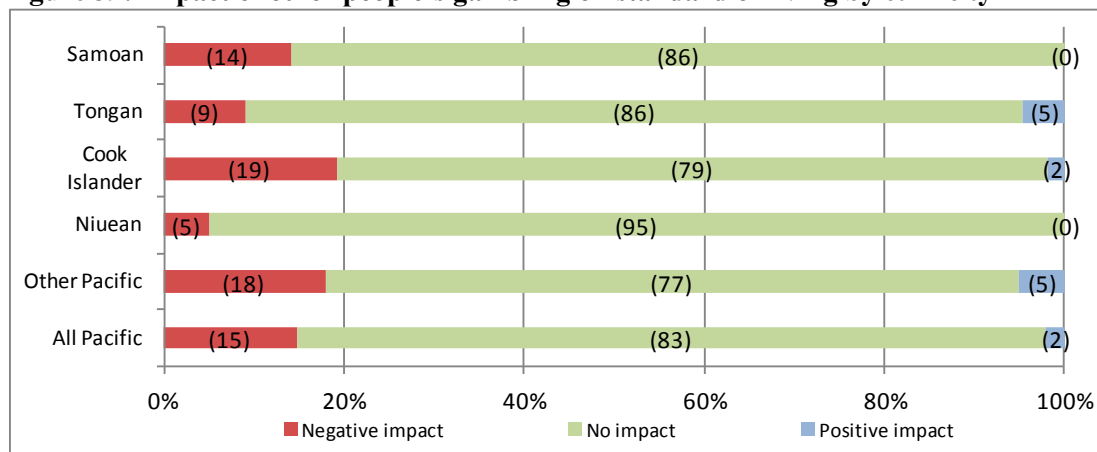
Figure 38: Impact of other people's gambling on housing situation by ethnicity



Standard of living

Niuean respondents showed a slightly different profile from the other ethnic groups with 95% (n=19) reporting no impact of another person's gambling on their standard of living compared with 77% to 86% of the other ethnic groups. Five percent (n=1) of Niueans reported negative impacts compared with nine percent to 19% of the other ethnic groups. No Samoans or Niueans reported positive impacts compared with two percent to five percent of the other ethnic groups (Figure 39).

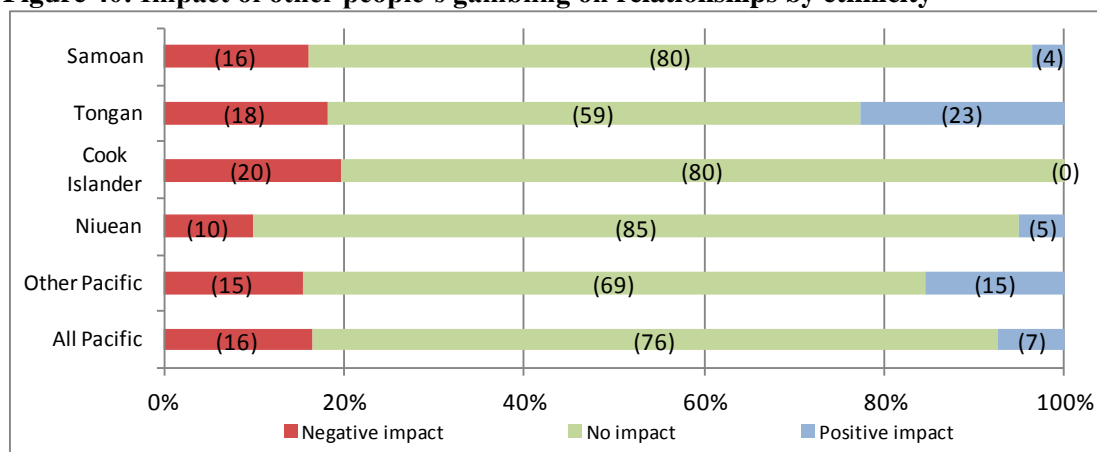
Figure 39: Impact of other people's gambling on standard of living by ethnicity



Relationships

A lower percentage of Tongans (59%; n=13) reported no impact of another person's gambling on relationships with family/friends compared with 69% to 85% of the other ethnic groups. A lower percentage of Niueans (10%; n=2) reported a negative impact compared with the other groups (15% to 20%). Conversely, almost one-quarter of Tongans (23%; n=5) reported positive impacts on relationships caused by another person's gambling and similarly 15% (n=6) of the Other Pacific respondents, compared with none to five percent for the other groups (Figure 40). Variations by ethnicity for perceived impact of another person's gambling on respondents' relationships with family and friends were statistically significant (p=0.02).

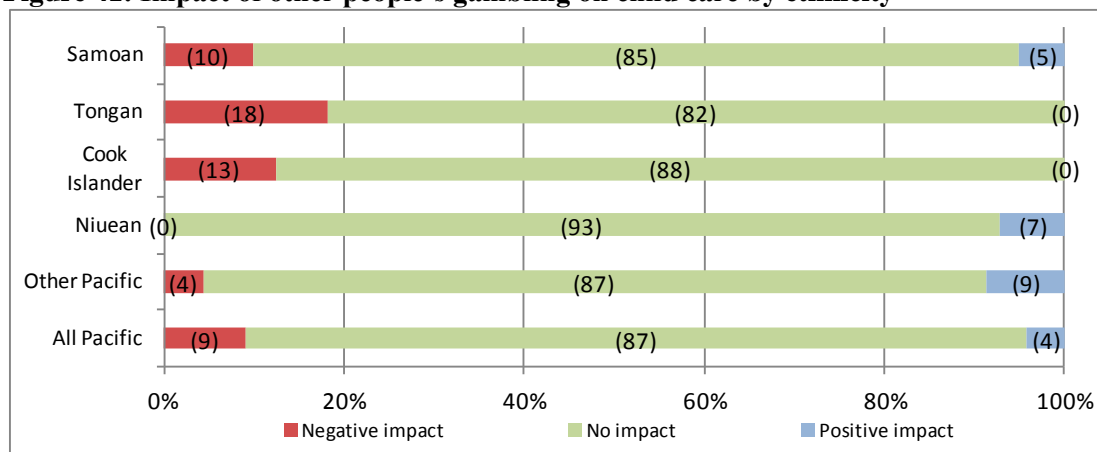
Figure 40: Impact of other people's gambling on relationships by ethnicity



Child care

No Niueans reported negative impacts of another person's gambling on child care compared with the other groups (4% to 18%). Tongan and Cook Islands respondents had the highest percentages reporting negative impacts (18%; n=2 and 13%; n=4 respectively) and none reported positive impacts, whilst five percent to nine percent of the other groups reported positive impacts (Figure 41).

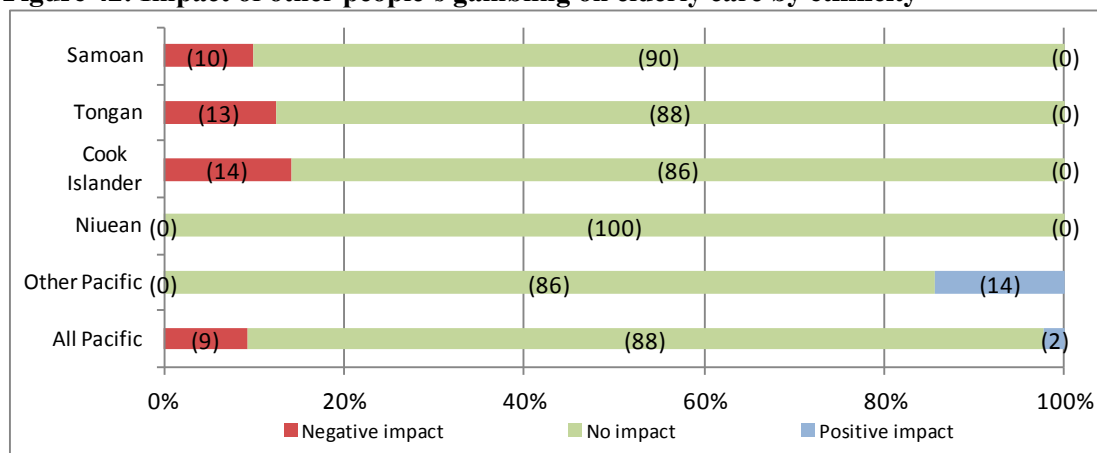
Figure 41: Impact of other people's gambling on child care by ethnicity



Elderly care

Niuean respondents reported no impact of another person's gambling on care giving for the elderly. Samoan, Tongan and Cook Islands respondents reported negative impacts between 10% to 14% and none reported positive impacts. No Other Pacific respondents reported positive impacts but 14% (n=1) reported negative impacts on care giving for the elderly (Figure 42).

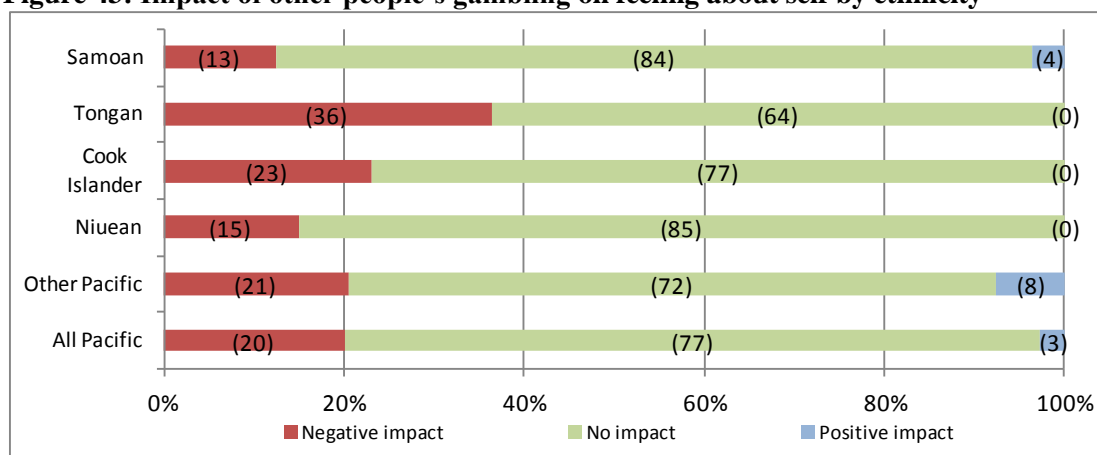
Figure 42: Impact of other people's gambling on elderly care by ethnicity



Feelings about self

There were no major ethnic differences regarding impact on feelings about self caused by another person's gambling with the exception of Tongans, over one-third (36%; n=8) of whom reported negative impacts compared with 13% to 23% for the other groups. None to eight percent of the groups reported positive impacts on feelings about self (Figure 43).

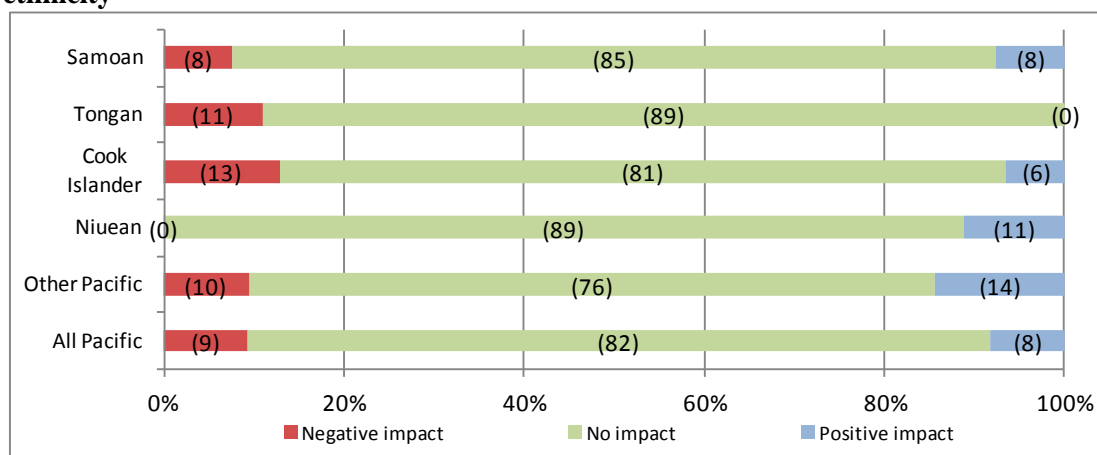
Figure 43: Impact of other people's gambling on feeling about self by ethnicity



Study or work-related training performance

There were no major ethnic differences regarding impact of another person's gambling on the respondents' study or work-related training performance, with the exception of Niueans and Tongans. No Niueans reported negative impacts compared with the other groups (8% to 13%) and no Tongans reported positive impacts compared with the other groups (6% to 14%) (Figure 44).

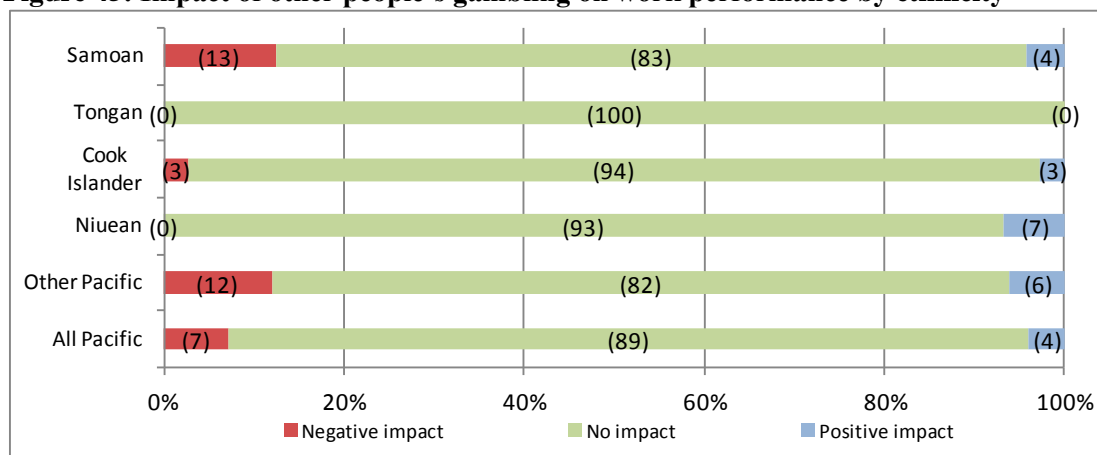
Figure 44: Impact of other people's gambling on study/training performance by ethnicity



Work performance

Tongan respondents reported no impacts of another person's gambling on their own work performance compared with the other groups (82% to 94%). Samoan and Other Pacific respondents had the highest percentages reporting negative impacts (13%; n=6 and 12%; n=4 respectively) compared with Cook Islands (3%; n=1) and Niueans (none). Apart from Tongans, the percentage of the different groups reporting positive impacts ranged from three percent to seven percent (Figure 45).

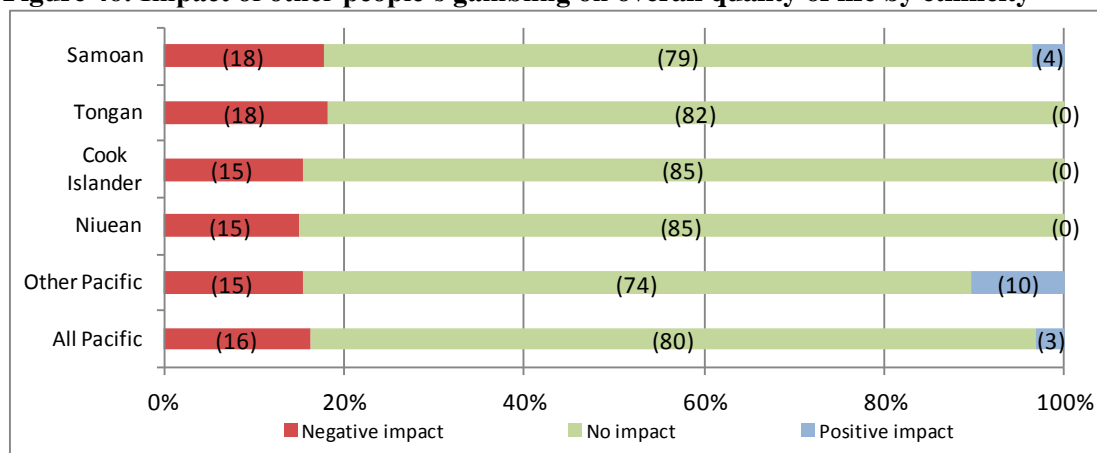
Figure 45: Impact of other people's gambling on work performance by ethnicity



Overall quality of life

There were no major ethnic differences regarding impact on overall quality of life caused by another person's gambling. A majority (79% to 85%) of respondents indicated no impact with 15% to 18% reporting a negative impact. Only Other Pacific and Samoan respondents reported positive impacts (10%; n=4 and 4%; n=2 respectively) (Figure 46).

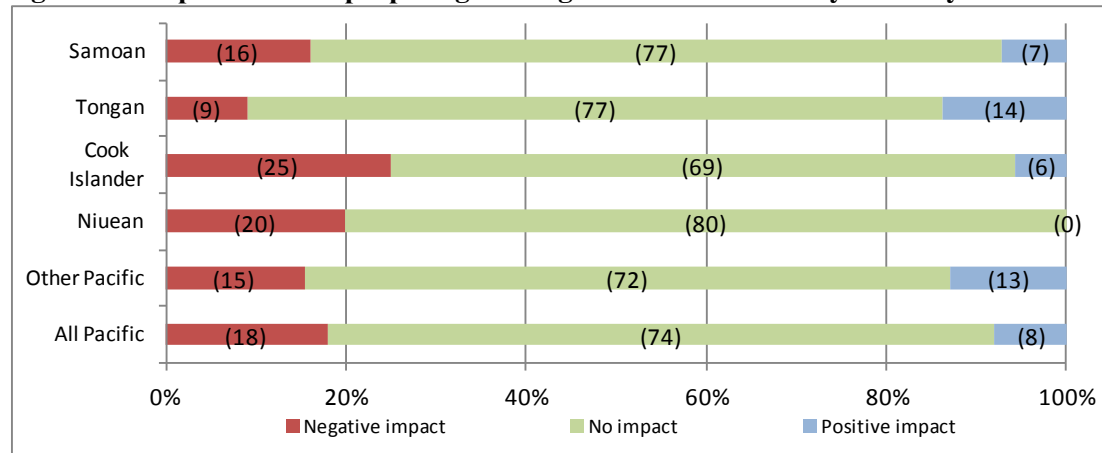
Figure 46: Impact of other people's gambling on overall quality of life by ethnicity



Overall satisfaction with life

A lower percentage of Tongan respondents reported negative impacts on overall life satisfaction due to another person's gambling (9%; n=2) compared with the other groups (15% to 25%). No Niueans reported positive effects compared with six percent to 14% for the other groups (Figure 47).

Figure 47: Impact of other people's gambling on life satisfaction by ethnicity



4.1.7 Section summary

In this section, data from secondary analyses of the Pacific subset of data from the 'Social impacts of gambling in New Zealand' study were examined.

The data subset was split into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean and Other Pacific. The respondents were also categorised into four groups with reference to their gambling participation level in the past 12 months: non-gamblers, Lotto/keno only, 'infrequent continuous' and 'frequent continuous'.

Specific subject areas that were investigated included:

- Respondents' own gambling behaviour
- Opinions on the impacts of gambling on domains of life
- Experiences of someone else's gambling

In general, there were no differences in socio-demographic profile between the ethnic groups or in gambling participation (except where detailed below). Almost three-quarters of the respondents who gambled (71%; n=375) reported losing money on gambling though only 15% (n=81) reported negative financial impacts due to gambling. Thirteen percent (n=69) of respondents who gambled reported winning money overall on gambling.

There were also, in the main, no major differences in the respondents' own gambling on impact on various life domains, although some ethnic and gambling participation variations were noted, as detailed below. Any differences noted were generally more likely to relate to negative impacts than positive impacts. Overall, the most prevalent impact of the respondents' own gambling appeared to be a negative effect (15%; n=81) on *financial situation*. When the respondent was affected by another person's 'fairly heavy' gambling; *financial situation* was again highlighted (21%) as were negative *feelings about self* (20%; n=40) and negative impacts on *life satisfaction* (18%; n=34).

No major differences between the ethnicities were noted in relation to respondents' own gambling on relationships with family/friends, child care, and overall quality of life. No major differences between the ethnicities were noted in relation to another person's gambling on housing situation.

Some differences between the ethnicities were noted in relation to impacts of gambling, either the respondents' own gambling or the gambling of another person. Differences in impacts based on whether the respondents gambled only on Lotto/keno, or were 'infrequent continuous' or 'frequent continuous' gamblers were also noted. *On the whole, a level of statistical significance was not attained and thus these findings should be treated with caution.*

For this Pacific subset a level of statistical significance was attained in the following areas:

- Gambling participation by ethnic group
- Perceived impact of another person's gambling on respondents' relationships with family/friends by ethnic group
- Perceived impact of own gambling on financial situation by gambler type
- Perceived impact of own gambling on overall quality of life by gambler type

Ethnic differences

Tongan

- Tongans were more likely to be *non-gamblers* (59%) and the *least likely* to participate *frequently in continuous forms* of gambling (2%) than the other ethnicities.
- Tongan participants were *least likely* to report any impact of another person's gambling on their own *relationships with family/friends* compared with the other ethnicities.

Gambler type differences

Frequent continuous gamblers

- These gamblers were *substantially more likely* to report *negative* impacts of their own gambling on *financial situation*, and *overall quality of life* than other gambler types.

4.2 Gaming and betting activities survey data set

This section details secondary analyses of the Pacific subset of data from the ‘2006/07 Gaming and betting activities survey’ conducted by National Research Bureau Ltd for the Health Sponsorship Council (2007) and expanding on the original analyses. The total survey sample size was 1,973 respondents aged from 15 years. This included 1,774 adults aged 18 years and over, and 199 youth aged 15 to 17 years. Full methodological details are available in the original report (National Research Bureau, 2007).

The original Pacific data subset of 267 respondents was analysed and categorised into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean and Other Pacific (i.e. those not in the named categories or who identified with multiple ethnic groups). The respondents were also categorised by age group.

Specific subject areas that were investigated included:

- Respondents’ own gambling behaviour (types, frequency)
- Youth respondents’ perception on attractive and unattractive factors that lead them to and/or prevent them from gambling
- Awareness of signs and impacts associated with harmful gambling
- Knowledge and perception of gambling treatment service providers

Due to the small sample sizes, analyses relating to all lotteries gambling (including Lotto, keno and Instant Kiwi) used combined data. As the lottery product category included non-continuous (Lotto/keno) as well as continuous forms (Instant Kiwi) of gambling, it was not possible to analyse gambling participation by gambler type as in sections 4.1 and 4.3.

The original study used sample weighting factors to adjust results to the wider population. Weighting factors were not used in the current secondary analyses as they did not distinguish between Pacific ethnicities (e.g. Samoans vs. Tongans); they only weighted Pacific as a whole versus other major ethnic groups. Thus weighted and un-weighted results would be much the same when comparing the Pacific ethnicities with each other. The distribution of weights was also similar across categorisations by age and gender. Thus, the results presented in the current report are broadly representative of the wider Pacific population. It should be noted that some small amount of bias may be present due to not using the weighting factors; however, this is unlikely to alter any of the conclusions.

Full tables of data to support the figures presented in this section are detailed in Appendix 5.

4.2.1 Participant characteristics

Gender, age and annual household income characteristics of the Pacific subsample are presented in Table 8.

There was a relatively equal distribution of male and female participants for the Samoan and Tongan groups. However, for Cook Islands, Niuean and Other Pacific groups the samples were disproportionately female (64% to 71%). For all ethnicities apart from Cook Islands, about half of the participants (46% to 57%) were aged between 25 to 44 years; one-third (33%; n=12) of Cook Islands participants were in this age range and another 31% (n=11) were in the 45 to 64 year age range. Participants were widely distributed across the annual household income ranges for all ethnicities.

Table 8: Socio-demographic characteristics

	Samoaan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Sex												
Female	59	(55)	30	(56)	23	(64)	17	(71)	29	(64)	158	(59)
Male	49	(45)	24	(44)	13	(36)	7	(29)	16	(36)	109	(41)
Age group												
15-17	15	(14)	9	(17)	3	(8)	1	(4)	4	(9)	32	(12)
18-24	14	(13)	8	(15)	7	(19)	4	(17)	7	(16)	40	(15)
25-44	54	(50)	25	(46)	12	(33)	12	(50)	23	(51)	126	(47)
45-64	21	(19)	9	(17)	11	(31)	5	(21)	6	(13)	52	(19)
65+	4	(4)	3	(6)	3	(8)	2	(8)	5	(11)	17	(6)
Household income (annual; before tax)												
Up to \$30,000	26	(24)	17	(31)	7	(19)	7	(29)	15	(33)	72	(27)
\$30,001 - \$50,000	10	(9)	10	(19)	7	(19)	7	(29)	8	(18)	42	(16)
\$50,001 - \$70,000	27	(25)	6	(11)	2	(6)	3	(13)	9	(20)	47	(18)
\$70,001 - \$100,000	20	(19)	3	(6)	5	(14)	2	(8)	6	(13)	36	(13)
Over \$100,000	10	(9)	7	(13)	5	(14)	1	(4)	3	(7)	26	(10)
Unknown	15	(14)	11	(20)	10	(28)	4	(17)	4	(9)	44	(16)

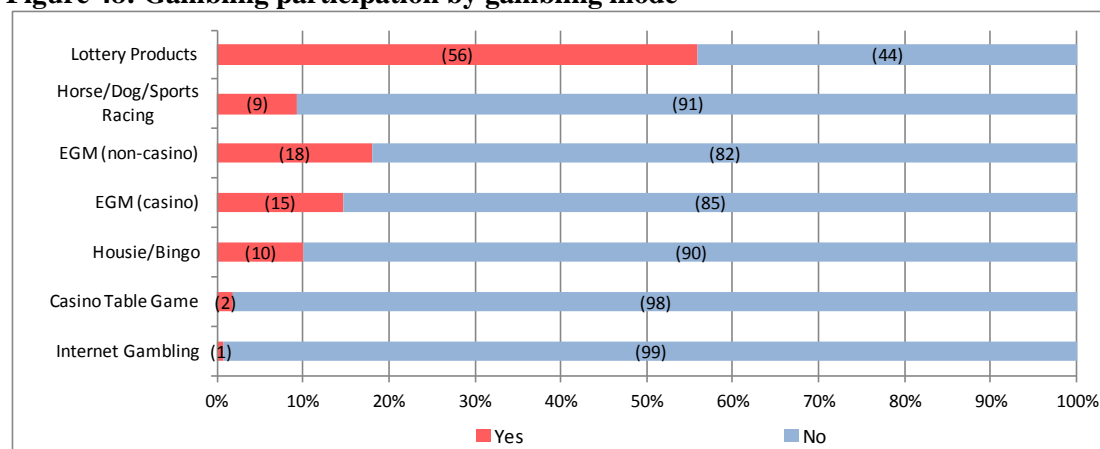
4.2.2 Gambling behaviour

This sub-section relates to gambling participation in the past 12-month time period.

Gambling participation by gambling mode

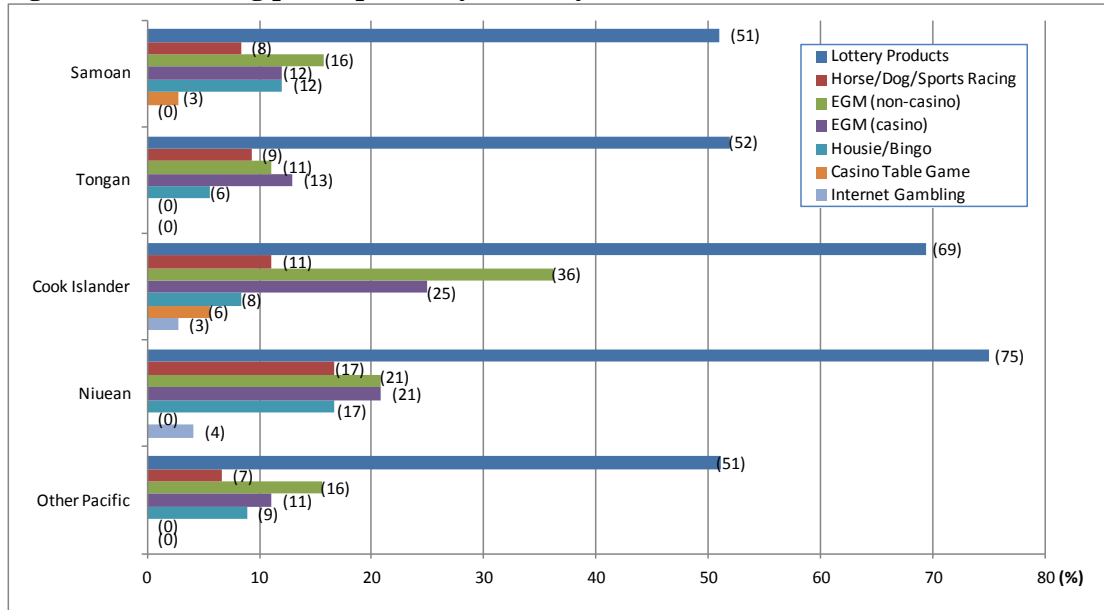
Lottery products were the most popular form of gambling with 56% (n=149) of respondents reporting participation in the past year. Participation in electronic gaming machines (casino and non-casino) was the next most popular but by a substantially lower percentage at 15% (n=39) and 18% (n=48) of respondents respectively. The other forms of gambling were participated in by 10% or less of the respondents (Figure 48).

Figure 48: Gambling participation by gambling mode



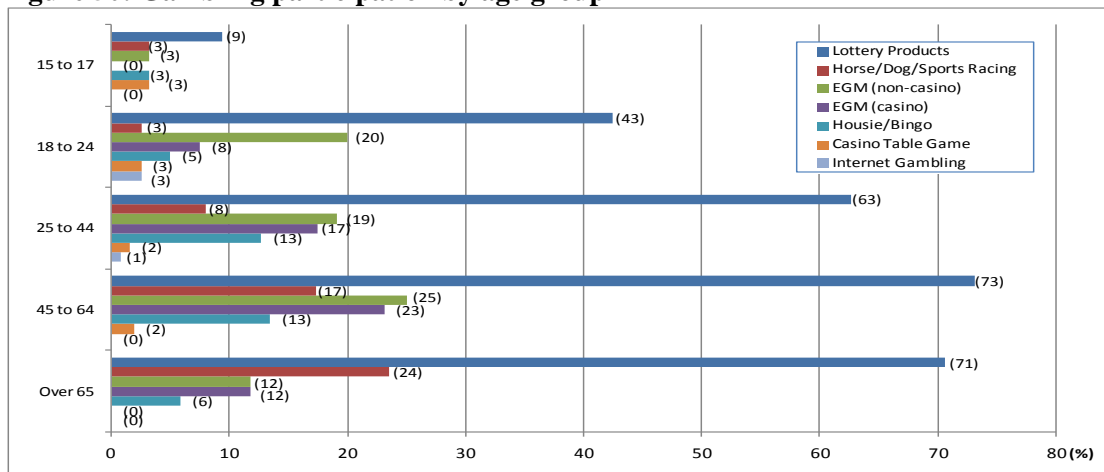
When examined by ethnicity, the only finding to achieve a level of statistical significance was for past-year non-casino electronic gaming machine gambling (p=0.049). A higher percentage of Cook Islands respondents (36%, n=13) reported this mode of gambling in comparison with the other ethnic groups (11% to 21%) (Figure 49).

Figure 49: Gambling participation by ethnicity



When examined by age, the only findings to achieve a level of statistical significance were for lottery products ($p < 0.001$), horse/dog/sports racing ($p = 0.02$) and casino electronic gaming machine gambling ($p = 0.012$) in the past year. Youth respondents aged 15 to 17 years were least likely to participate in lottery products gambling (9%, $n = 3$) compared with the adult gamblers (43% to 71%). Youth respondents and young adults aged 18 to 24 years were less likely to participate in horse/dog/sports racing (each at 3%, $n = 1$) compared with the other age groups (8% to 24%). No youth respondents participated in casino electronic gaming machine gambling compared with the adult gamblers (8% to 23%). However, this latter finding is to be expected as there is a minimum age of 20 years to enter and gamble in casinos. Interestingly, one youth respondent (3%) reported gambling on casino table games (Figure 50).

Figure 50: Gambling participation by age group



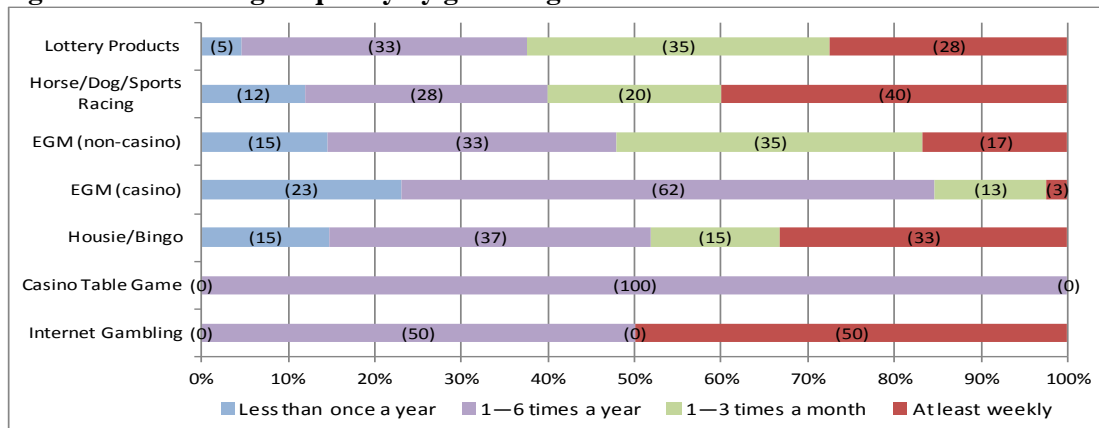
Gambling frequency

Overall

Figure 51 details overall gambling frequency by gambling mode.

The overall frequency with which respondents participated in the different forms of gambling varied considerably depending on the gambling mode. All five casino table game respondents reported participation of one to six times per year. For the other forms of gambling, weekly participation was reported by three percent (n=1) of respondents for casino electronic gaming machines to 50% (n=1) for internet gambling. The remaining internet gambler reported participation of one to six times per year. Participation of one to three times a month was noted by 13% (n=5) of respondents for casino electronic gaming machines to 35% (n=52) for lotteries products. Very infrequent participation at less than once per year was noted by five percent (n=7) of respondents for lottery products to 23% (n=9) for casino electronic gaming machines. However, these results should be treated with extreme caution due to the very small samples sizes for some modes of gambling, particularly internet and casino table game gambling, and robust inferences regarding frequency of gambling are not possible.

Figure 51: Gambling frequency by gambling mode

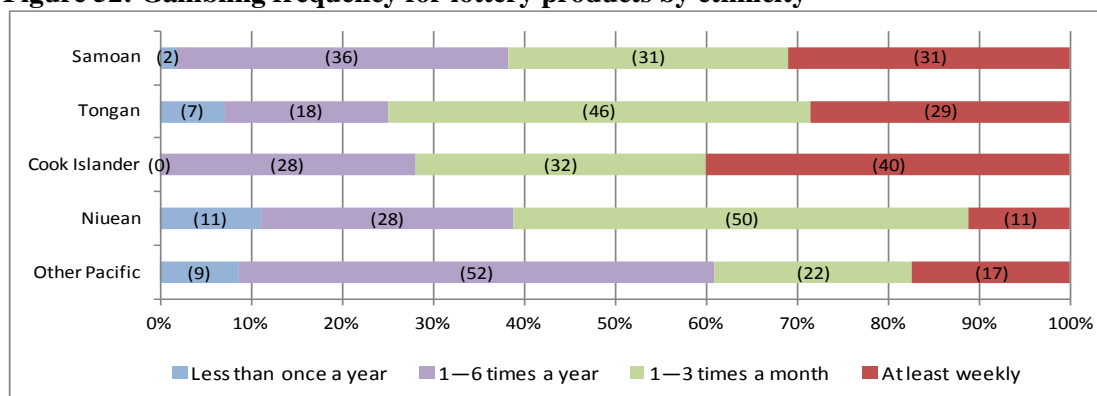


Gambling frequency by gambling mode and ethnicity

When gambling frequency was examined by ethnicity, a lower percentage of Niuean (11%; n=2) and Other Pacific (17%; n=4) respondents reported gambling at least weekly on lottery products compared with the other ethnic groups (31% to 40%). A higher percentage of Other Pacific respondents reported gambling one to six times a year (52%; n=12 vs. 18% to 36%). No Cook Islands respondents reported gambling on lottery products less than once a year (Figure 52).

For all the other modes of gambling, the sample sizes were very small for some or all groups. Thus, robust interpretation of the findings is not possible and figures have not been presented. The data are available in Appendix 5, Table B3.

Figure 52: Gambling frequency for lottery products by ethnicity

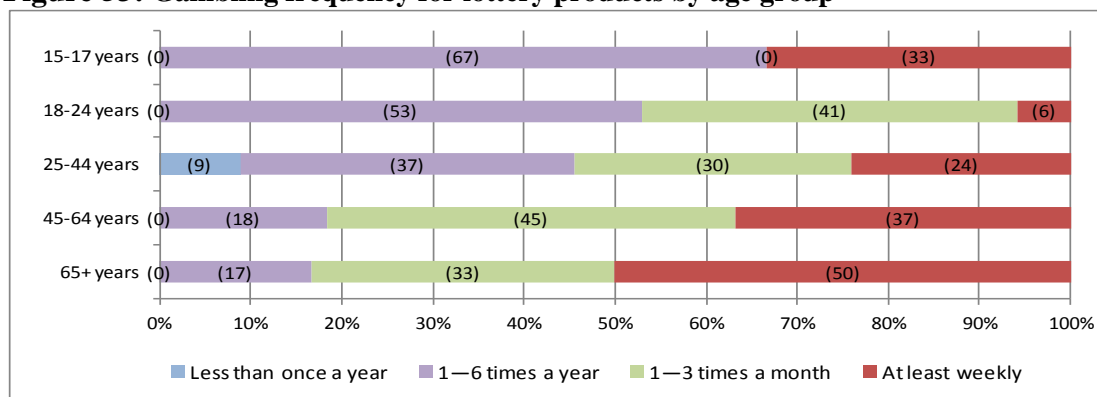


Gambling frequency by gambling mode and age

When gambling frequency was examined by age, the percentage of respondents participating at least weekly on lottery products increased with age from six percent (n=1) of 18 to 24 year olds to half (50%; n=6) of the 65+ age group. Youth participants aged 15 to 17 years are not discussed here due to the very small sample size (n=7) which precludes any conclusions being made. Conversely, the percentage of respondents participating one to six times a year decreased with age from 53% (n=9) of 18 to 24 year olds to 17% (n=2) of the 65+ age group. Only respondents in the 25 to 44 year age group reported gambling on lottery products less than once a year (9%; n=7) (Figure 53).

For all the other modes of gambling, the sample sizes were very small for some or all groups. Thus, robust interpretation of the findings is not possible and figures have not been presented. The data are available in Appendix 5, Table B4.

Figure 53: Gambling frequency for lottery products by age group



4.2.3 Attractive and unattractive factors leading to or preventing gambling

Youth aged between 15 to 17 years were asked about: (i) attractive factors they could think of that lead young people to start gambling, and (ii) unattractive factors they could think of that discourage young people from gambling.

Attractive factors

Table 9 details attractive factors leading young people to gambling.

Apart from Samoan and Tongan groups, the sample sizes were very small and preclude robust interpretations of the data for the other ethnic groups. However, when data were examined

overall (All Pacific) the only factor endorsed by a majority of respondents was ‘to win money’ (56%; n=18). This was followed by ‘starting with particular games’ at 22% (n=7). Other attractive factors were endorsed by nine percent or less of the participants. These findings also need to be viewed with caution as they may be skewed by the small sample sizes.

Over three-quarters (78%; n=7) of Tongan youth thought that ‘to win money’ was an attractive factor leading to gambling compared with half (53%; n=8) of the Samoan youth. A similar percentage of Samoan (13%; n=2) and Tongan (11%; n=1) youth endorsed ‘starting with particular games’.

Table 9: Attractive factors leading young people to gambling

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
To win money												
Yes	8	(53)	7	(78)	1	(33)	0	(0)	2	(50)	18	(56)
No	7	(47)	2	(22)	2	(67)	1	(100)	2	(50)	14	(44)
Starting with particular games												
Yes	2	(13)	1	(11)	2	(67)	1	(100)	1	(25)	7	(22)
No	13	(87)	8	(89)	1	(33)	0	(0)	3	(75)	25	(78)
To win prizes												
Yes	2	(13)	1	(11)	0	(0)	0	(0)	0	(0)	3	(9)
No	13	(87)	8	(89)	3	(100)	1	(100)	4	(100)	29	(91)
Social reasons/fun												
Yes	1	(7)	1	(11)	1	(33)	0	(0)	0	(0)	3	(9)
No	14	(93)	8	(89)	2	(67)	1	(100)	4	(100)	29	(91)
Advertising												
Yes	1	(7)	1	(11)	0	(0)	0	(0)	1	(25)	3	(9)
No	14	(93)	8	(89)	3	(100)	1	(100)	3	(75)	29	(91)
Friends doing it/peer pressure												
Yes	2	(13)	0	(0)	0	(0)	0	(0)	1	(25)	3	(9)
No	13	(87)	9	(100)	3	(100)	1	(100)	3	(75)	29	(91)
Trendy/cool/see others gambling/see others winning												
Yes	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	1	(3)
No	15	(100)	9	(100)	3	(100)	0	(0)	1	(100)	28	(97)
Parents do it												
Yes	1	(7)	0	(0)	0	(0)	0	(0)	1	(25)	2	(6)
No	14	(93)	9	(100)	3	(100)	1	(100)	3	(75)	30	(94)
Easy way to get money												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	1	(25)	1	(3)
No	15	(100)	9	(100)	3	(100)	1	(100)	3	(75)	31	(97)
Excitement/thrill												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	15	(100)	9	(100)	3	(100)	1	(100)	4	(100)	32	(100)

Unattractive factors

Table 10 details unattractive factors discouraging young people from gambling.

Apart from Samoan and Tongan groups, the sample sizes were very small and preclude robust interpretations of the data for the other ethnic groups. However, when data were examined overall (All Pacific) the top three factors endorsed were ‘losing money/see others lose money’ (41%; n=13), ‘initial outlay to gamble’ (22%; n=7), and ‘getting into debt/financial difficulty’ (13%; n=4). Other unattractive factors were endorsed by six percent or less of the participants. These findings also need to be viewed with caution as they may be skewed by the small sample sizes. No Tongan youth endorsed the ‘initial outlay to gamble’ option compared with one-fifth (20%; n=3) of the Samoan youth.

Table 10: Unattractive factors discouraging young people from gambling

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Losing money/see others lose money												
Yes	5	(33)	4	(44)	2	(67)	0	(0)	2	(50)	13	(41)
No	10	(67)	5	(56)	1	(33)	1	(100)	2	(50)	19	(59)
Initial outlay to gamble												
Yes	3	(20)	0	(0)	1	(33)	1	(100)	2	(50)	7	(22)
No	12	(80)	9	(100)	2	(67)	0	(0)	2	(50)	25	(78)
Getting into debt/financial difficulty												
Yes	1	(7)	2	(22)	0	(0)	0	(0)	1	(25)	4	(13)
No	14	(93)	7	(78)	3	(100)	1	(100)	3	(75)	28	(88)
General negative effects												
Yes	1	(7)	1	(11)	0	(0)	0	(0)	0	(0)	2	(6)
No	14	(93)	8	(89)	3	(100)	1	(100)	4	(100)	30	(94)
Have other interests												
Yes	2	(13)	0	(0)	0	(0)	0	(0)	0	(0)	2	(6)
No	13	(87)	9	(100)	3	(100)	1	(100)	4	(100)	30	(94)
Having enough money												
Yes	1	(7)	1	(11)	0	(0)	0	(0)	0	(0)	2	(6)
No	14	(93)	8	(89)	3	(100)	1	(100)	4	(100)	30	(94)
Risk of addiction												
Yes	0	(0)	0	(0)	1	(33)	0	(0)	0	(0)	1	(3)
No	15	(100)	9	(100)	2	(67)	1	(100)	4	(100)	31	(97)
Effects on family/other people												
Yes	0	(0)	1	(11)	0	(0)	0	(0)	0	(0)	1	(3)
No	15	(100)	8	(89)	3	(100)	1	(100)	4	(100)	31	(97)
More anti-gambling advertising/less pro-gambling												
Yes	1	(7)	0	(0)	0	(0)	0	(0)	0	(0)	1	(3)
No	14	(93)	9	(100)	3	(100)	1	(100)	4	(100)	31	(97)
Being boring/not enjoyable												
Yes	0	(0)	0	(0)	1	(33)	0	(0)	0	(0)	1	(3)
No	15	(100)	9	(100)	2	(67)	1	(100)	4	(100)	31	(97)
Knowing the odds												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	15	(100)	9	(100)	3	(100)	1	(100)	4	(100)	32	(100)
Parental influence												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	15	(100)	9	(100)	3	(100)	1	(100)	4	(100)	32	(100)

4.2.4 Awareness and knowledge about harmful gambling

All participants were asked if they could describe the signs that indicate a person is gambling at a harmful level and if they responded in the affirmative, they were asked what those signs were. Participants were also asked about their knowledge of the potential impacts of harmful gambling on a person and their household; adults were asked whether they or their households had used any strategies to avoid gambling too much.

Awareness about signs of harmful gambling

There were no apparent ethnic differences in being able to describe signs of harmful gambling with two-thirds to three-quarters (69% to 73%) of respondents reporting in the affirmative (Table 11).

Table 11: Able to describe signs of harmful gambling by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	79	(73)	37	(69)	26	(72)	17	(71)	32	(71)	191	(72)
No	29	(27)	17	(31)	10	(28)	7	(29)	13	(29)	76	(28)

Similarly, there were no major age-related differences in being able to describe signs of harmful gambling although a slightly lower percentage of respondents in the lowest and highest age groups were able to do so (54%; n=18 and 65%; n=11 respectively) compared with the other age groups (71% to 76%) (Table 12).

Table 12: Able to describe signs of harmful gambling by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	18	(54)	28	(71)	96	(76)	38	(72)	11	(65)	191	(72)
No	14	(46)	12	(29)	30	(24)	14	(28)	6	(35)	76	(28)

The top 10 mentioned signs of harmful gambling were identified by 32% (n=62) (sign number 1) to 12% (n=23) (sign number 10) of the participants.

Each of the top three signs was mentioned by a slightly higher percentage of Niueans than the other ethnic groups: 'Financial problems' (53%; n=9 vs. 23% to 34%), 'anxious/paranoid/nervous/stressed' (41%; n=7 vs. 16% to 30%) and 'borrowing money from family' (41%; n=7 vs. 22% to 31%), (Table 13). For the other signs, sample sizes in some or all groups were small and preclude robust interpretation of the data.

Table 13: Top 10 signs of harmful gambling by ethnicity

	Samoaan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Financial problems												
Yes	27	(34)	9	(24)	6	(23)	9	(53)	11	(34)	62	(32)
No	52	(66)	28	(76)	20	(77)	8	(47)	21	(66)	129	(68)
Anxious/paranoid/nervous/stressed												
Yes	24	(30)	9	(24)	6	(23)	7	(41)	5	(16)	51	(27)
No	55	(70)	28	(76)	20	(77)	10	(59)	27	(84)	140	(73)
Borrowing money from family												
Yes	18	(23)	8	(22)	8	(31)	7	(41)	8	(25)	49	(26)
No	61	(77)	29	(78)	18	(69)	10	(59)	24	(75)	142	(74)
Unable to pay household bills/food/rent												
Yes	18	(23)	11	(30)	8	(31)	5	(29)	5	(16)	47	(25)
No	61	(77)	26	(70)	18	(69)	12	(71)	27	(84)	144	(75)
Obsessed with gambling												
Yes	17	(22)	4	(11)	6	(23)	3	(18)	9	(28)	39	(20)
No	62	(78)	33	(89)	20	(77)	14	(82)	23	(72)	152	(80)
Angry/aggressive												
Yes	9	(11)	5	(14)	6	(23)	3	(18)	6	(19)	29	(15)
No	70	(89)	32	(86)	20	(77)	14	(82)	26	(81)	162	(85)
Relationship problems												
Yes	11	(14)	8	(22)	4	(15)	0	(0)	5	(16)	28	(15)
No	68	(86)	29	(78)	22	(85)	17	(100)	27	(84)	163	(85)
Lying/deceitful/secretive												
Yes	10	(13)	5	(14)	4	(15)	3	(18)	4	(13)	26	(14)
No	69	(87)	32	(86)	22	(85)	14	(82)	28	(88)	165	(86)
Not looking after themselves/lacking sleep/not eating												
Yes	7	(9)	7	(19)	3	(12)	3	(18)	4	(13)	24	(13)
No	72	(91)	30	(81)	23	(88)	14	(82)	28	(88)	167	(87)
Depressed/unhappy/suicidal/desperate												
Yes	7	(9)	8	(22)	4	(15)	2	(12)	2	(6)	23	(12)
No	72	(91)	29	(78)	22	(85)	15	(88)	30	(94)	168	(88)

No major age group differences were noted in the identification of 'financial problems' as a harmful sign (26% to 45%). A lower percentage of the youngest and oldest age groups mentioned 'borrowing money from family' (11%, n=2 and 18%, n=2 respectively) compared with the other age groups; whilst the 18 to 24 year age group were most likely to mention this sign (39%; n=11). No respondents in the 65+ age group mentioned 'anxious/paranoid/nervous/stressed' compared with 26% to 33% of the other age groups (Table 14). For the other signs, sample sizes in some or all groups were small and preclude robust interpretation of the data.

Table 14: Top 10 signs of harmful gambling by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Financial problems												
Yes	7	(39)	8	(29)	25	(26)	17	(45)	5	(45)	62	(32)
No	11	(61)	20	(71)	71	(74)	21	(55)	6	(55)	129	(68)
Anxious/paranoid/nervous/stressed												
Yes	6	(33)	9	(32)	25	(26)	11	(29)	0	(0)	51	(27)
No	12	(67)	19	(68)	71	(74)	27	(71)	11	(100)	140	(73)
Borrowing money from family												
Yes	2	(11)	11	(39)	24	(25)	10	(26)	2	(18)	49	(26)
No	16	(89)	17	(61)	72	(75)	28	(74)	9	(82)	142	(74)
Unable to pay household bills/food/rent												
Yes	2	(11)	5	(18)	26	(27)	11	(29)	3	(27)	47	(25)
No	16	(89)	23	(82)	70	(73)	27	(71)	8	(73)	144	(75)
Obsessed with gambling												
Yes	7	(39)	6	(21)	20	(21)	6	(16)	0	(0)	39	(20)
No	11	(61)	22	(79)	76	(79)	32	(84)	11	(100)	152	(80)
Angry/aggressive												
Yes	3	(17)	6	(21)	13	(14)	6	(16)	1	(9)	29	(15)
No	15	(83)	22	(79)	83	(86)	32	(84)	10	(91)	162	(85)
Relationship problems												
Yes	3	(17)	3	(11)	15	(16)	5	(13)	2	(18)	28	(15)
No	15	(83)	25	(89)	81	(84)	33	(87)	9	(82)	163	(85)
Lying/deceitful/secretive												
Yes	2	(11)	5	(18)	13	(14)	5	(13)	1	(9)	26	(14)
No	16	(89)	23	(82)	83	(86)	33	(87)	10	(91)	165	(86)
Not looking after themselves/lacking sleep/not eating												
Yes	2	(11)	2	(7)	14	(15)	5	(13)	1	(9)	24	(13)
No	16	(89)	26	(93)	82	(85)	33	(87)	10	(91)	167	(87)
Depressed/unhappy/suicidal/desperate												
Yes	0	(0)	4	(14)	12	(13)	6	(16)	1	(9)	23	(12)
No	18	(100)	24	(86)	84	(88)	32	(84)	10	(91)	168	(88)

Knowledge of potential impacts of harmful gambling on a person and their household

The top 10 mentioned impacts of harmful gambling on a person and their household were identified by 37% (n=83) (impact number 1) to seven percent (n=15) (impact number 10) of the participants.

The top impact ‘unable to pay for household bills/food/rent’ was mentioned by a similar percentage across the ethnic groups (32% to 40%). Niueans showed a slightly different profile from the other ethnic groups for the next mentioned impact: ‘Financial hardship/debt/bankruptcy’ was identified by a slightly lower percentage of Niueans in comparison with the other ethnic groups (18%; n=4 vs. 28% to 39%) (Table 15). For the other signs, sample sizes in some or all groups were small and preclude robust interpretation of the data.

Table 15: Top 10 potential impacts by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Unable to pay for household bills/food/rent												
Yes	35	(39)	17	(36)	10	(40)	7	(32)	14	(37)	83	(37)
No	55	(61)	30	(64)	15	(60)	15	(68)	24	(63)	139	(63)
Financial hardship/debt/bankruptcy												
Yes	35	(39)	13	(28)	9	(36)	4	(18)	14	(37)	75	(34)
No	55	(61)	34	(72)	16	(64)	18	(82)	24	(63)	147	(66)
Broken marriages/family												
Yes	19	(21)	9	(19)	6	(24)	8	(36)	13	(34)	55	(25)
No	71	(79)	38	(81)	19	(76)	14	(64)	25	(66)	167	(75)
Children neglected/suffer												
Yes	21	(23)	9	(19)	1	(4)	4	(18)	8	(21)	43	(19)
No	69	(77)	38	(81)	24	(96)	18	(82)	30	(79)	179	(81)
Strained relationships												
Yes	17	(19)	8	(17)	4	(16)	5	(23)	7	(18)	41	(18)
No	73	(81)	39	(83)	21	(84)	17	(77)	31	(82)	181	(82)
Arguments/disputes in household												
Yes	8	(9)	5	(11)	2	(8)	2	(9)	6	(16)	23	(10)
No	82	(91)	42	(89)	23	(92)	20	(91)	32	(84)	199	(90)
Stress												
Yes	9	(10)	5	(11)	2	(8)	3	(14)	0	(0)	19	(9)
No	81	(90)	42	(89)	23	(92)	19	(86)	38	(100)	203	(91)
Anger/violence/aggression												
Yes	7	(8)	6	(13)	1	(4)	2	(9)	1	(3)	17	(8)
No	83	(92)	41	(87)	24	(96)	20	(91)	37	(97)	205	(92)
Depression/unhappiness												
Yes	7	(8)	2	(4)	2	(8)	1	(5)	5	(13)	17	(8)
No	83	(92)	45	(96)	23	(92)	21	(95)	33	(87)	205	(92)
Loss/repossession of assets/personal assets												
Yes	5	(6)	5	(11)	3	(12)	0	(0)	2	(5)	15	(7)
No	85	(94)	42	(89)	22	(88)	22	(100)	36	(95)	207	(93)

A slightly lower percentage of respondents in the 18 to 24 year age group (19%; n=6) mentioned ‘unable to pay for household bills/food/rent’ compared with the other age groups (29% to 46%). A slightly higher percentage of respondents in the 15 to 17 year age group (58%; n=14) mentioned ‘financial hardship/debt/bankruptcy’ compared with the other age groups (26% to 46%). A slightly lower percentage of respondents in the 65+ age group (15%; n=2) mentioned ‘broken marriages/family’ compared with the other age groups (21% to 28%) (Table 16). For the other impacts, sample sizes in some or all groups were small and preclude robust interpretation of the data.

Table 16: Top 10 potential impacts by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Unable to pay for household bills/food/rent												
Yes	7	(29)	6	(19)	44	(35)	25	(46)	5	(38)	87	(35)
No	17	(71)	26	(81)	82	(65)	29	(54)	8	(62)	162	(65)
Financial hardship/debt/bankruptcy												
Yes	14	(58)	10	(31)	33	(26)	22	(41)	6	(46)	85	(34)
No	10	(42)	22	(69)	93	(74)	32	(59)	7	(54)	164	(66)
Broken marriages/family												
Yes	5	(21)	9	(28)	30	(24)	14	(26)	2	(15)	60	(24)
No	19	(79)	23	(72)	96	(76)	40	(74)	11	(85)	189	(76)
Children neglected/suffer												
Yes	2	(8)	3	(9)	23	(18)	13	(24)	3	(23)	44	(18)
No	22	(92)	29	(91)	103	(82)	41	(76)	10	(77)	205	(82)
Strained relationships												
Yes	3	(13)	6	(19)	21	(17)	12	(22)	1	(8)	43	(17)
No	21	(88)	26	(81)	105	(83)	42	(78)	12	(92)	206	(83)
Arguments/disputes in household												
Yes	3	(13)	4	(13)	16	(13)	5	(9)	1	(8)	29	(12)
No	21	(88)	28	(88)	110	(87)	49	(91)	12	(92)	220	(88)
Stress												
Yes	2	(8)	7	(22)	8	(6)	3	(6)	0	(0)	20	(8)
No	22	(92)	25	(78)	118	(94)	51	(94)	13	(100)	229	(92)
Anger/violence/aggression												
Yes	0	(0)	2	(6)	14	(11)	2	(4)	0	(0)	18	(7)
No	24	(100)	30	(94)	112	(89)	52	(96)	13	(100)	231	(93)
Depression/unhappiness												
Yes	2	(8)	2	(6)	8	(6)	3	(6)	2	(15)	17	(7)
No	22	(92)	30	(94)	118	(94)	51	(94)	11	(85)	232	(93)
Loss/repossession of assets/personal assets												
Yes	2	(9)	1	(3)	8	(7)	4	(8)	0	(0)	15	(7)
No	20	(91)	30	(97)	100	(93)	44	(92)	13	(100)	207	(93)

Strategies to prevent gambling too much

Of the 267 respondents, one-quarter (27%; n=71) reported that they or a member of their household had used strategies in an attempt to avoid excessive gambling. A majority of the respondents had either avoided places with betting/gambling as an attraction (68%; n=48) or had set a dollar figure for gambling before leaving home (59%; n=42). Two-fifths (42%; n=30) had separated the money for betting and stopped gambling when it was used and/or left Automated Teller Machine (ATM) and credit cards at home. Just under one-third (31%; n=22) of respondents had asked someone they trusted to manage their money and/or set a time limit for gambling (27%; n=4).

Whilst percentage ranges were broad across the ethnic groups for the strategies, some differences were noted. Niueans were more likely to set a dollar figure for gambling before leaving home compared with the other ethnic groups (86%; n=6 vs. 40% to 67%) and were less likely to ask someone they trusted to manage their money (14%; n=1 vs. 29% to 40%). Cook Islands respondents were more likely to separate the money for betting and stopped gambling when it was used compared with the other ethnic groups (69%; n=9 vs. 29% to 40%) (Table 17).

Table 17: Strategy to avoid excessive gambling by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Avoiding places with betting/gambling as attraction												
Yes	13	(62)	12	(80)	10	(77)	5	(71)	8	(53)	48	(68)
No	8	(38)	3	(20)	3	(23)	2	(29)	7	(47)	23	(32)
Setting a dollar figure before leaving home												
Yes	14	(67)	9	(60)	7	(54)	6	(86)	6	(40)	42	(59)
No	7	(33)	6	(40)	6	(46)	1	(14)	9	(60)	29	(41)
Separating money for betting and stopping when it's used												
Yes	8	(38)	5	(33)	9	(69)	2	(29)	6	(40)	30	(42)
No	13	(62)	10	(67)	4	(31)	5	(71)	9	(60)	41	(58)
Leaving ATM and credit cards at home												
Yes	10	(48)	5	(33)	6	(46)	2	(29)	7	(47)	30	(42)
No	11	(52)	10	(67)	7	(54)	5	(71)	8	(53)	41	(58)
Getting someone you trust to manage the money												
Yes	6	(29)	5	(33)	4	(31)	1	(14)	6	(40)	22	(31)
No	15	(71)	10	(67)	9	(69)	6	(86)	9	(60)	49	(69)
Setting a time limit												
Yes	6	(29)	5	(33)	5	(38)	2	(29)	5	(26)	4	(27)
No	15	(71)	10	(67)	8	(62)	5	(71)	14	(74)	11	(73)

When examined by age, it was noticeable that in general, the 18 to 24 year and the 65+ year age groups used strategies to a different extent than the 25 to 44 year and 45 to 64 year age groups (Table 18).

A lower percentage of the eight respondents in the 18 to 24 year age group set a dollar figure for gambling before leaving home compared with the other age groups (13%; n=1 vs. 60% to 68%) and/or separated the money for betting and stopped gambling when it was used (25%; n=2 vs. 40% to 50%).

A lower percentage of the five respondents in the 65+ age group avoided places with betting/gambling as an attraction compared with the other age groups (40%; n=2 vs. 65% to 75%), whilst a higher percentage asked someone they trusted to manage their money (60%; n=3 vs. 25% to 38%).

A lower percentage of both the 18 to 24 year age group (13%; n=1) and the 65+ age group (20%; n=1) reported leaving ATM and credit cards at home as a strategy compared with the other age groups (47% to 50%) and/or set a time limit for their gambling (13%; n=1 and 0%; n=0 respectively vs. 26% to 50%).

Table 18: Strategy to avoid excessive gambling by age group

	18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Avoiding places with betting/gambling as attraction										
Yes	6	(75)	22	(65)	18	(75)	2	(40)	48	(68)
No	2	(25)	12	(35)	6	(25)	3	(60)	23	(32)
Setting a dollar figure before leaving home										
Yes	1	(13)	23	(68)	15	(63)	3	(60)	42	(59)
No	7	(88)	11	(32)	9	(38)	2	(40)	29	(41)
Separating money for betting and stopping when it's used										
Yes	2	(25)	14	(41)	12	(50)	2	(40)	30	(42)
No	6	(75)	20	(59)	12	(50)	3	(60)	41	(58)
Leaving ATM and credit cards at home										
Yes	1	(13)	16	(47)	12	(50)	1	(20)	30	(42)
No	7	(88)	18	(53)	12	(50)	4	(80)	41	(58)
Getting someone you trust to manage the money										
Yes	3	(38)	10	(29)	6	(25)	3	(60)	22	(31)
No	5	(63)	24	(71)	18	(75)	2	(40)	49	(69)
Setting a time limit										
Yes	1	(13)	9	(26)	12	(50)	0	(0)	22	(31)
No	7	(88)	25	(74)	12	(50)	5	(100)	49	(69)

4.2.5 Knowledge and perception about gambling treatment service providers

All participants were asked if they could name any service or organisation that they could direct a person to for help if they had problems with gambling and then were asked to name the services they had heard of. They were asked if they would feel comfortable referring a friend or family member to the services (which were listed to them) and were also asked why they would not feel comfortable.

Knowledge about gambling treatment service providers

Fifty-six percent (n=149) of the respondents were able to name a gambling treatment service provider, ranging from 41% to 67% for the different ethnic groups (Table 19). The younger age groups were least likely to be able to name a treatment service (19%; n=6 for 15 to 17 years and 38%; n=15 for 18 to 24 years) compared with the other age groups (59% to 67%) (Table 20).

Table 19: Able to name a treatment service provider by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	65	(60)	22	(41)	18	(50)	16	(67)	28	(62)	149	(56)
No	42	(39)	32	(59)	18	(50)	8	(33)	17	(38)	117	(44)

Table 20: Able to name a treatment service provider by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	6	(19)	15	(38)	84	(67)	34	(65)	10	(59)	149	(56)
No	26	(81)	25	(63)	41	(33)	18	(35)	7	(41)	117	(44)

The 0800 telephone helpline was the most known treatment service (49%; n=73) reported by those who could name a service, although a lower percentage of Cook Islands respondents (22%; n=4) reported knowing of the helpline compared with the other ethnic groups (43% to 57%). All other services were known by 12% or less of the respondents; ethnic differences are difficult to interpret due to the small sample sizes (Table 21).

Table 21: Top five treatment service providers by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
0800 Telephone helpline												
Yes	37	(57)	12	(55)	4	(22)	8	(50)	12	(43)	73	(49)
No	28	(43)	10	(45)	14	(78)	8	(50)	16	(57)	76	(51)
Counsellor												
Yes	7	(11)	2	(9)	3	(17)	3	(19)	3	(11)	18	(12)
No	58	(89)	20	(91)	15	(83)	13	(81)	25	(89)	131	(88)
Gamblers Anonymous												
Yes	10	(15)	0	(0)	3	(17)	1	(6)	2	(7)	16	(11)
No	55	(85)	22	(100)	15	(83)	15	(94)	26	(93)	133	(89)
Church												
Yes	3	(5)	4	(18)	3	(17)	1	(6)	2	(7)	13	(9)
No	62	(95)	18	(82)	15	(83)	15	(94)	26	(93)	136	(91)
GP, practice nurse or other health professional												
Yes	4	(6)	0	(0)	5	(28)	1	(6)	1	(4)	11	(7)
No	61	(94)	22	(100)	13	(72)	15	(94)	27	(96)	138	(93)

All six of the youth respondents reported knowing of the 0800 telephone service but not of any other gambling treatment services. Of the adult respondents, the 45 to 64 year age group were least likely to know of the telephone service (29%; n=10) compared with the other age groups (50% to 53%). Age group differences for the other services are difficult to interpret due to the small sample sizes (Table 22).

Table 22: Top five treatment service providers by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
0800 Telephone helpline												
Yes	6	(100)	8	(53)	44	(52)	10	(29)	5	(50)	73	(49)
No	0	(0)	7	(47)	40	(48)	24	(71)	5	(50)	76	(51)
Counsellor												
Yes	0	(0)	3	(20)	9	(11)	5	(15)	1	(10)	18	(12)
No	6	(100)	12	(80)	75	(89)	29	(85)	9	(90)	131	(88)
Gamblers Anonymous												
Yes	0	(0)	0	(0)	8	(10)	7	(21)	1	(10)	16	(11)
No	6	(100)	15	(100)	76	(90)	27	(79)	9	(90)	133	(89)
Church												
Yes	0	(0)	1	(7)	6	(7)	4	(12)	2	(20)	13	(9)
No	6	(100)	14	(93)	78	(93)	30	(88)	8	(80)	136	(91)
GP, practice nurse or other health professional												
Yes	0	(0)	1	(7)	7	(8)	3	(9)	0	(0)	11	(7)
No	6	(100)	14	(93)	77	(92)	31	(91)	10	(100)	138	(93)

Perception of gambling treatment service providers

Just over half (59%; n=157) of respondents reported that they would feel comfortable referring family or friends to all of the listed gambling treatment services, with about one-third (34%; n=91) reporting that they would feel comfortable with some of the services. Six percent (n=16) reported not feeling comfortable with referring family/friends to any of the listed services and one percent (n=3) did not know if they would be comfortable or not (Table 23).

There were no major ethnic differences noted (Table 23). However, the youth respondents were less likely to feel comfortable in referring to all the types of listed service (41%; n=13) compared with the adult respondents (55% to 69%) and more comfortable referring to some of the services (47%; n=15 vs. 29% to 35%) (Table 24).

Table 23: Comfortable referring others to treatment service providers by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
All of these types	64	(59)	30	(56)	21	(58)	15	(63)	27	(60)	157	(59)
Some, but not all of these types	35	(32)	19	(35)	12	(33)	7	(29)	18	(40)	91	(34)
None of these types of services	8	(7)	4	(7)	3	(8)	1	(4)	0	(0)	16	(6)
Don't know	1	(1)	1	(2)	0	(0)	1	(4)	0	(0)	3	(1)

Table 24: Comfortable referring others to treatment service providers by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
All of these types	13	(41)	22	(55)	76	(60)	36	(69)	10	(59)	157	(59)
Some, but not all of these types	15	(47)	14	(35)	43	(34)	14	(27)	5	(29)	91	(34)
None of these types of services	4	(13)	3	(8)	6	(5)	2	(4)	1	(6)	16	(6)
Don't know	0	(0)	1	(3)	1	(1)	0	(0)	1	(6)	3	(1)

Barriers to referring other people to treatment service providers

Forty percent (n=107) of the respondents did not feel comfortable referring family or friends to some or all of the gambling treatment service providers. However, there were many reasons why they did not feel comfortable and none was endorsed by more than nine percent of the respondents. Due to the small sample sizes, robust interpretation of the data by ethnicity or age is precluded and no figures are presented. The data are available in Appendix 5, Tables B11 and B12.

4.2.6 Section summary

In this section, details of secondary analyses of the Pacific subset of data from the '2006/07 Gaming and betting activities survey' are presented, expanding on the original analyses.

The data subset was split into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean and Other Pacific. The respondents were also categorised by age group.

Specific subject areas that were investigated included:

- Respondents' own gambling behaviour (types, frequency)
- Youth respondents' perception on attractive and unattractive factors that lead to and/or prevent them from gambling
- Awareness of signs and impacts associated with harmful gambling
- Knowledge and perception of gambling treatment service providers

Demographically, Samoan and Tongan participants showed a relatively equal gender distribution with other ethnic groups being disproportionately female. About half of the participants for all ethnicities apart from Cook Islands (one-third) were aged between 25 to 44 years. Annual household income ranged widely across all ethnicities.

Generally, sample sizes were too small to allow full analyses by ethnicity and age and this has limited data interpretation. Where differences were noted they have been detailed below. *On the whole, a level of statistical significance was not attained and thus these findings should be treated with caution.*

Lottery products were the most popular form of gambling (56%; n=149) followed by non-casino and casino electronic gaming machines (18%; n=48 and 15%; n=39 respectively). Other forms of gambling were participated in by less than 10% of respondents. Frequency of gambling varied depending on the mode of gambling.

The percentage of adults gambling at least weekly on lottery products increased with age group from six percent of 18 to 24 year olds (n=1) to 50% (n=6) of those aged 65+ years and decreased with age group for infrequent participation (one to six times a year) from 53% of 18 to 24 year olds (n=9) to 17% (n=2) of those aged 65+ years.

The only attractive factor leading to gambling which was endorsed by a majority of youth respondents (56%; n=18) was 'to win money'. The factor deemed to be the most unattractive was 'losing money/see others lose money' (41%; n=13).

Almost three-quarters of respondents (72%; n=191) reported being able to describe signs of harmful gambling; there were no major ethnic or age-related differences. 'Financial problems' was the top sign of harmful gambling reported by 32% (n=62) of respondents. 'Unable to pay for household bills/food/rent' was the top impact of harmful gambling reported by 37% (n=83) of respondents. Over one-quarter (27%, n=71) of respondents reported that they or a member of their household had used strategies in an attempt to avoid excessive gambling with 'avoiding places with betting/gambling as an attraction' being reported most often (68%).

Just over half of the respondents (56%, n=149) were able to name a gambling treatment service provider, with the telephone helpline being the most known (49%; n=73 of those who could name a service). There were no major differences between the ethnicities in the perception of gambling treatment service providers.

For this Pacific subset a level of statistical significance was attained in the following areas:

- Past year gambling participation in non-casino electronic gaming machine gambling by ethnic group
- Past year gambling participation in lottery products, horse/dog/sports racing, and casino electronic gaming machine gambling by age group

Ethnic differences

Cook Islands

- Cook Islands participants were *more likely* to participate in *non-casino electronic gaming machine gambling* compared with the other ethnicities.

Age differences

15 to 17 years

- This age group was the *least likely* to participate in *lottery products* gambling compared with the other age groups.
- This age group (with the 18 to 24 year age group) was *less likely* to participate in *horse/dog/sports racing* gambling compared with the other age groups.
- *No* respondents in this age group participated in *casino electronic gaming machine* gambling (to be expected due to legal age restriction).

18 to 24 years

- This age group (with the 15 to 17 year age group) was *less likely* to participate in *horse/dog/sports racing* gambling compared with the other age groups.

4.3 Pacific Islands Families Study data set

This section details secondary analyses of the gambling-related data from the longitudinal Pacific Islands Families (PIF) birth cohort study (1,376 families) conducted by Auckland University of Technology. Previous analyses have been reported separately to the Ministry of Health (Bellringer, Abbott, Williams, & Gao, 2008; Bellringer, Taylor, Poon, Abbott, & Paterson, 2012). This section includes additional analyses that expand on those previous analyses.

Primary caregivers (usually mothers and reported as such) of the PIF cohort children were interviewed at measurement waves when the children were aged six weeks, and one, two, four, six and nine years. Collateral caregivers (usually fathers and reported as such) were interviewed at one, two and six years. Children were interviewed when they were nine years of age.

Where possible, data have been split into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean, Other Pacific (i.e. those not in the named categories or of multiple Pacific ethnicity) and non-Pacific (the mother or father was not of Pacific origin - the cohort was identified based on the children having at least one parent who identified as being of Pacific ethnicity).

The mothers and fathers were also categorised into three groups with reference to their level of gambling participation in the past 12 months:

- Non-gamblers: Had not participated in any gambling activity
- Lotto/keno only: Had only participated in Lotto or keno (not including Instant Kiwi)
- Continuous: Had participated in at least one continuous gambling mode (any mode other than Lotto and keno)

Both parents were asked about their gambling activities at every interview, although the questions have varied over the history of the PIF study. Consistent data were available on whether or not the interviewee had gambled (on any form of gambling) during the past 12 months. In addition, data on usual expenditure on gambling, expressed either as weekly or monthly, were available and were found to be sufficiently consistent after converting monthly figures to weekly amounts, where necessary.

For the longitudinal analysis of PIF gambling data, the focus was on changes over time. Thus the unit of research was defined as a pair of consecutive interviews of the same person and comparisons were made between the earlier and the later interviews. The analyses excluded pairs of interviews where the caregiver of the cohort child had changed, for example from birth father at Year 1 to adoptive father at Year 2. The three outcome variables that were analysed were:

1. *Taking up gambling*: Among those who did not gamble at the earlier interview, this identifies those who became a gambler by the second interview.
2. *Giving up gambling*: Among those who reported gambling at the earlier interview, this identifies those who became a non-gambler by the second interview.
3. *Change in usual expenditure*: Among those who reported gambling at either interview, this measures the difference in the usual weekly expenditure on gambling between the two interview time points.

The first two are binary outcomes, while the third variable is expressed in dollars per week. Each outcome variable was analysed separately for primary and collateral caregivers.

The main aim of these analyses was to characterise the participants who exhibited those changes in gambling behaviour and, in particular, to test for associations with significant changes in the life of the participant. With that in mind, the following life changes were identified and included as explanatory covariates in the statistical modelling:

- *Became partnered*: Marital status shifted from 'not partnered' at the earlier interview to either 'married' or 'de facto' relationship at the later interview
- *Separated*: Marital status shifted from either 'married' or 'de facto' relationship at the earlier interview to 'non partnered' at the later interview
- *Took up smoking*: Smoking status shifted from 'non-smoker' at the earlier interview to 'smoker' at the later interview
- *Gave up smoking*: Smoking status shifted from 'smoker' at the earlier interview to 'non-smoker' at the later interview
- *Took up alcohol*: A shift from 'no' to 'yes' to a question about using alcohol at all during the past 12 months
- *Gave up alcohol*: A shift from 'yes' to 'no' to a question about using alcohol at all during the past 12 months
- *Gained employment*: A shift from not having paid employment to having paid employment (including part-time)
- *Lost employment*: A shift from having paid employment (including part-time) to not having paid employment
- *Became depressed*: Scores on the GHQ-12¹⁰ scale shifted from 'normal' to 'symptomatic'
- *Beat depression*: Scores on the GHQ-12 scale shifted from 'symptomatic' to 'normal'

Multiple logistic regression techniques were used to assess the two binary outcome variables. To allow for the repeated measures, mixed models were used that included a random effect based on unique individuals. This technique adjusted for the correlated nature of repeated measures and also made some allowance for missing observations. Changes in usual expenditure were analysed using a multiple linear regression model; analysis of the correlations indicated that a mixed model was not necessary.

Full tables of data to support the figures presented in this section are detailed in Appendix 6.

4.3.1 Participant characteristics

Socio-demographic characteristics of the mothers (Table 25), fathers (Table 26) and children (Table 27) from the last data collection points (Year 9 for mothers and children, Year 6 for fathers) are presented below.

Mothers

In Year 9, no major difference between the ethnicities was noted for mothers' marital status or weekly household income. A majority were partnered and the greatest percentage of each group was generally in the \$501 to \$1,000 weekly household income bracket.

Overall, half of the mothers (n=428) were aged between 30 to 39 years and two-fifths (40%; n=346) were aged 40+ years. Niuean mothers showed a slightly different profile with 62% (n=26) aged 30 to 39 years and one-quarter (24%; n=10) aged 40+ years. Niuean mothers also differed from the other Pacific groups in relation to highest educational

¹⁰ General Health Questionnaire 12-item version (Goldberg & Williams, 1988).

qualification with an apparent overall higher level of education; 63% (n=27) reported a post-school qualification compared with 34% to 56% for the other groups (apart from Other Pacific of whom 64%; n=14 also reported post-school qualifications).

Table 25: Socio-demographic characteristics of mothers in Year 9

	Samoan		Cook Island		Niuean		Tongan		Other Pacific		Non Pacific		All Mothers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Age group (years)														
20 - 29	27	(7)	25	(16)	6	(14)	10	(5)	3	(14)	11	(18)	82	(10)
30 - 39	195	(51)	75	(49)	26	(62)	93	(48)	11	(52)	28	(47)	428	(50)
40+	163	(42)	53	(35)	10	(24)	92	(47)	7	(33)	21	(35)	346	(40)
Highest qualification														
None or secondary school	256	(66)	79	(52)	16	(37)	127	(65)	8	(36)	28	(44)	514	(59)
Post school qualification	133	(34)	73	(48)	27	(63)	68	(35)	14	(64)	35	(56)	350	(41)
Marital status														
Partnered	317	(82)	97	(63)	25	(58)	166	(85)	16	(73)	42	(67)	663	(77)
Non partnered	71	(18)	57	(37)	18	(42)	29	(15)	6	(27)	21	(33)	202	(23)
Household income (weekly; before tax)														
\$0 - \$500	61	(16)	42	(27)	12	(28)	28	(14)	1	(5)	10	(16)	154	(18)
\$501 - \$1,000	166	(43)	60	(39)	18	(42)	90	(46)	10	(45)	22	(35)	366	(42)
>\$1,000	127	(33)	39	(25)	8	(19)	66	(34)	6	(27)	22	(35)	268	(31)
Unknown	35	(9)	14	(9)	5	(12)	11	(6)	5	(23)	9	(14)	79	(9)

Fathers

In Year 6, no major difference between the ethnicities was noted for fathers' marital status or weekly household income. As was to be expected, almost all of the fathers were partnered as the birth cohort was selected based on the mother having a child of Pacific ethnicity and required consent of the mother for the father to be contacted by the interviewers; the fathers were thus the partners of the mothers. The greatest percentage of each group was generally in the \$501 to \$1,000 weekly household income bracket.

The age distribution of fathers in Year 6 was similar to that of mothers in Year 9 with about half being 30 to 39 years old. However, Niuean fathers showed a slightly different profile with a higher proportion (28%; n=7) in the 20 to 29 year age group compared with the other ethnic groups (6% to 13%). Post-school qualification was the highest level reached for the largest proportion of Cook Islands, Niuean, Other Pacific and non-Pacific fathers whilst no formal qualifications attained was reported by the greatest percentage of Samoan and Tongan fathers.

Table 26: Socio-demographic characteristics of fathers in Year 6

	Samoan		Cook Island		Niuean		Tongan		Other Pacific		Non Pacific		All Fathers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Age group (Years)														
20 - 29	14	(6)	7	(13)	7	(28)	21	(11)	2	(12)	5	(13)	57	(10)
30 - 39	125	(51)	27	(50)	13	(52)	105	(55)	11	(65)	19	(49)	308	(52)
40+	106	(43)	20	(37)	5	(20)	65	(34)	4	(24)	15	(38)	226	(38)
Highest qualification														
No formal qualifications	101	(46)	11	(30)	4	(22)	91	(61)	4	(29)	4	(13)	215	(46)
Secondary school qualification	48	(22)	5	(14)	4	(22)	7	(5)	2	(14)	4	(13)	70	(15)
Post school qualification	71	(32)	21	(57)	10	(56)	51	(34)	8	(57)	23	(74)	187	(40)
Marital status														
Partnered	242	(99)	52	(96)	24	(96)	184	(96)	16	(94)	38	(97)	575	(97)
Non partnered	3	(1)	2	(4)	1	(4)	7	(4)	1	(6)	1	(3)	16	(3)
Household income (weekly; before tax)														
\$0 - \$500	39	(16)	7	(13)	3	(12)	25	(13)	1	(6)	4	(10)	85	(14)
\$501 - \$1,000	133	(54)	29	(54)	11	(44)	108	(57)	10	(59)	17	(44)	315	(53)
>\$1,000	71	(29)	17	(31)	11	(44)	55	(29)	6	(35)	18	(46)	183	(31)
Unknown	2	(1)	1	(2)	0	(0)	3	(2)	0	(0)	0	(0)	8	(1)

Children

In Year 9, there was a relatively equal distribution of boys and girls for each Pacific ethnicity apart from Cook Islands and Other Pacific children who were slightly disproportionately male (58%; n=88 and 54%; n=45 respectively). Approximately half of the children (55%, n=482) came from households with five to seven members.

Table 27: Socio-demographic characteristics of children in Year 9

	Samoa		Cook Island		Niuean		Tongan		Other Pacific		All Children	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Sex												
Female	207	(52)	65	(42)	22	(51)	104	(54)	39	(46)	437	(50)
Male	193	(48)	88	(58)	21	(49)	90	(46)	45	(54)	437	(50)
Household size												
2 to 4	65	(16)	28	(18)	10	(24)	19	(10)	18	(21)	140	(16)
5 to 7	231	(58)	83	(54)	24	(57)	91	(47)	53	(63)	482	(55)
8+	104	(26)	42	(27)	8	(19)	83	(43)	13	(15)	250	(29)

4.3.2 Gambling behaviour

Gambling participation

Mothers

In Year 6, overall about two-thirds (64%; n=614) of all mothers were non-gamblers and 36% (n=347) were gamblers. One-quarter (26%; n=251) of the mothers participated in Lotto/keno only and one-tenth (10%; n=96) participated in continuous gambling modes. A higher percentage of Tongan mothers were non-gamblers (74%; n=156) with a lower percentage of the gamblers participating in continuous forms (3%; n=7). A higher percentage of Niuean and non-Pacific mothers participated in continuous forms (22%; n=10 and 23%; n=15 respectively) (Figure 54).

In Year 9, overall the gambling profile of mothers had changed with non-gamblers comprising 51% (n=441) and gamblers at 49% (n=426), indicating an increase in gambling participation from Year 6. One-third (32%; n=278) of the mothers participated in Lotto/keno only and 17% (n=148) participated in continuous gambling modes. There were no major ethnic differences in gambling participation (Figure 55).

Figure 54: Mothers' gambling participation in Year 6

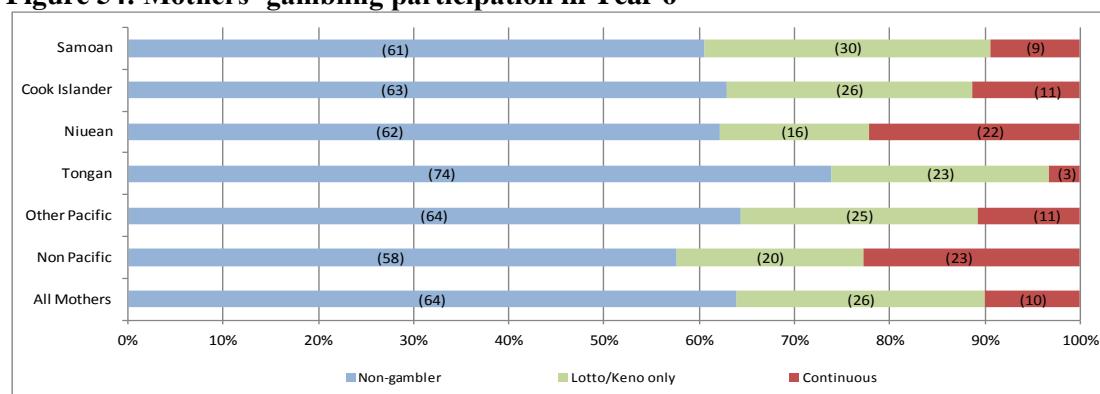
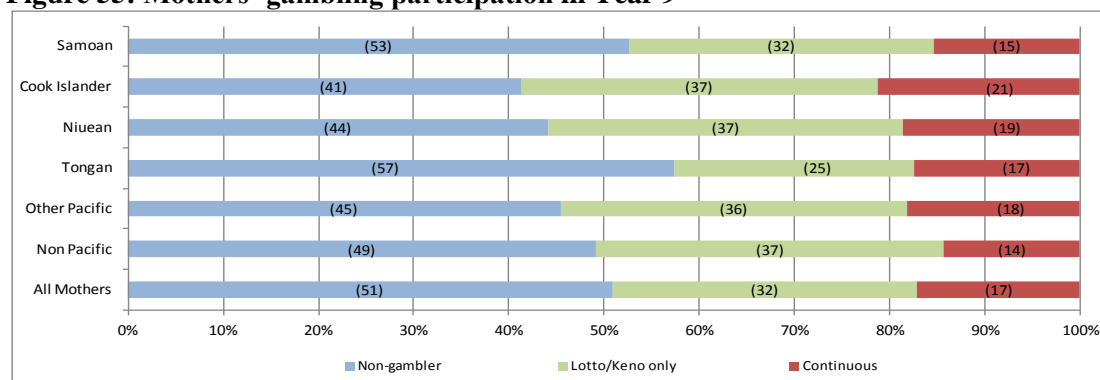


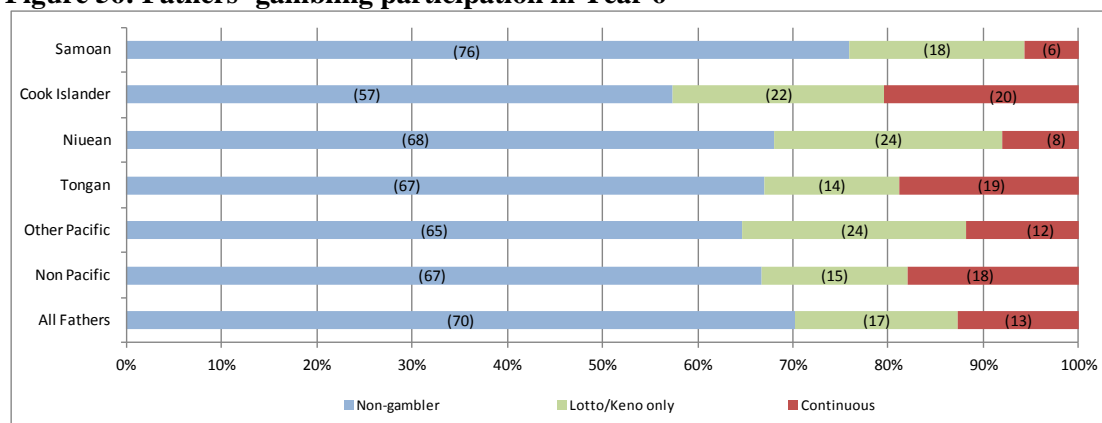
Figure 55: Mothers' gambling participation in Year 9



Fathers

In Year 6, overall just over two-thirds (70%; n=415) of all fathers were non-gamblers and 30% (n=176) were gamblers. Seventeen percent (n=101) of the fathers participated in Lotto/keno only and 13% (n=75) participated in continuous gambling modes. Significant ethnic variations were seen ($p < 0.001$) with Cook Islands fathers most likely to gamble and Samoan fathers least likely (Figure 56).

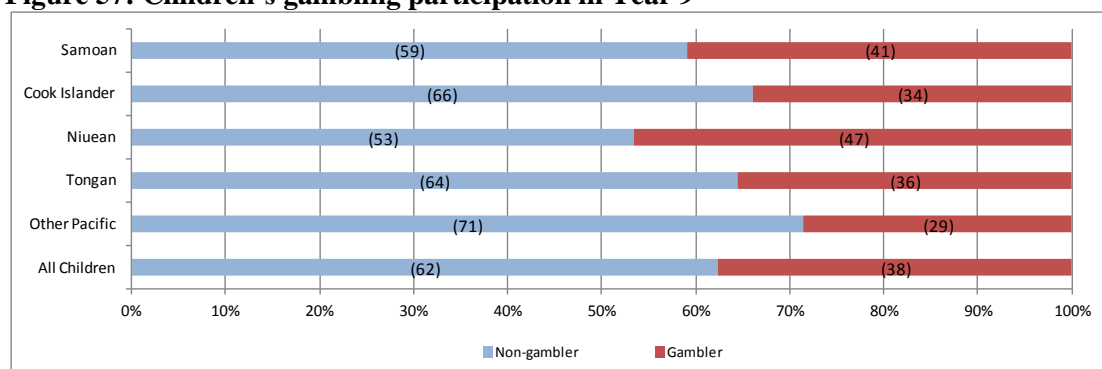
Figure 56: Fathers' gambling participation in Year 6



Children

In Year 9, overall 62% (n=543) of the children reported that they never bet with money whilst 38% (n=327) had bet for money. As examples of where money might be bet, interviewers mentioned “on a game of marbles or a board game or card game, or on a sports match, or when playing dice?” Children were also asked specifically about using money for housie/ bingo and card game participation, and buying Lotto tickets or scratch cards. Some children replied in the affirmative for these latter questions whilst having replied negatively to the first general question. A ‘yes’ response to any of the questions has been reported as the child betting money. Children were not asked whether it was their own money or someone else’s money which was used. There were no major ethnic differences in gambling participation (Figure 57).

Figure 57: Children's gambling participation in Year 9



Gambling partners

Mothers

In Year 9, mothers were asked with whom they participated in their favourite gambling activities. Overall, half of the mothers (52%; n=199) participated in their favourite gambling activities alone, and a third (34%; n=129) with spouse/partner. Less than 10% reported participating in gambling with other family members (9%; n=35) and friends/co-workers (4%; n=6). Tongans showed a different profile from the other ethnic groups with a greater

percentage participating with other family members (16%; n=11 vs. 0 to 11%) and a lower percentage participating with spouse/partner (19%; n=13). A higher percentage (70%; n=7) of Other Pacific mothers reported gambling with spouse/partner and a lower percentage (30%; n=3) alone (Table 28).

Table 28: With whom mother gambled in Year 9

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		Non-Pacific		All Mothers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
When you participate in the gaming activity that you most prefer, do you usually do so:														
Alone	88	(53)	41	(59)	45	(54)	12	(52)	3	(30)	10	(34)	199	(52)
Spouse/partner	58	(35)	13	(19)	27	(32)	8	(35)	7	(70)	16	(55)	129	(34)
Other family members	13	(8)	11	(16)	9	(11)	1	(4)	0	(0)	1	(3)	35	(9)
Friends/co-workers	6	(4)	4	(6)	3	(4)	2	(9)	0	(0)	1	(3)	16	(4)
Others	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(3)	1	(0)

Fathers

Overall, fathers' gambling partners in Year 6 were similar to those of mothers in Year 9. Fifty-eight percent (n=97) of fathers reported gambling on their favourite activities alone, whilst 32% (n=54) gambled with their spouse/partner. Similar to mothers, six percent (n=10) of fathers participated in gambling with other family members and four percent (n=6) with friends/co-workers. However, there was greater variability between the ethnic groups; Samoans showed a slightly different profile with approximately equal numbers gambling alone or with a spouse/partner (Table 29).

Table 29: With whom father gambled in Year 6

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		Non-Pacific		All Fathers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
When you participate in the gaming activities that you most enjoy, do you usually do so:														
Alone	29	(49)	39	(67)	16	(70)	4	(50)	3	(50)	6	(46)	97	(58)
Spouse/partner	28	(47)	14	(24)	7	(30)	1	(13)	2	(33)	2	(15)	54	(32)
Other family members	1	(2)	4	(7)	0	(0)	2	(25)	1	(17)	2	(15)	10	(6)
Friends/co-workers	1	(2)	1	(2)	0	(0)	1	(13)	0	(0)	3	(23)	6	(4)
Others	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)

Number of gambling modes

Mothers

Of the 406 mothers who responded to problem gambling risk (Problem Gambling Severity Index - PGSI¹¹) questions in Year 9, 367 (90%) reported participating in one or two gambling modes in the past year. Non-problem gambling mothers were substantially less likely (6%; n=23) to participate in three or more gambling modes, whilst 23% (n=5) of low risk gamblers, and 62% (n=8) or 60% (n=3) respectively of moderate risk and problem gamblers reported participating in three or more gambling modes (Table 30). However, due to the very small sample sizes for all but non-problem gamblers, these findings should be treated with caution and may not indicate any association between risk level and number of gambling modes participated in.

Table 30: No. of gambling modes by mothers' problem gambling risk level in Year 9

PGSI Score	Non-problem gambler (0)		Low risk gambler (1-2)		Moderate risk gambler (3-7)		Problem gambler (8+)		All Mothers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Number of modes										
1	262	(72)	9	(41)	1	(8)	1	(20)	273	(67)
2	81	(22)	8	(36)	4	(31)	1	(20)	94	(23)
3 or more	23	(6)	5	(23)	8	(62)	3	(60)	39	(10)

Fathers

Similar findings were noted for the 176 fathers who responded to problem gambling risk questions in Year 6 with 144 (82%) participating in one or two gambling modes in the past

¹¹ Problem Gambling Severity Index from Canadian Problem Gambling Index (Ferris & Wynne, 2001).

year. Non-problem gambling fathers were substantially less likely (7%; n=9) to participate in three or more gambling modes, whilst 41% (n=9) of low risk gamblers, and 35% (n=6) or 80% (n=8) respectively of moderate risk and problem gamblers reported participating in three or more gambling modes (Table 31). However, due to the very small sample sizes for all but non-problem gamblers, these findings should be treated with caution and may not indicate any association between risk level and number of gambling modes participated in.

Table 31: No. of gambling modes by fathers' problem gambling risk level in Year 6

PGSI Score	Non-problem gambler (0)		Low risk gambler (1-2)		Moderate risk gambler (3-7)		Problem gambler (8+)		All Fathers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Number of modes										
1	97	(76)	7	(32)	4	(24)	1	(10)	(109)	(62)
2	21	(17)	6	(27)	7	(41)	1	(10)	(35)	(20)
3 or more	9	(7)	9	(41)	6	(35)	8	(80)	(32)	(18)

4.3.3 Associations with gambling

Religiosity

Religiosity was analysed with reference to whether the participants attended church or not, whether they attended Pasifika or non-Pasifika (i.e. other) churches, and how often they attended church. Three groups were derived based on responses to two acculturation questions, "I attend a Pasifika church" and "I attend a non-Pasifika church", with possible responses varying from "not at all" through to "a lot". Those who attended only a Pasifika church "a lot" formed the majority so this was defined as the reference group. The other two groups were: those who never attend church, and all other possibilities were grouped as "other". Mothers' and fathers' religiosity in Year 6¹² and associations with past-year gambling participation, continuous forms of gambling, gambling expenditure in the upper quartile, and problem gambling risk (PGSI score) were examined.

Mothers

Mothers who never attended church had twice the odds (1.94 times) for gambling on continuous modes compared with mothers who only attended Pasifika churches "a lot". No statistical significance was attained between past-year gambling participation, gambling expenditure in the upper quartile or problem gambling risk (PGSI score) and mothers' church attendance (Table 32).

¹² Religiosity questions were not part of the interview questionnaire for mothers in Year 9; fathers were not interviewed in Year 9.

Table 32: Mothers' gambling and religiosity in Year 6

	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Church attendance								
Pasifika only, a lot	306	(64)	172	(36)	478	(100)	1.00	
Pasifika, sometimes/non-Pasifika	231	(63)	135	(37)	366	(100)	1.04	(0.78, 1.38)
Never attend church	97	(63)	56	(37)	153	(100)	1.03	(0.70, 1.50)
Church attendance								
	Not gambled on continuous mode		Gambled on continuous modes		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	440	(92)	38	(8)	478	(100)	1.00	
Pasifika, sometimes/non-Pasifika	324	(89)	42	(11)	366	(100)	1.50	(0.95, 2.38)
Never attend church	131	(86)	22	(14)	153	(100)	1.94	(1.11, 3.40)*
Church attendance								
	Spend < \$20 per week		Spend ≥ \$20 per week		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	121	(70)	51	(30)	172	(100)	1.00	
Pasifika, sometimes/non-Pasifika	99	(73)	36	(27)	135	(100)	0.86	(0.52, 1.43)
Never attend church	33	(59)	23	(41)	56	(100)	1.65	(0.89, 3.09)
Church attendance								
	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	116	(80)	29	(20)	145	(100)	1.00	
Pasifika, sometimes/non-Pasifika	91	(88)	12	(12)	103	(100)	0.53	(0.26, 1.09)
Never attend church	38	(84)	7	(16)	45	(100)	0.74	(0.30, 1.82)

* P < 0.05

Fathers

Fathers who never attended church, and those who attended non-Pasifika churches or Pasifika church less than “a lot” had more than twice the odds (2.74 and 2.16 times respectively) for gambling in the previous year compared with fathers who attended only Pasifika churches “a lot”. Similarly, they had more than twice as great odds (3.66 and 2.39 times respectively) for gambling on continuous modes. No statistical significance was attained between gambling expenditure in the upper quartile or problem gambling risk (PGSI score) and fathers' church attendance (Table 33).

Table 33: Fathers' gambling and religiosity in Year 6

	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Church attendance								
Pasifika only, a lot	245	(79)	67	(21)	312	(100)	1.00	
Pasifika, sometimes/non-Pasifika	125	(63)	74	(37)	199	(100)	2.16	(1.46, 3.21)***
Never attend church	44	(57)	33	(43)	77	(100)	2.74	(1.62, 4.64)***
Church attendance								
	Not gambled on continuous mode		Gambled on continuous modes		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	288	(92)	24	(8)	312	(100)	1.00	
Pasifika, sometimes/non-Pasifika	166	(83)	33	(17)	199	(100)	2.39	(1.36, 4.17)**
Never attend church	59	(77)	18	(23)	77	(100)	3.66	(1.87, 7.17)***
Church attendance								
	Spend < \$40 per month		Spend ≥ \$40 per month		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	38	(57)	29	(43)	67	(100)	1.00	
Pasifika, sometimes/non-Pasifika	31	(42)	43	(58)	74	(100)	1.82	(0.93, 3.55)
Never attend church	17	(52)	16	(48)	33	(100)	1.23	(0.53, 2.85)
Church attendance								
	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Pasifika only, a lot	46	(69)	21	(31)	67	(100)	1.00	
Pasifika, sometimes/non-Pasifika	55	(74)	19	(26)	74	(100)	0.76	(0.36, 1.58)
Never attend church	24	(73)	9	(27)	33	(100)	0.82	(0.33, 2.07)

** P < 0.01; *** P < 0.001

General health status

Mothers and fathers were asked about their self-perceived general health status in Year 6. Possible responses were “good”, “fair” and “poor”, and were examined on their associations with past-year gambling participation, participation in continuous forms of gambling, gambling expenditure, and problem gambling risk level.

Mothers

No statistically significant associations were found. The data are presented in Appendix 6, Table C5.

Fathers

Fathers who reported their general health to be poor had nearly five times greater odds (4.90 times) for gambling on continuous modes compared with fathers who reported their general health to be good. Similarly, fathers who reported their general health to be fair had 1.81 times greater odds of gambling on continuous modes. No statistical significance was attained between past-year gambling, gambling expenditure in the upper quartile or problem gambling risk (PGSI score) and fathers' general health status (Table 34).

Table 34: Fathers' gambling and general health status in Year 6

General health status	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	311	(72)	120	(28)	431	(100)	1.00	
Fair	99	(66)	50	(34)	149	(100)	1.31	(0.88, 1.95)
Poor	5	(45)	6	(55)	11	(100)	3.11	(0.93, 10.38)

General health status	Not gambled on continuous modes		Gambled on continuous modes		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	386	(90)	45	(10)	431	(100)	1.00	
Fair	123	(83)	26	(17)	149	(100)	1.81	(1.07, 3.06)*
Poor	7	(64)	4	(36)	11	(100)	4.90	(1.38, 17.40)*

General health status	Spend < \$40 per month		Spend ≥ \$40 per month		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	63	(53)	57	(48)	120	(100)	1.00	
Fair	22	(44)	28	(56)	50	(100)	1.41	(0.72, 2.73)
Poor	3	(50)	3	(50)	6	(100)	1.11	(0.21, 5.70)

General health status	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	91	(76)	29	(24)	120	(100)	1.00	
Fair	31	(62)	19	(38)	50	(100)	1.92	(0.95, 3.90)
Poor	5	(83)	1	(17)	6	(100)	0.63	(0.07, 5.59)

* P < 0.05

Physical activity

As part of a set of acculturation questions, mothers and fathers were asked whether they had participated in New Zealand or Pasifika sports and recreation activities in Year 6. Respondents who did not participate in any of these activities were categorised as being physically inactive; otherwise they were categorised as physically active.

Mothers

Of the 999 mothers who responded to the physical activity questions, 517 (52%) were physically active and 482 (48%) were physically inactive. No statistically significant associations were noted between gambling and physical activity. The data are presented in Appendix 6, Table C6.

Fathers

Of the 591 fathers who responded to the physical activity questions, 359 (61%) were physically active and 232 (39%) were physically inactive. Gambling associations with physical activity were examined and results presented in Table 35. Fathers who were physically active had 1.47 times greater odds of gambling in the past year compared with fathers who were not physically active.

Table 35: Fathers' gambling and physical activity in Year 6

	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio OR (95% CI)
	N	(%)	N	(%)	N	(%)	
Physically active							
No	174	(75)	58	(25)	232	(100)	1.00
Yes	241	(67)	118	(33)	359	(100)	1.47 (1.01, 2.13)*
	Not gambled on continuous modes		Gambled on continuous modes		Total		Univariate odds ratio OR (95% CI)
	N	(%)	N	(%)	N	(%)	
Physically active							
No	208	(90)	24	(10)	232	(100)	1.00
Yes	308	(86)	51	(14)	359	(100)	1.44 (0.86, 2.40)
	Spend < \$40 per month		Spend ≥ \$40 per month		Total		Univariate odds ratio OR (95% CI)
	N	(%)	N	(%)	N	(%)	
Physically active							
No	28	(48)	30	(52)	58	(100)	1.00
Yes	60	(51)	58	(49)	118	(100)	0.90 (0.48, 1.69)
	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio OR (95% CI)
	N	(%)	N	(%)	N	(%)	
Physically active							
No	40	(69)	18	(31)	58	(100)	1.00
Yes	87	(74)	31	(26)	118	(100)	0.79 (0.40, 1.58)

* P < 0.05

Self esteem

Mothers

Mothers' self-esteem was measured in Year 6 by the Rosenberg self-esteem scale (Rosenberg, 1965). Associations between mother's gambling and self-esteem were examined. A cut-off score of 25 was applied; respondents scoring 25 or higher were identified as having high self-esteem, whilst respondents scoring 24 or less were identified as individuals with low self-esteem.

Mothers who had low self-esteem had 1.88 times greater odds of gambling on continuous modes than mothers who did not have low self-esteem (Table 36).

Fathers

Self-esteem was not measured in fathers.

Table 36: Mothers' gambling and self-esteem in Year 6

	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio		
	N	(%)	N	(%)	N	(%)	OR	(95% CI)	
Low self-esteem									
No	385	(66)	197	(34)	(582)	(100)	1.00		
Yes	252	(60)	166	(40)	(418)	(100)	1.29	(0.99, 1.67)	
Not gambled on continuous modes									
		Not gambled on continuous modes		Gambled on continuous modes		Total		Univariate odds ratio	
		N	(%)	N	(%)	N	(%)	OR	(95% CI)
Low self-esteem									
No	537	(92)	45	(8)	(582)	(100)	1.00		
Yes	361	(86)	57	(14)	(418)	(100)	1.88	(1.25, 2.85)**	
Spend < \$20 per week									
		Spend < \$20 per week		Spend ≥ \$20 per week		Total		Univariate odds ratio	
		N	(%)	N	(%)	N	(%)	OR	(95% CI)
Low self-esteem									
No	145	(74)	52	(26)	(197)	(100)	1.00		
Yes	108	(65)	58	(35)	(166)	(100)	1.50	(0.96, 2.35)	
Zero PGSI score									
		Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
		N	(%)	N	(%)	N	(%)	OR	(95% CI)
Low self-esteem									
No	138	(86)	22	(14)	(160)	(100)	1.00		
Yes	107	(80)	26	(20)	(133)	(100)	1.52	(0.82, 2.84)	

** P < 0.01

Children's behaviour

Children's behaviour was assessed with reference to the Child Behaviour Checklist (CBCL) (Achenbach & Rescorla, 2001) and the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). Children's gambling participation and associations with behavioural factors are presented in Table 37. Children who scored within the 'clinical' externalising range of the CBCL had 1.89 times greater odds of being a gambler than those who scored as 'normal'. Children who scored between two to four in the hyperactivity domain of the SDQ had 1.32 times greater odds of being a gambler than children who scored in the lower range of zero to one.

Table 37: Children's behaviour and gambling participation

Variable Category	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Child Behaviour Checklist								
"Internalising" score range								
Normal	440	(63)	263	(37)	703	(100)	1.00	
Borderline	51	(66)	26	(34)	77	(100)	0.85	(0.52, 1.40)
Clinical	46	(58)	33	(42)	79	(100)	1.20	(0.75, 1.93)
"Externalising" score range								
Normal	412	(64)	227	(36)	639	(100)	1.00	
Borderline	74	(64)	42	(36)	116	(100)	1.03	(0.68, 1.56)
Clinical	51	(49)	53	(51)	104	(100)	1.89	(1.24, 2.86) **
Strengths and Difficulties Questionnaire								
"Prosocial" score								
Normal	450	(63)	270	(38)	720	(100)	1.00	
Borderline or abnormal	92	(62)	57	(38)	149	(100)	1.03	(0.72, 1.48)
"Peer Problems" score (modified)								
0	381	(62)	237	(38)	618	(100)	1.00	
1 - 4	161	(64)	89	(36)	250	(100)	0.89	(0.65, 1.21)
"Hyperactivity" score (modified)								
0 - 1	302	(65)	160	(35)	462	(100)	1.00	
2 - 4	239	(59)	167	(41)	406	(100)	1.32	(1.00, 1.74) *

* P < 0.05, ** P < 0.01

Children's after-school activities

In general, the more frequently the children spent time with friends, had paid work, or after-school activities, the greater odds they had for being a gambler. Children who spent time with friends 'several times a week' or 'every day/almost every day' after school had 1.76 and 1.56 greater odds being a gambler respectively compared with children who never spent time with friends after school. Those who had paid work 'every day' or 'almost every day' after school had over twice the odds (2.37) of being a gambler compared with children who never had paid work after school. Children who had after-school activities 'several times a week' had 1.88 times greater odds of being a gambler than those who never went to after school activities (Table 38).

Table 38: Children's after-school activities and gambling participation

Variable Category	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Spend time with friends after school								
Never	236	(68)	110	(32)	346	(100)	1.00	
Less than once a week	79	(59)	55	(41)	134	(100)	1.49	(0.99, 2.25)
About once a week	65	(61)	41	(39)	106	(100)	1.35	(0.86, 2.13)
Several times a week	50	(55)	41	(45)	91	(100)	1.76	(1.10, 2.82) *
Every day or almost every day	110	(58)	80	(42)	190	(100)	1.56	(1.08, 2.25) *
Have paid work after school								
Never	394	(65)	210	(35)	604	(100)	1.00	
Less than once a week	53	(60)	36	(40)	89	(100)	1.27	(0.81, 2.01)
About once a week	52	(59)	36	(41)	88	(100)	1.30	(0.82, 2.05)
Several times a week	21	(51)	20	(49)	41	(100)	1.79	(0.95, 3.37)
Every day or almost every day	19	(44)	24	(56)	43	(100)	2.37	(1.27, 4.43) **
Go to after-school activities								
Never	351	(65)	192	(35)	543	(100)	1.00	
Less than once a week	31	(57)	23	(43)	54	(100)	1.36	(0.77, 2.39)
About once a week	77	(65)	41	(35)	118	(100)	0.97	(0.64, 1.48)
Several times a week	36	(49)	37	(51)	73	(100)	1.88	(1.15, 3.07) *
Every day or almost every day	45	(57)	34	(43)	79	(100)	1.38	(0.86, 2.23)

* P < 0.05, ** P < 0.01

Other child factors examined

Family cohesion, physical abilities, relationship with parents and peers, school ability and enjoyment, self-opinion, other after-school activities (e.g. homework, sports, after-school care, belong to clubs/organisations), home environment (e.g. access to computer and internet, sharing of bed and bedroom with others), and level of parental guidance were also examined in relation to children's gambling behaviour. No statistically significant findings were noted. These data are presented in Appendix 6, Tables C7, C8, C9 and C10.

4.3.4 Changes in gambling and associated factors

Giving up gambling

Mothers and fathers who had been gambling at any previous data collection point were assessed in relation to whether they had continued gambling or given up gambling at the next data collection point. Changes in marital status, smoking, drinking alcohol, mental health status and employment status were analysed by comparing with the gambling status data.

Mothers

Associations for mothers giving up gambling are presented in Table 39.

A change in marital status, whether becoming partnered or separating from a partner, was associated with greater odds for giving up gambling (2.06 and 1.73 times greater respectively) than for mothers whose marital status remained stable. These findings remained even when confounding variables were controlled for.

Mothers who reported taking up drinking alcohol had lower odds (0.65 times) for giving up gambling than mothers who did not start drinking alcohol. This finding remained even when confounding variables were controlled for.

Although univariate analyses indicated that mothers who quit smoking had greater odds (1.58) for giving up gambling than mothers who did not give up smoking, this finding was not upheld when confounding variables were controlled for.

Changes in mental health status (becoming/beating depression) and employment status, taking up smoking and giving up alcohol were not associated with giving up gambling.

Table 39: Mothers giving up gambling and life changes

	Continued gambling		Gave up gambling		Total		Univariate odds ratio		Adjusted odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)	OR	(95% CI)
Became partnered										
No	936	(57)	716	(43)	1652	(100)	1.00		1.00	
Yes	34	(42)	47	(58)	81	(100)	1.81	(1.15, 2.84)*	2.06	(1.24, 3.43)**
Became separated										
No	916	(57)	704	(43)	1620	(100)	1.00		1.00	
Yes	55	(49)	58	(51)	113	(100)	1.37	(0.94, 2.01)	1.73	(1.12, 2.67)*
Took up smoking										
No	886	(56)	705	(44)	1591	(100)	1.00			
Yes	77	(60)	51	(40)	128	(100)	0.83	(0.58, 1.20)		
Quit smoking										
No	923	(57)	702	(43)	1625	(100)	1.00			
Yes	44	(45)	53	(55)	97	(100)	1.58	(1.05, 2.39)*		
Took up alcohol										
No	821	(55)	676	(45)	1497	(100)	1.00		1.00	
Yes	148	(64)	85	(36)	233	(100)	0.70	(0.52, 0.93)*	0.65	(0.47, 0.89)**
Quit alcohol										
No	909	(57)	696	(43)	1605	(100)	1.00			
Yes	62	(48)	66	(52)	128	(100)	1.39	(0.97, 1.99)		
Became depressed										
No	892	(56)	692	(44)	1584	(100)	1.00			
Yes	79	(59)	56	(41)	135	(100)	0.91	(0.64, 1.31)		
Beat depression										
No	867	(57)	664	(43)	1531	(100)	1.00			
Yes	103	(52)	96	(48)	199	(100)	1.22	(0.91, 1.64)		
Gained employment										
No	810	(55)	656	(45)	1466	(100)	1.00			
Yes	162	(60)	107	(40)	269	(100)	0.82	(0.63, 1.06)		
Lost employment										
No	904	(56)	701	(44)	1605	(100)	1.00			
Yes	68	(52)	62	(48)	130	(100)	1.18	(0.82, 1.68)		

* P < 0.05, ** P < 0.01

Fathers

Associations for fathers giving up gambling are presented in Table 40.

The only association attaining a level of statistical significance was for fathers who quit drinking alcohol who had nearly four times (3.75) greater odds for giving up gambling than fathers who had not quit drinking alcohol. This finding remained even when confounding variables were controlled for.

Becoming separated from spouse/partner, changes in mental health status (becoming/beating depression), employment status, smoking status, and taking up drinking alcohol were not associated with giving up gambling.

Table 40: Fathers giving up gambling and life changes

	Continued gambling		Gave up gambling		Total		Univariate odds ratio		Adjusted odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)	OR	(95% CI)
Became partnered										
No	120	(41)	172	(59)	292	(100)	N/A			
Yes	0	(0)	3	(100)	3	(100)	N/A			
Became separated										
No	117	(40)	173	(60)	290	(100)	1.00			
Yes	3	(60)	2	(40)	5	(100)	0.45	(0.07, 2.74)		
Took up smoking										
No	112	(40)	167	(60)	279	(100)	1.00			
Yes	7	(47)	8	(53)	15	(100)	0.77	(0.27, 2.17)		
Quit smoking										
No	108	(40)	165	(60)	273	(100)	1.00			
Yes	11	(55)	9	(45)	20	(100)	0.54	(0.21, 1.34)		
Took up alcohol										
No	111	(40)	164	(60)	275	(100)	1.00			
Yes	9	(47)	10	(53)	19	(100)	0.75	(0.30, 1.91)		
Quit alcohol										
No	113	(44)	142	(56)	255	(100)	1.00		1.00	
Yes	7	(18)	33	(83)	40	(100)	3.75	(1.60, 8.80)**	3.75	(1.60, 8.80)**
Became depressed										
No	109	(39)	168	(61)	277	(100)	1.00			
Yes	11	(61)	7	(39)	18	(100)	0.41	(0.16, 1.10)		
Beat depression										
No	117	(42)	164	(58)	281	(100)	1.00			
Yes	3	(21)	11	(79)	14	(100)	2.62	(0.71, 9.58)		
Gained employment										
No	111	(41)	157	(59)	268	(100)	1.00			
Yes	9	(33)	18	(67)	27	(100)	1.41	(0.61, 3.26)		
Lost employment										
No	109	(41)	157	(59)	266	(100)	1.00			
Yes	11	(38)	18	(62)	29	(100)	1.14	(0.52, 2.50)		

** P < 0.01

Taking up gambling

Mothers and fathers who had not gambled at a previous data collection point were assessed in relation to whether they continued being non-gamblers or started gambling at the next data collection point. Changes in marital status, smoking, drinking alcohol, mental health status and employment status were analysed by comparing with the gambling status data.

Mothers

Associations for mothers taking up gambling are presented in Table 41.

Mothers who reported taking up drinking alcohol or giving up alcohol consumption had greater odds (2.23 and 1.66 times respectively) for starting gambling than mothers who did not take up or quit alcohol consumption. These findings remained even when confounding variables were controlled for.

Mothers who started smoking had twice as great odds (2.12) for starting gambling than mothers who did not take up smoking. This finding remained even when confounding variables were controlled for.

Changes in marital status, mental health status (becoming/beating depression) and employment status were not associated with starting gambling.

Table 41: Mothers taking up gambling and life changes

	Continued not gambling		Took up gambling		Total		Univariate odds ratio		Adjusted odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)	OR	(95% CI)
Became partnered										
No	2468	(74)	853	(26)	3321	(100)	1.00			
Yes	152	(74)	53	(26)	205	(100)	1.01	(0.73, 1.39)		
Became separated										
No	2444	(74)	849	(26)	3293	(100)	1.00			
Yes	176	(76)	57	(24)	233	(100)	0.93	(0.68, 1.27)		
Took up smoking										
No	2454	(75)	797	(25)	3251	(100)	1.00		1.00	
Yes	146	(57)	108	(43)	254	(100)	2.28	(1.75, 2.96)***	2.12	(1.57, 2.86)***
Quit smoking										
No	2490	(75)	852	(25)	3342	(100)	1.00			
Yes	118	(71)	49	(29)	167	(100)	1.21	(0.86, 1.71)		
Took up alcohol										
No	2321	(77)	713	(24)	3034	(100)	1.00		1.00	
Yes	293	(60)	194	(40)	487	(100)	2.16	(1.76, 2.63)***	2.23	(1.77, 2.81)***
Quit alcohol										
No	2486	(75)	847	(25)	3333	(100)	1.00		1.00	
Yes	130	(68)	60	(32)	190	(100)	1.35	(0.99, 1.86)	1.66	(1.15, 2.38)**
Became depressed										
No	2398	(74)	830	(26)	3228	(100)	1.00			
Yes	194	(72)	74	(28)	268	(100)	1.10	(0.83, 1.46)		
Beat depression										
No	2400	(75)	821	(25)	3221	(100)	1.00			
Yes	211	(71)	87	(29)	298	(100)	1.21	(0.93, 1.57)		
Gained employment										
No	2151	(74)	743	(26)	2894	(100)	1.00			
Yes	472	(74)	165	(26)	637	(100)	1.01	(0.83, 1.23)		
Lost employment										
No	2407	(74)	851	(26)	3258	(100)	1.00		1.00	
Yes	216	(79)	57	(21)	273	(100)	0.75	(0.55, 1.01)	0.71	(0.51, 1.00)

** P < 0.01, *** P < 0.001

Fathers

Associations for fathers taking up gambling are presented in Table 42.

Fathers who reported taking up drinking alcohol had 2.74 greater odds for starting gambling than fathers who did not take up drinking alcohol. This finding remained even when confounding variables were controlled for.

Fathers who reported becoming depressed had over three times (3.34) greater odds for starting gambling than fathers who did not become depressed. This finding remained even when confounding variables were controlled for.

Although univariate analyses indicated that fathers who quit drinking alcohol had lower odds (0.35) for starting gambling than fathers who did not give up alcohol, this finding was not upheld when confounding variables were controlled for.

Changes in marital status, smoking status, employment status and beating depressing were not associated with starting gambling.

Table 42: Fathers taking up gambling and life changes

	Continued not gambling		Took up gambling		Total		Univariate odds ratio		Adjusted odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)	OR	(95% CI)
Became partnered										
No	617	(77)	183	(23)	800	(100)	1.00			
Yes	14	(93)	1	(7)	15	(100)	0.24	(0.03, 1.84)		
Became separated										
No	617	(78)	178	(22)	795	(100)	1.00			
Yes	14	(70)	6	(30)	20	(100)	1.49	(0.56, 3.92)		
Took up smoking										
No	570	(77)	170	(23)	740	(100)	1.00			
Yes	59	(82)	13	(18)	72	(100)	0.74	(0.40, 1.38)		
Quit smoking										
No	585	(77)	174	(23)	759	(100)	1.00			
Yes	40	(80)	10	(20)	50	(100)	0.84	(0.41, 1.72)		
Took up alcohol										
No	542	(81)	127	(19)	669	(100)	1.00			
Yes	89	(61)	57	(39)	146	(100)	2.73	(1.86, 4.02)***	2.74	(1.86, 4.04)***
Quit alcohol										
No	584	(77)	179	(23)	763	(100)	1.00			
Yes	46	(90)	5	(10)	51	(100)	0.35	(0.14, 0.91)*		
Became depressed										
No	608	(79)	164	(21)	772	(100)	1.00			
Yes	21	(53)	19	(48)	40	(100)	3.35	(1.76, 6.39)***	3.34	(1.73, 6.46)***
Beat depression										
No	614	(77)	182	(23)	796	(100)	1.00			
Yes	16	(89)	2	(11)	18	(100)	0.42	(0.10, 1.85)		
Gained employment										
No	578	(78)	167	(22)	745	(100)	1.00			
Yes	53	(76)	17	(24)	70	(100)	1.11	(0.63, 1.97)		
Lost employment										
No	597	(78)	171	(22)	768	(100)	1.00			
Yes	34	(72)	13	(28)	47	(100)	1.33	(0.69, 2.59)		

* P < 0.05, *** P < 0.001

Changes in gambling expenditure

Mothers and fathers who had gambled were assessed in relation to changes in weekly gambling expenditure (more or less expenditure expressed as mean dollars per week) from one data collection point to the next. Changes in marital status, smoking, drinking alcohol, employment status and mental health status during the intervening period were analysed by comparing with the gambling expenditure change data.

Mothers

On average, mothers who took up smoking increased their mean weekly gambling expenditure by \$3.68 compared with those who did not take up smoking, and those who started drinking alcohol increased their mean weekly expenditure by \$5.25 compared with mothers who did not start drinking alcohol. Conversely, mothers who lost employment reduced their mean weekly expenditure on gambling by \$4.84, on average, compared with those who had not lost employment (Table 43).

There was no evidence of a change in expenditure by marital or mental health status, quitting smoking or alcohol consumption, or gaining employment.

Table 43: Mothers changes in weekly gambling expenditure and life changes

	N	(%)	Mean of Spending Change	Adjusted estimates	(95% CI)
Became partnered					
No	2470	(95)	-\$0.53		
Yes	129	(5)	-\$1.84		
Separated					
No	2434	(94)	-\$0.51		
Yes	165	(6)	-\$2.33		
Took up smoking					
No	2351	(91)	-\$1.00	—	
Yes	233	(90)	\$3.81	\$3.68	(0.79, 6.58)*
Quit smoking					
No	2438	(94)	-\$0.36		
Yes	145	(6)	-\$4.17		
Took up alcohol					
No	2178	(84)	-\$1.51	—	
Yes	419	(16)	\$4.15	\$5.25	(3.00, 7.51)***
Quit alcohol					
No	2414	(93)	-\$0.40		
Yes	186	(7)	-\$2.98		
Gained employment					
No	2175	(84)	-\$1.05		
Yes	428	(14)	\$1.72		
Lost employment					
No	2417	(93)	-\$0.21	—	
Yes	186	(7)	-\$5.55	-\$4.84	(-8.04, -1.64)**
Became depressed					
No	2378	(92)	-\$0.68		
Yes	205	(8)	\$1.18		
Beat depression					
No	2316	(89)	-\$0.38		
Yes	282	(11)	-\$2.34		

* P < 0.05, ** P < 0.01, *** P < 0.001

Fathers

On average, fathers who started drinking alcohol or who became depressed increased their mean weekly expenditure by \$6.47. Conversely, fathers who gave up drinking alcohol reduced their mean weekly expenditure on gambling by \$7.13, on average (Table 44).

There was no evidence of a change in expenditure by marital or employment status, quitting or starting smoking, or becoming depressed/beating depression.

Table 44: Fathers changes in weekly gambling expenditure and life changes

	N	(%)	Mean of Spending Change	Adjusted estimates	(95% CI)
Became partnered					
No	469	(99)	-\$0.03		
Yes	4	(1)	-\$8.45		
Separated					
No	463	(98)	-\$0.06		
Yes	10	(2)	-\$1.72		
Took up smoking					
No	444	(94)	-\$0.19		
Yes	27	(6)	\$1.66		
Quit smoking					
No	443	(94)	-\$0.39		
Yes	28	(6)	\$4.43		
Took up alcohol					
No	398	(84)	-\$1.17	—	
Yes	74	(16)	\$5.71	\$6.47	(2.03, 10.91)**
Quit alcohol					
No	430	(91)	\$0.66	—	
Yes	43	(9)	-\$7.63	-\$7.13	(-12.72, -1.53)*
Gained employment					
No	429	(91)	\$0.18		
Yes	44	(9)	-\$2.83		
Lost employment					
No	432	(91)	\$0.22		
Yes	41	(9)	-\$3.43		
Became depressed					
No	435	(92)	-\$0.68	—	
Yes	37	(8)	\$6.69	\$6.47	(0.53, 12.41)*
Beat depression					
No	458	(97)	\$0.16		
Yes	15	(3)	-\$7.83		

* P < 0.05, ** P < 0.01

4.3.5 Section summary

In this section, secondary analyses of the gambling-related data from the longitudinal birth cohort Pacific Islands Families study were performed, expanding on previous analyses.

The data were assessed for mothers, fathers and children and were split into the following ethnic groups: Samoan, Tongan, Cook Islands, Niuean, Other Pacific and Non-Pacific. The mothers and fathers were also categorised into three groups with reference to their gambling participation level in the past 12 months: Non-gamblers, Lotto/keno only, and ‘continuous’ (gambled on any mode other than Lotto/keno).

For the longitudinal analysis of gambling data, the focus was on changes over time. The three outcome variables that were analysed were: giving up gambling, taking up gambling and change in usual expenditure.

There were some slight differences in the socio-demographic profile of the participants. A greater percentage of Samoan and Tongan fathers reported no formal qualifications compared to the other ethnicities. Niuean mothers were more likely to be in the 30 to 39 year age group and less likely to be aged 40+ years than the other ethnicities and a greater percentage had a higher level of education (post-school qualification) (with Other Pacific). A greater percentage of Niuean fathers was in the 20 to 29 year age group than the other ethnicities.

A majority of mothers and fathers were partnered and the greatest percentages were in the \$501 to \$1,000 weekly household income bracket. There was a relatively equal distribution of boys and girls and approximately half the children were from households comprising five to seven members. Mothers and fathers generally gambled alone or with their spouse/partner.

Some gender differences in gambling participation, gambling-associated variables and differences in changes over time were noted, as detailed below. No major gender differences were noted for general health.

Children's gambling was assessed against various factors. Associations with gambling are noted below. There were no associations with gambling for family cohesion, physical abilities, relationship with parents and peers, school ability and enjoyment, self-opinion, other after-school activities (e.g. homework, sports, after-school care, belong to clubs/organisations), home environment (e.g. access to computer and internet, sharing of bed and bedroom with others), and level of parental guidance.

Ethnic differences

Samoan fathers

- Samoan fathers were the *least likely to gamble* compared to fathers in the other Pacific ethnicities.

Cook Islands fathers

- Cook Islands fathers were the *most likely to gamble* compared to fathers in the other Pacific ethnicities.

Associations with gambling

Mothers

- Mothers who *never attended church* had *1.94 times greater odds* for gambling on *continuous modes* than mothers who only attended Pasifika churches "a lot".
- Mothers who had *low self-esteem* had *1.88 times greater odds* of gambling on *continuous modes* compared with mothers who did not have low self-esteem.

Fathers

- Fathers who *never attended church* had *2.74 times greater odds* for gambling in the *past year* and *3.66 times greater odds* for gambling on *continuous modes* than fathers who only attended Pasifika churches "a lot". Fathers who *attended non-Pasifika churches* had *2.16 times greater odds* for gambling in the *past year* and *2.39 times greater odds* for gambling on *continuous modes* than fathers who only attended Pasifika churches "a lot".
- Fathers who rated their general health as *poor* had *4.90 times greater odds* for gambling on *continuous modes* than fathers who rated their general health as good. Fathers who rated their general health as *fair* had *1.81 times greater odds* for gambling on *continuous modes* than fathers who rated their general health as good.

Children

- Children who scored in the '*clinical*' externalising range of the *Child Behaviour Checklist* had *1.89 times greater odds* of being a *gambler* than children who scored as normal on the range. Children who scored in the *higher range* of the *hyperactivity domain of the Strengths and Difficulties Questionnaire* had *1.32 times greater odds* of being a *gambler* than children who scored in the lower range of the domain.

- *The more frequently children spent time with friends, had paid work or after-school activities the greater odds they had for being a gambler: 1.76 times greater for spending time with friends ‘several times a week’ or ‘every day/almost every day’ after school; 2.37 times greater for those who had paid work ‘every day’ or ‘almost every day’ after school; 1.88 times greater for those who had after-school activities ‘several times a week’, when compared with children who never had those activities.*

Longitudinal changes

Mothers

- *Mothers participating in gambling increased from 36% (n=347) in Year 6 to 49% (n=426) in Year 9.*
- *A change in marital status of mothers was associated with greater odds for giving up gambling than marital status remaining unchanged: 2.06 times greater if became partnered, 1.73 times greater if became separated from partner.*
- *Mothers taking up drinking alcohol had 0.65 times the odds for giving up gambling compared with mothers who did not take up drinking alcohol. They also had 2.23 times greater odds for starting gambling. Mothers taking up drinking alcohol also increased their mean weekly gambling expenditure by \$5.25.*
- *Mothers giving up drinking alcohol had 1.66 times greater odds for starting gambling compared with mothers who did not give up drinking alcohol.*
- *Mothers taking up smoking had 2.12 times greater odds for starting gambling compared with mothers who did not take up smoking. Mothers taking up smoking also increased their mean weekly gambling expenditure by \$3.68.*
- *Mothers who lost employment reduced their mean weekly gambling expenditure by \$4.84.*

Fathers

- *Fathers taking up drinking alcohol had 2.74 times greater odds for starting gambling compared with fathers who did not take up drinking alcohol. Fathers taking up drinking alcohol also increased their mean weekly gambling expenditure by \$6.47.*
- *Fathers giving up drinking alcohol had 3.75 times greater odds for giving up gambling compared with fathers who did not give up drinking alcohol. Fathers giving up drinking alcohol also reduced their mean weekly gambling expenditure by \$7.13.*
- *Fathers becoming depressed had 3.34 times greater odds for starting gambling compared with fathers who did not become depressed. Fathers becoming depressed also increased their mean weekly gambling expenditure by \$6.47.*



5. RESULTS: FOCUS GROUP AND INTERVIEW DATA ANALYSES

Focus groups were conducted with key Pacific stakeholders including gambling treatment providers, gambling venue staff, general community gamblers and non-gamblers¹⁴, current/ex-problem gamblers, significant others of problem gamblers and church leaders. The purpose of the focus groups was to elicit views on Pacific people's gambling (or non-gambling) in relation to Pacific culture, and the effects of gambling (and problem gambling) on Pacific families and communities. Recognising that Pacific people are a heterogeneous group, Samoan, Tongan and Cook Islands views¹³ were specifically sought, as were those of New Zealand born and island born young people (aged 18 to 24 years).

Key topic areas covered in the focus groups were:

- Understanding what is meant by the term 'gambling'
- Positive aspects and impacts of gambling specific to Pacific individuals, families and communities
- Negative aspects and impacts of gambling specific to Pacific individuals, families and communities
- Culture-specific (including gender roles) relationships with gambling participation

Semi-structured individual interviews were conducted with Samoan, Tongan and Cook Islands general community gamblers (including young people aged 18 to 24 years) and non-gamblers¹⁴, current/ex problem gamblers and significant others of problem gamblers. The purpose of the interviews was to allow for data to be gathered that expanded and/or clarified the information obtained from the focus groups. Thus, the topics covered in the interviews were tailored based on the responses gathered from the focus groups.

Key topic areas covered in the individual interviews were:

- Importance of family in gambling or not gambling
- The role of gambling in Pacific families and communities
- Social/community pressures regarding gambling/not gambling
- Aspects of culture/identity that are protective against harmful gambling
- Aspects of culture/identity that are risk factors for harmful gambling
- Why Pacific people transition from gambling to problem gambling (and vice versa)
- Forms of gambling that may represent social capital and social connectedness in Pacific communities
- Help-seeking behaviours and knowledge and opinions of current services

Focus groups and interviews were semi-structured to allow scope for participants to elaborate within the areas under question, to enable detailed and free responses. They were digitally recorded for subsequent data transcription and analysis. A systematic qualitative analysis of similarities and differences in participant's perceptions was conducted to interpret the data from the transcribed recordings in relation to the original research questions. Emerging trends and patterns were grouped according to themes. Responses were ordered into more specific categories for comparative purposes to determine possible cultural differences. A 'picture' of the impacts of gambling and problem gambling on Pacific families and

¹³ The scope of this project precluded more than three ethnic groups being specifically included in the qualitative part of the project.

¹⁴ Although some of the participants gambled, if their gambling frequency was less than monthly they were considered to be non-gamblers for the purpose of the focus groups.

communities emerged as the data analysis proceeded. Qualitative analyses were undertaken using NVivo (Version 9) software.

This chapter provides a summary of the themes identified. Through the process of examining the dialogue from the focus groups and interviews, a number of themes emerged. As there was wide discussion within the groups and between individual interview participants, the themes that are reported are pertinent to issues of gambling and problem gambling amongst Pacific families and communities. Participant characteristics are presented in section 5.1, with focus group themes presented in section 5.2 and interview themes presented in section 5.3. The chapter summary is presented in section 5.4.

5.1 Participant characteristics

5.1.1 Focus groups

Twelve focus groups were conducted. The participant mix of each group varied as detailed previously in Table A, section 2.5.1). Participant characteristics of the target groups are detailed below.

Pacific staff of gambling treatment providers

The five participants comprised two males and three females of Samoan, Tongan, Niuean and multiple Pacific ethnicity. Their age groups were in the ranges 25 to 34 years to 45 to 54 years. All participants were in one focus group.

Pacific gambling venue staff

The seven participants comprised five males and two females of Samoan, Tongan and multiple Pacific ethnicity. Their age groups were in the ranges 25 to 34 years to 45 to 54 years. All participants were in one focus group.

Samoan community gamblers

Six Samoan community gamblers participated across five focus groups. There were three males and three females aged from 25 to 34 years to 45 to 54 years. Their gambling included Lotto, Instant Kiwi, electronic gaming machines and other (reported by one participant to be raffles).

Samoan community non-gamblers

Eight Samoan community non-gamblers participated across four focus groups. All were female and were aged from 25 to 34 years to 45 to 54 years.

Tongan community gamblers

Eight Tongan community gamblers participated across four focus groups. There were two males and six females aged from 25 to 34 years to 45 to 54 years. Their gambling included Lotto, Instant Kiwi, housie, horse/dog racing, electronic gaming machines and other.

Tongan community non-gamblers

Seven Tongan community non-gamblers participated across four focus groups. All were female aged from 25 to 34 years to 55 to 64 years.

Cook Islands community gamblers

Nine Cook Islands community gamblers participated across four focus groups. There were four males and five females aged from 25 to 34 years to 55 to 64 years. Their gambling

included Lotto, Instant Kiwi, housie, horse/dog racing, sports betting, electronic gaming machines, table games and other (reported by three participants to be raffles).

Cook Islands community non-gamblers

Eight Cook Islands community non-gamblers participated across three focus groups. There were three males and five females aged from 25 to 34 years to older than 65 years.

New Zealand born youth community gamblers

Seven New Zealand born youth community gamblers participated across four focus groups. There were two males and five females of Samoan, Cook Islands and multiple Pacific ethnicity. Their gambling included Lotto, keno, Instant Kiwi, housie, electronic gaming machines, internet gambling and other (reported by one participant to be raffles).

New Zealand born youth community non-gamblers

Five New Zealand born youth community non-gamblers participated across four focus groups. All were females of Samoan ethnicity.

Island born youth community gamblers

Three island born youth community gamblers participated across three focus groups. There were two males and one female of Samoan, Tongan and Cook Islands ethnicity. Their gambling included Lotto, Instant Kiwi, housie, electronic gaming machines, internet gambling and other (reported by one participant to be raffles).

Island born youth community non-gamblers

Three island born youth community non-gamblers participated across two focus groups. There were two males and one female of Samoan and Tongan ethnicity.

Current or ex-problem gamblers

The six participants comprised one male and five females of Samoan ethnicity. Their age groups ranged from 25 to 34 years to 55 to 64 years. Their gambling included Lotto, keno, Instant Kiwi, housie, sports betting, electronic gaming machines, casino table games, and internet gambling. They participated in the same focus group as significant others of problem gamblers.

Significant others of problem gamblers

The five participants comprised three males and two females of Samoan ethnicity. Their age groups ranged from 18 to 20 years to 45 to 54 years. Their gambling included Lotto, keno and electronic gaming machines. They participated in the same focus group as current or ex-problem gamblers.

Church leaders

The five participants comprised two males and three females of Samoan, Cook Islands and multiple Pacific ethnicity. Their age groups ranged from 25 to 34 years to older than 65 years. All participants were in one focus group.

Other participants

In addition to the target groups detailed above, 13 other participants were included in the focus groups. They comprised two community gamblers and three community non-gamblers whose ethnicity was a Pacific group other than Samoan, Tongan or Cook Islands or who were of multiple Pacific ethnicity where Samoan, Tongan or Cook Islands was not identified as being of primary importance.

5.1.2 Individual interviews

Fifteen semi-structured individual interviews were conducted. Participant characteristics are detailed below.

Community gamblers

There were six community gamblers comprising two Samoan (both female), two Tongan (male and female) and two Cook Islands (male, grew up in Australia; and female). One Tongan participant and one Cook Islands participant was aged 45 to 54 years, the other Tongan participant was a youth aged less than 20 years and born in New Zealand. The other participants were all youth aged 20 to 24 years and born in New Zealand. Their gambling included Lotto, Instant Kiwi, electronic gaming machines, casino table games and internet gambling.

Community non-gamblers

There were three community non-gamblers comprising one Samoan (male), one Tongan (male, also Niuean ethnicity) and one Cook Islands (male). The Tongan participant was a youth aged 20 to 24 years and born in the United States of America. The other participants were aged between 25 and 54 years.

Current or ex-problem gamblers

The three participants identified as being of Samoan, Tongan¹⁵ or Cook Islands¹⁶ ethnicity and were either in the 25 to 34 year or 35 to 44 year age range. Their gambling included Lotto, Instant Kiwi, housie and electronic gaming machines.

Significant others of problem gamblers

The three participants identified as being of Samoan, Tongan or multiple Pacific and other ethnicity (including Cook Islands) and were aged between 20 to 44 years. Their gambling included Lotto, housie and electronic gaming machines.

¹⁵ Identified as Tongan and Cook Islands ethnicity on the self-completed demographics form but only identified as Cook Islands during the interview.

¹⁶ Identified as Cook Islands, Niuean and Maori on the self-completed demographics form but in the interview identified as Niuean and Maori but living with Cook Islands husband and his Cook Islands family.

5.2 Focus group themes

Participants were recruited for the focus groups based on distinctions between the groups such as community gambler versus community non-gambler, and New Zealand born youth versus island born youth. However, it became apparent during the facilitation of the focus groups that these distinctions were arbitrary with blurred boundaries. For example, as is detailed below, due to the way participants defined ‘gambling’, some participants who self-reported as non-gamblers were, in fact, gamblers. In regard to the youth participants, as the focus groups progressed it became apparent that place of birth was not as significant as place and length of residence, how they were brought up, or whether they had recently lived in the islands. Due to the above, quotations reported in the ensuing pages are not distinguished by whether the participant was a gambler or non-gambler or whether they were island or New Zealand born youth. Rather, this information was drawn out in the themes which emerged from the analyses of the focus group discussions.

It was also apparent during the focus groups that a number of community participants were ‘significant others’ of gamblers. They have not been labelled as such since ‘significant others’ of current or ex-problem gamblers was a category of participant specifically recruited for a focus group. However, from the results detailed below it is clear that some of the community participants are speaking about personal experiences of close family members.

5.2.1 Defining ‘gambling’

Participants held very distinctive views of what is, and what is not, gambling. The general view was that casino gambling, gambling at the TAB and housie were ‘gambling’ whilst Lotto, Instant Kiwi and raffles were not. The distinction seemed to be whether there was benefit to a community or family from the activity, in which case participants generally considered it not to be gambling but a different behaviour, for example fund raising. For this reason, there was some confusion about whether the participants were gamblers or non-gamblers; as focus groups progressed, it became apparent that some participants who self-reported as non-gamblers were, in fact, gamblers. No ethnic, gender or age differences emerged in understanding what is meant by ‘gambling’.

“...I thought that going to the casino and TAB and the housie and all that kind of stuff is gambling. It’s really hard core into gambling. I thought Lotto is... is a soft form of gambling?” (Samoan, Female)

“...if you are gaining a benefit from it to your family, we don’t view it as gambling like was that raffle tickets, raffle or whatever.” (Tongan, Female, Youth)

Some participants acknowledged a distinction between the Western definition of gambling and the Pacific concept of gambling; the latter viewpoint appeared to be more related to Pacific gift-giving customs rather than a generic concept of gambling.

“It’s the definitions of ‘gambling’ from a Palagi [Western] concept and the understanding of gambling by the Tongan you know. There’s a fine line between how we define gambling.” (Tongan, Female)

“I wouldn’t accept that as gambling. I think it’s an exchange of gifts.” (Cook Islands, Male)

These viewpoints appeared to stem from the perception that there is no 'gambling' in Pacific culture; a theme which was identified by several participants.

"...from my perspective there's no such [thing as] 'Pacific gambling'." (Samoan, Female)

"...from a Cook Islands born... it's not a culture thing, because we do not have any gambling where we come from..." (Cook Islands, Male)

"We have no such thing as gambling. We have conseti. Conseti mean when you're doing the Tongan dance and you give the money but it's for good cause like building churches. Gambling never existed in the Tongan culture; it was a Western point of view." (Tongan, Female)

Not unexpectedly, participants who had experienced or had been affected by problem gambling (e.g. current/ex-problem gamblers and significant others of problem gamblers) had a different view of gambling which related to spending and winning money.

"What is gambling to me, it's just something that you put money to in the hope to, you know, gain more money." (Problem gambler, Samoan, Male)

Whilst some other participants equated gambling with problem gambling.

"Yeah, 'cause I thought gambling was spending your money and keep spending it until you're broke and then you go to other people..." (Tongan, Male, Youth)

"When you can't afford the basics, that's when you know you're a gambler." (Samoan, Male, Youth)

"I think it's an addiction." (Cook Islands, Male)

5.2.2 Motivations for gambling

Participants discussed motivations for gambling that aligned with three dominant themes: The role of churches in gambling, the importance of family in gambling participation, and New Zealand and island-born attitudes to gambling.

The role of churches in Pacific gambling

Participants spoke about different policies regarding gambling held by the different religious church denominations. Some denominations do not endorse gambling even for fund raising purposes, whilst others allow fund raising but do not condone other forms of gambling.

"I'm from a [specific name of] church and we don't even do that, not even housie or Lotto or what." (Cook Islands, Female)

"...church they will define which one is gambling and which one is not. So they would probably talk about going to the casino and buying a Lotto ticket as an anti-gambler for us but involving bingos and church fund raising and stuff like that, I don't think they will include that as gambling." (Tongan, Female)

"When I look at the housie, bingo, raffle I don't call those gambling when they do fund raising for the church. The only thing I call gambling is 'go to the casino'." (Church leader)

“The Pastor should not instruct people to go to gambling. The Pastor should, the role of the church, is to tell the people not to go and gamble because gambling, it cost a lot of things.” (Church leader)

Related to the theme of church and gambling was the issue of whether or not God endorsed gambling. Some Tongan participants, in particular, discussed that this was the case whilst other participants disagreed.

“...when you’re a Christian you don’t really believe in luck, right? You believe in if God wills He will give it. So, it’s kind of from a white perspective, they see it as luck. But from a Pacific Island perspective, our parents do it because they believe if God wills for us to have it he’ll give it but through, through Lotto.” (Tongan, Female, Youth)

A theme which emerged from discussions around church and gambling was that gambling acceptability or non-acceptability was definitively a church viewpoint and not a Pacific perspective per se, that is to say that gambling was or was not participated in for religious or church reasons not for particular Pacific ethnic or cultural reasons.

“...a Tongan church that doesn’t allow it while other Tongan church allow it. So it’s not a Pacific view or a Tongan view.” (Tongan, Female)

Within church denominations where gambling is encouraged for fund raising purposes, the obligation to participate was a strong theme which emerged from the participant discussions and which is related to the strong influence of the church.

“...from a cultural point of view, like context, ‘cause us islander, we get ourselves involved with gambling and the main reason why is because we have our cultural obligations like church fund raising...” (Samoan, Male, Youth)

“...we do housie and the purpose of doing the housie is instead of forcing each family to give 500 each week to pay for our church, we do housie and a lot of people in our church use it, so we use that as a fund raising and in our church we don’t see it as a gambling problem because it’s something fun...” (Samoan, Female, Youth)

“...you mentioned fund raising. That’s the culture and also spiritual... like church and stuff... that’s not gambling. That whole process of fund raising for a good cause that’s my point.” (Tongan, Male)

The importance of family in gambling participation

Apart from church influences, participants discussed the influence of family in whether a person gambled or not. For some participants, following on from church fund raising was gambling for the family, in other words, family fund raising. This related to the traditional obligations to immediate and wider family; the gift-giving traditions.

“...family fund raisers, which allows activities such as bingo, housie. It’s as if it becomes key to our family fund raisers. Even in family fund raisers, gambling is used or games that involve the use of money...” (Significant other, Samoan, Male)

“...we have a lot of family commitments especially to Samoa, trying to get money, and that’s how some people get money for the things they want, because Western people don’t share the same commitments as us, such as to our villages back home... if not by putting on dances, yeah, that’s another example, instead we do housie and bingo...” (Significant other, Samoan, Male)

Conversely, for one participant, wanting to have money to send to her family was a motivation to not gamble. For that participant, gambling was a way to lose money and she wanted to save her money for family obligations.

"I don't want to play gambling because I want to save money to send to my family."
(Samoan, Female)

However, apart from the cultural obligations leading to gambling, several more generalised reasons for gambling emerged from the discussions. For some participants, going gambling was a way of escaping from family problems or issues.

... the gambling machine doesn't say anything much right so... whereas at home maybe the wife's a bit yady yady yada." (Tongan, Female, Youth)

"...when things are not right in a family and then you end up taking your problems to a machine instead and gamble..." (Significant other, Samoan, Male)

Some participants discussed how their gambling started due to encouragement or introduction from other family members. In particular, electronic gaming machines were mentioned; they had been a hitherto unknown form of gambling to those participants.

"The reason I started using the machines is because my daughter first took me to it."
(Problem gambler, Samoan, Female)

"...there were no machines like that in Samoa... when I came here in 2006/2007, I stayed with the aunty of my husband, it was the aunty of my husband who took me, and when we went there, it was the first time I had ever heard of machines..." (Problem gambler, Samoan, Female)

New Zealand and island-born attitudes to gambling

Participants noted that the place of birth was not as significant as place and length of residence, how they were brought up, or whether they had recently lived in the islands.

"I think it depends on what kind of family you're raised in 'cause my mum and them, they were brought up in Samoa. But then they came to New Zealand. They're not really into Samoan stuff. But whereas my dad's family they're hard out into Samoan, so when we're all over they're hard out." (Church leader)

A dominant reason for gambling in New Zealand was fiscal motivation, in that participants had available money (versus not available on the islands) to gamble, and needed money to live in New Zealand. This appeared to stem from the more materialistic and individualistic way of life in New Zealand versus a more family and community oriented way of life in the islands.

"...when you come from the islands, you have your plantation where you have taro... you have all sorts of food that you grow with your hands and you don't really need the money because you've got the food there... but when you come to New Zealand... you see the different aspects of gambling, Lotto and bingo, housie, pokies... you get money from Work and Income or from work... that's not enough for me and my family, I have to pay this, I have to pay that..." (Cook Islands, Female)

"...the difference between a Cook Islands born is...you can survive without money, you know, there's food. But for New Zealand born, they need money so maybe from a young person's

perspective you can... it's like gambling to me is people just want more money because maybe New Zealand pay is not, you know, that good... (Cook Islands, Male, Youth)

"...in New Zealand, get some more access here to money... when we grow up in Tonga, it's only our parents that deal with the money... but over here our children have access to money. They can work [from age] 15, 14 and there is policy here that if your parents ask you [to] give your money from your pay from your work, they have a right to..." (Tongan, Female)

"... 'how can you still be working at such an old age?' and then I said, 'hey, how can you live in New Zealand?' You can't live in New Zealand without money." (Church leader)

One youth participant had an additional perspective around the difference between attitudes to culture and respect in the islands and New Zealand. She perceived cultural traditions to be less for those born in this country.

"There's a very big difference in New Zealand born and Samoan born. I think Samoan born, they are more respectful and they're not as open-minded as New Zealand born, in terms of, they would not question their parents. If their parents grew up in a gambling environment, the kids will follow. They wouldn't question their parents whereas New Zealand born, they have been influenced by so many other cultures that they can make decisions on whether they want to gamble or even if their parents didn't gamble, they would gamble anyway if that's what they've been influenced from their friends." (Samoan, Female, Youth)

5.2.3 Positive aspects and impacts of gambling

One dominant theme emerged from discussions around positive aspects and impacts of gambling with some participants discussing the perception of gaining money (winnings) from gambling which could then be used to benefit personal life and bring happiness.

"And he got winnings and which enabled us, enabled them to start a family and purchase a home." (Samoan, Female)

Related to this theme, participants discussed the Pacific-specific viewpoint that gambling allowed families to raise money for events or items they otherwise would not be able to afford. This related to the Pacific idea of shared wealth, for example, when those within the community need money for a specific purpose such as for a funeral or to build a new house or church, the funds are raised by raffles or housie. No ethnic, gender or age differences emerged.

"...churches, when they do fund raise it's not gambling... it is gambling but it's for a cause... It's a positive side of gambling, not a negative." (Tongan, Male)

"...I suppose when you see a building that's been erected because somebody's been selling tickets, that's a positive effect." (Samoan, Female, Youth)

"The reason I want to go there is support the [casino], to make charity to the Starship Hospital... we win a couple of times, thank you Jesus, it's a bonus." (Cook Islands, Male)

Other minor themes were more general in nature. A couple of youth participants noted that gambling to deal with stress or to bring families together was a positive impact:

"So as a coping mechanism to deal with stress." (Samoan, Male, Youth)

“But if there was no gambling then it wouldn’t bring some families together; they’ll still fight, ah?” (Samoan, Male)

Some other participants noted the pleasure of gambling was positive.

“I find it a lot of fun” (Cook Islands, Female) and *“...like that thrill...”* (Cook Islands, Male)

5.2.4 Negative aspects and impacts of gambling

Some of the negative aspects and impacts of gambling discussed by focus group participants did not appear to be particularly Pacific-specific views but were more general in nature. The emergent general theme was that the impacts were extreme, caused principally by large financial deficit leading to detrimental relationships with family or friends, loss of accommodation (unable to pay mortgage) and other belongings (sold to fund gambling) and in one extreme case, a suicide. Again, no ethnic, gender or age differences emerged in the discussions.

“I heard from some of our friends they lost their house, their mortgage because of this [gambling].” (Tongan, Female)

“...my sister... commit suicide in 2009 because of her husband... and my sister was depressed because she worked as a cashier in one of the restaurants and she gave her money to her husband to profit... so I know now gambling is very, very, very um, bring evil to our family. Destroy the relationship...” (Samoan, Female)

However, some Pacific-specific themes also emerged relating to negative impacts of gambling. Although gambling to help others (e.g. raffle tickets or house/bingo at church) was seen as acceptable behaviour by participants, for a couple of participants the competitiveness within church gambling when people felt the need to donate/gamble more than they could afford, to ‘outdo’ others was perceived to be a negative consequence.

“...giving’s hard but sometimes it gets to that competitiveness where you think, I want more for me, I want them to choose me to be a leader blah blah blah so I’m gonna give more...” (Tongan, Female, Youth)

“No longer need the mats, no longer need the food, but dollar signs which I see ‘are they gambling our money to make them who they are to build, who’s got the biggest church, the biggest building, the luxurious way of providing the technologies?’” (Tongan, Female)

A similar perception was voiced by other participants in terms of the boundaries of church fund raising gambling becoming blurred either in relation to more harmful forms of gambling or leading to other forms of gambling in order to try and obtain the donation money.

“Okay, at the moment if they [churches] can’t define gambling and they can’t define the difference between fund raising and gambling, how can we answer that question? Because most, the minister, like you said, they endorse it as a way of funding but little do they know that their way of funding is causing harm.” (Treatment provider)

“However, it can be argued that maybe the process of donating can pressurise someone to actually be influenced to actually seek, you know, to go to the slot machine, ‘aw, I need to’ but again, I would say it’s an individualistic thing.” (Tongan, Female)

For one participant, negative impacts of gambling related to an inability to fulfil cultural obligations to the family.

“...when that money’s gone, you feel, get anxiety, get mood swings and then you’re gonna think, ‘oh my gosh, what am I gonna explain to my parents’, having to give them the money for food and to send to Samoa, yeah, it’s all heart breaking.” (Problem gambler, Samoan, Female)

Another major Pacific-specific theme which emerged related to the negative impact of gambling on families and, in particular, on children who were often neglected. Participants voiced this as important due to the significance placed on family and collectiveness.

“...some parents do not care about their children when they’re gambling. The children don’t exist.” (Cook Islands, Male)

According to participants, problematic gambling led to lying to family. This common theme was significant because it could lead to marriage or family relationship break-up.

“They’ll lie, everything. Lie to you... the family, he nearly lost his kids, his wife.” (Samoan, Female)

“We had a nice marriage in Samoa but as soon as we came here, not a day went by where we didn’t argue about my addiction with the machines, because it reached a point where he started finding out about my lies.” (Problem gambler, Samoan, Female)

A theme voiced by current or ex-problem gamblers, based on their personal experiences, which was not elaborated on by community participants focused on the individual ‘addictive’ aspects of gambling.

“...gambling is considered an illness to me... chasing to get the money back... But it’s all in the mind, yeah, it’s illness in the mind.” (Problem gambler, Samoan, Female)

“...that’s like a relationship between you and the pokie...” (Problem gambler, Samoan, Female)

However, in an alternative opinion to the “addictive” aspect of gambling, one participant stated that she thought an individual should take responsibility for their own actions. To illustrate this point, she quoted the following Samoan proverb.

“It’s ‘e gase le pa’a i lona vae’ and that just means ‘a crab, when a crab is [caught it is] pierced by its own leg’¹⁷... a lot of the stuff is a consequence of our own actions.” (Samoan, Female)

Unacceptable forms of gambling

Unacceptable forms of gambling emerged in discussions as a minor theme and were important to some participants. The unacceptability related to negative aspects and impacts of gambling.

If the gambling was not for the church or appeared to be ‘wasting’ money that was needed for the family, then some participants considered those to be unacceptable forms of gambling.

¹⁷ The proverb details that the crab dies by its own leg when caught by a fisherman who uses one of the crab’s legs to pierce it, i.e. someone who gets into trouble because of their own actions.

“...the pokie machines, you can waste everything, like at the casino, you know? Like me, waste the money.” (Significant other, Samoan, Male)

“...it’s the excessive forms like gambling and casinos.” (Samoan, Female, Youth)

“...you know the gambling outside the church is bad...” (Samoan, Male, Youth)

Treatment providers focused more on unacceptable gambling being when other people were affected, for example:

“So we never go around there and yet, we have a family violence programme running... do you wonder what family violence comes out of? You got alcohol, smoking and gambling, and then behind them you’ve got family violence and then, you know one of the biggest issues that’s happening right at this moment in the Tongan community is suicide.” (Treatment provider)

5.2.5 Cultural protective factors against harmful gambling

An important protective factor against harmful gambling which emerged in the discussions was that in the islands there were few, if any, gambling opportunities. In other words, gambling did not occur because it was not available.

“...because there’s no TAB in Samoa, there’s no casino...” (Samoan, Female)

“...when I grow up in the islands, no gambling in the island, in Tonga.” (Tongan, Female)

Some participants discussed island life as being protective in that living in the islands there are many things to do to occupy time, particularly being part of a collective culture. This implies that one would be too busy to gamble in the islands even if gambling opportunities were available. However, in New Zealand there is much less to do to fill time, possibly due to a less collective/sharing way of living plus there is the availability and accessibility to gambling.

“It’s probably because back home [in the islands], we used to have a lot of activities outside. We spent a lot of time doing a lot of activities... but when we come here, there’s hardly anything around to do...” (Tongan, Female)

“The family core values, the connectedness, the tightness in the islands, how everyone’s collective whereas in New Zealand, there is somewhat of a disruption, a dysfunction. People are more separate. Their vision is distorted. They think more about, how to get the quick cash. There’s less sharing in New Zealand because there’s so much accessibility to other things, there’s temptation and all that.” (Other Pacific, Female)

In the islands the status and authority of elders over younger people could also be a protective factor against problematic gambling. For example, if an elder forbade gambling, then the younger generation would obey because to disregard the authority of the elders could have severe consequences. However, for some participants, this authority appeared to be somewhat lost when living in New Zealand where the culture could be less collective and more individualistic.

“You know in New Zealand, there’s no power here in New Zealand. But in Samoa, if a similar theme was in Samoa, then I’m sure that there is power in culture because if you look at the role of a church-going father or the chief of a village, who watch over the village, then

they would say to you, do not go to the machines because if you do, you will be banished from the village... But over here in New Zealand, I don't think there's a Samoan way of being in New Zealand." (Problem gambler, Samoan, Female)

5.2.6 Cultural risk factors for harmful gambling

A dominant risk factor for harmful gambling which emerged from the focus group discussions was the plethora of gambling venues and opportunities in New Zealand for both migrant and Pacific born populations.

"It's like a culture shock... you're shocked to see these big buildings, so many machines." (Samoan, Female)

"... you drive down Otara, Otāhuhu anywhere in South Auckland, probably there's three or two TABs around the corner." (Tongan, Female, Youth)

A second dominant theme voiced by participants was the perception that gambling was an easy way to make money. This theme also emerged from the gambling venue staff focus group though it was framed more in terms of *"trying to make money"*.

"Getting fast money, you don't have to just get 400 from nowhere out of a bonus, instead of having to work for it, kind of thing." (Samoan, Female, Youth)

Another risk factor which emerged was the ease of obtaining funds to gamble, from family members who may have to give the money out of respect for that person. This was discussed particularly by the youth participants.

"...if my dad was addicted to gambling and he came home and I was the one that worked and he said 'give me the money', of course I would give it, no questions asked or whatever. I would just give it. It comes from that idea of respect and love..." (Tongan, Female, Youth)

5.2.7 Help-seeking behaviours

Participants identified several enablers and barriers to help-seeking for problem gambling. However, it is of note that mostly female community participants discussed help-seeking, perhaps reflecting the fact that women are more likely to acknowledge problems and try to resolve them, or are more comfortable talking about problems in a group setting, than men who may try and resolve issues on their own. This theory was corroborated by one male participant who stated that *"Some people find it hard to get other people from outside telling you how you should act."* (Samoan, Male, Youth)

Enablers

A dominant emergent theme was that, for some participants, help started at home with family members trying to help kin with problematic gambling, either by reminding them of their family or by trying to assist them to access treatment services.

"I try to lay it down... you wanna go and marry your horse and stay with your friends, that really, really love that world, or you wanna come on back to this world where your family can look after you when you're sick?" (Samoan, female)

“I’ll probably, at best, I’d probably take him to a gambling service first... yeah, through manipulation I’d take him there.” (Tongan, Female, Youth)

Some participants mentioned reaching a crisis point as being the trigger for seeking help; for one participant this was aided by hearing a radio advertisement for a treatment service.

“...I’m back at the machines, it’s as if I’m under some spell that I just can’t snap out of... then I began to see how this could lead to the breakdown of my family. Once this occurred to me, I started to call the people who can help ...the people at the gambling association...” (Problem gambler, Samoan, Female)

“It [the television] was repossessed because of the money borrowed and... she can’t handle it any more and then one day that ad came on the radio and then I jotted down the number and called up this lady.” (Problem gambler, Samoan, Female)

Many participants had seen or heard advertisements for gambling treatment services in local newspapers, on television and in radio advertisements, in venues and on electronic gaming machines, and in other social services.

“I’ve seen a quite a few advertised on TV for you know, for gambling, alcohol and all that on TV. So it’s out there if you want it.” (Cook Islands, Female)

“They’ve got a lot of posters, too... the doctors, the Citizens’ Advice Bureau, library... it’s just up to you to pick up the phone.” (Cook Islands, Female)

“...the Samoan Radio... I’m sure that message will go through, you know, through repetition...” (Samoan, Female)

Culturally appropriate service provision when trying to help someone with a gambling problem was an important theme which emerged, particularly for the older island-born generation. This revolved around understanding clients’ and their traditional beliefs and values and providing a setting in which clients would be familiar and comfortable.

“...there is, you know, the European’s way of solving things, does not fit into the Pacific way of solving stuff. It has to be a holistic approach. You gotta look at from there, the spirit, their body and mind. You gotta cover all those and you gotta eliminate only hazards, you have to be focused. If they are tied to a church, you bring in the faifeau [pastor]...” (Treatment provider)

“...you know our people, when you go to church you wear lavalava [traditional clothing], and don’t come in pants. That’s how we approach our older generation. When you present yourself in a manner that they know that they opening and trust you, then of course they’ll open up.” (Treatment provider)

Enablers to help-seeking could also come from within a venue with staff attempting intervention if they felt someone was gambling too much. However, the effectiveness of this was queried by a couple of participants who felt that gamblers could misunderstand the staff member’s intentions or that if intervention was attempted in one venue that *“it still doesn’t stop people from going across the road or somewhere else”*.

“In my opinion, that’s usually the main thing is that they take it the wrong way. They think that I’m trying to save the company money by not making them win...” (Venue staff)

The church could also act as an enabler for help-seeking behaviours with one church leader stating: *“I think the best thing leaders can do is guidance, you know?”*

Barriers

Whilst a dominant enabler was the help that started in the home, an emergent cultural barrier was that there were some issues with trying to help family members, particularly for younger people in respect to their elders, due to the strong tradition of respect for elders.

“Because he is my dad and I won’t be able to talk to him, talk over him. I won’t be able to do that because that was the way I was brought up... if I talk you be quiet and listen even though if I’m wrong or right... ‘honour your parents’...” (Tongan, Female, Youth)

“I see it in the Cook Islands culture, ‘I don’t want to listen to the children, you’re children, I tell you what to do’”. (Cook Islands, Female)

However, for one participant there was a shifting in the culture of respect and fear of punishment from living in the islands to a more lax attitude in New Zealand.

“Back in the island, you know, when your mum tells you what to do, you just do it because you’re scared of the fasi [being physically disciplined] but now you know, living in New Zealand, this world.” (Samoan, Female)

The shame and stigma which are felt around problem gambling was another theme which emerged in discussions around barriers to help-seeking.

“I was one of the lucky ones that because I came home to a sad environment where I couldn’t provide, I couldn’t provide and that hit rock bottom for me or otherwise, I didn’t get professional help. I knew it was out there but no I, island people sometimes are too akama, too shamed, but personally when you hit rock bottom.” (Samoan, Female)

“And I think that there’s a stigma that comes with it and I think that’s what makes it really difficult is, I’ve got a problem you might know my family and now you’re gonna look at my financial, you know?” (Treatment provider)

As detailed above, the church could play an enabling role in help-seeking behaviours; however, it could equally be a barrier to accessing treatment: *“I’m a leader of a church. It’s hardly for me to see who’s addicted, you know? What members of our churches are addicted to gambling. It’s hard to tell...”*

5.3 Individual interview themes

Quotations are presented which are representative of participants' views and also where some participants held different viewpoints from others. The themes were based on focus group themes requiring expansion or clarification, or to cover gaps in current knowledge that had not emerged as themes in the focus groups.

5.3.1 Motivations for gambling

The role of churches in Pacific gambling

The role of churches featured highly in relation to community pressures to gamble or not to gamble in the focus groups and this theme again emerged in the interviews, perhaps being an indication of the importance of church and religion in Pacific peoples' lives. Whether a family's church or religion endorsed gambling, or prohibited it, appeared to be a key factor in whether families and individuals took part in gambling activities.

"...a lot of my aunts do it. Gamble at the casino, often like that but our family has been quite strict on that because of our religious reasons... in our religion it's basically, expressively forbidden [to] delve into gambling..." (Tongan, Non-gambler)

"How I've grown up is that in our religion we have been encouraged not to take up gambling because of all the effects that it has on families..." (Cook Islands, Significant other)

"...for a Samoan family, because family life is so tied to their church life, it intertwines depending on their religion and their church. For example, many of my cousins that go to the churches and... do housie which is a form of gambling and it's a weekly thing for them so it actually plays a big part in their family lives... you can't separate a family from the church because there's beliefs in the church that actually go inside with the family and that's what I see with our family - is that because our church doesn't practice it [gambling], we don't practice it, and because they said that from the Bible this is why we shouldn't do it so that's why our family doesn't do it." (Samoan, Gambler, Youth)

It is of interest that the latter participant stated that his/her family does not gamble because their church does not practice gambling, and yet the participant identified as a gambler in the interview. This could be another indication of the blurred definition of gambling, as discussed in the focus groups.

One participant discussed alternative ways of fund raising instead of gambling. This tied in with their particular church not condoning gambling.

"Because my church... it doesn't believe in gambling... I don't know what the verse is but 'a man shall work for his food?'... they said that housie is an easy way to get to money instead of working hard, so that's why we don't do it [gambling]... that's why we do different types of fund raising, such as onion picking and car wash because we believe that we should work for the money for our church instead of doing the easy way and going straight to housie which is a form of gambling but covered with the word 'fund raising' in church." (Samoan, Gambler, Youth)

General community fund raising was also a motivation to gamble, although similar to the participant quoted above, one participant found a way to not gamble whilst still contributing to the fund raising efforts.

"I get a lot of friends who ask my husband and I to participate in um you know they used to have those toll tickets and... raffles and things like that... I feel a bit sad that we're not able to participate in those things but what we normally do is we, if we can, is just give a donation..." (Cook Islands, Significant other)

The importance of family in gambling participation

Some participants gambled for social connectedness, revolving around gambling being a social event and a means of getting together with family or friends. An added benefit was the chance of winning something. For one participant, this only related to specific modes of gambling such as bingo, as other modes of gambling (such as going to the TAB or casino) were not conducive to the gambling being a family or social event.

"...gambling is pretty much any social gathering where you come together to win something back." (Samoan, Gambler, Youth)

"It's [gambling] our way of defining how we come together and connect." (Tongan, Gambler, Youth)

"...a way to be with your friends, and a form of entertainment but also a chance that you could win something... I see a lot of Cook Islands men at the TAB and a lot of the women are at the casino. For some reason, a lot of women they go together in groups, so it's that form of socialising plus when they have a chance." (Cook Islands, Significant other)

"I don't know if it's a community thing or the women's kind of group. They get together and they feel like they 'aw, Saturday night out - let's go there', you know, that kind of thing?" (Tongan, Problem gambler)

"In terms of acceptance, it would be bingo. We see that as family interaction... family fun... family is all together in one place quite often, we don't see the types of gambling as such, as TAB, casinos obviously, because the family aren't together..." (Cook Islands, Problem gambler)

Another participant believed that that the decision to gamble or not gamble was a family one.

"I think it's important for families to be part of making decisions whether gambling is good/ not because it affects a lot of families." (Cook Islands, Gambler)

For one non-gambler, family appeared to be important in supporting a person who gambled, not in terms of their gambling but in terms of supporting the gambler's other family members who may otherwise have gone without food.

"...because there are family members that do gamble and it's always been a struggle with trying to support them, financially, not in the sense of fully supporting them but providing them with a means to maybe feed their families because they've gambled all their money away..." (Samoan, Non-gambler)

As had emerged from the focus groups, another community motivation to gamble related to the cultural tradition of financial obligations to support family, particularly those family members still living in the islands. Cook Islands participants particularly discussed this theme in the interviews.

"I suppose it all comes back to finances?... a lot of Cook Islanders gamble because they think it's a way of getting money to help in the family and so you go out of your way, believing that

you'll win but sometimes, you don't and that's all the money gone for your family.” (Cook Islands, Gambler)

“...there's always expectation for our Pacific Islanders living in New Zealand to provide for those back in the islands because we're supposed to have the better opportunities, more work, more money, but really because life over here is harder probably than the islands... that's how people could turn to gambling.” (Cook Islands, Significant other)

Escaping from stress was considered to be a motivation to gamble by one youth participant.

“When they get too stressed out or when they just want, when they work, work, work and then, for them, they see it as a break from reality. They just go sit down and they gamble.” (Tongan, Gambler, Youth)

5.3.2 Cultural protective factors against harmful gambling

One participant felt that there were no traditional cultural aspects which could protect against harmful gambling.

“I don't think there's any cultural things that would stop anyone from gambling. Yeah, it's indiscriminate, just gets whoever, I guess...” (Cook Islands, Gambler, Youth)

However, this was not a general viewpoint. Religion was a protective factor discussed by some participants, presumably for those whose church did not condone gambling.

“...for me, as a person, that'll take me away from gambling, like harmful forms would be, it'll be my religion, spiritual side...” (Samoan, Gambler)

“I think that's why, yeah, I told you, [I] don't gamble much because the church, that's why.” (Tongan, Gambler)

“...it's God that kept me away from gambling...” (Cook Islands, Gambler)

“...I think its individual choice, but I know that religion does have an influence on us...” (Cook Islands, Significant other)

As was noted in the focus groups, for one interview participant, needing money for family financial obligations was a protective factor against excessive gambling.

“Financial obligations that really, you don't actually have the money to spend on gambling... that for me is one reason why I think we don't need gambling because if you gamble that money, you lose, what money can you give to your family when they need it?” (Samoan, Gambler, Youth)

This tied in with family support and cultural changes from being in the islands to being in New Zealand.

“...the stronger the family is, the less likely your leaning towards the gambling side of things...” (Tongan, Non-gambler)

“Here, what I know about here, there’s nothing as strong as talking/communicating. Just talking through things that happen, inside a family... it’s only in Samoa where the chief has a lot of influence...” (Samoa, Significant other)

Not wanting to shame the family name was important to one participant; this ties in with strong family traditions and values and could potentially help prevent excessive gambling.

“...the culture sense, there is value to family names... when you’re getting to that point where you’re gambling too much, you don’t have the money to send to your family, then it’s, in Samoa there’s a saying like ‘to’u valea lou aiga’, you put your family to shame, it gives a bad name to your family and status is really important in Samoa.” (Samoa, Gambler, Youth)

Whilst focus group participants indicated that it was easier to gamble in New Zealand (than in the islands) and that the pressures to gamble were greater (i.e., needing more money and thinking gambling was an easy way to obtain it), one interview participant felt that the information about gambling and harmful gambling available in New Zealand, whilst not protective per se, had to have some positive impact.

“I don’t think it protects you but anyone being raised here and having all of the information implemented in schools and things like that to me, there has to be some kind of positive effect that stuff has on individuals that were born here, raised here and the lifestyle is totally different to the ones in the islands so having an understanding that gambling isn’t a good option, in terms of making money...” (Samoa, Non-gambler)

Interestingly, none of the current or ex-problem gamblers interviewed had any comments regarding aspects of culture or identity that are protective against harmful gambling.

5.3.3 Cultural risk factors for harmful gambling

The perception that gambling was an easy way to make money was discussed by several of the participants as being a risk factor for harmful gambling as people would gamble to try and make money and when that did not happen could potentially keep gambling.

“That’s why I think the youth look at gambling as another easy way to make quick cash so they can keep up to date with what’s going on, um, drinking money, that’s another one, technology is a big one.” (Samoa, Gambler, Youth)

“So when you come over here and you hear people saying, ‘wow, you know, go down to here [gambling venue] and you can make some money easily’...” (Tongan, Non-gambler)

“...to them that’s [gambling] an easy, easy way to make money but not realising it’s an easy way to lose money as well.” (Cook Islands, Non-gambler)

Although fund raising was not raised as a risk factor in the focus groups, it was mentioned by some of the interview participants, and tied in with church pressures for giving money. The perception appeared to be that the pressure to fund raise or donate money to the church could lead to gambling to try and win the money, which is associated with the aforementioned perception that gambling is an easy way to make money.

“I know that culturally, in a Samoan church, pressures of giving money...” (Samoa, Non-gambler)

“They [the church] try and get you to donate a certain percentage of what you earn which I think is wrong. That’s what pushes a lot of Pacific Island people to go and gamble to make that money.” (Cook Islands, Non-gambler)

A vulnerability and potential risk factor mentioned by two Cook Islands participants related to migration from the islands to New Zealand especially relating to the lower educational levels of people from the islands. Again, this theme is associated with the perception that gambling is a way to make money.

“...Pacific families, that didn’t have necessarily good education, the only way they’ll be able to make money would be to turn to the Lotto to get that quick cash, because they wouldn’t be able to get it because of that lower standard of education.” (Cook Islands, Gambler, Youth)

“Maybe lack of education.” (Cook Islands, Significant other)

Another potential risk factor mentioned by participants related to the easy access to gambling in New Zealand and having lots of free time in which to gamble, whereas in the islands one has to work hard to survive and would not have time to gamble even if there were opportunities to do so.

“...people are lured. We often go to buffets. A good example would be, and not specific to this buffet either [name of buffet restaurant], quite often there’s birthdays there and again it’s easy access to the pokie machines...” (Cook Islands, Problem gambler)

“...when they go, it’s usually because they missed the housie, missed the bingo, there’s nothing or it’s too packed then you end up going to those pubs. Go and use it. But it’s every night because they don’t have bingo or housie all the time so they end up going to those other places with machines and spend large amounts...” (Samoan, Significant other)

“I think that Pacific Island people are more susceptible because they come from a country where you have to work very hard, very hard... then they come to New Zealand and find ‘oh, you’ve got a dole, you’ve got this, you don’t have to do anything. You just sit on your ass and all of that’. Next minute they find ‘oh, the housie. The housie’s that, what’s that?’, blah blah blah, and then they find it fun and then they go spend their money...” (Cook Islands, Significant other)

One youth participant commented on a risk factor being parental role modelling due to the fact that if parents gamble then their children are likely to copy the behaviour. Gambling becomes perceived as a normal activity.

“...as an example to say that if my dad’s gambling, then my mum’s probably thinking ‘okay, we both work and we both have to chip in but if you gamble then, why shouldn’t I?’... if I grow up to see my parents gambling and if they were to take off then I see it, ‘aw, so gambling isn’t that harmful’, I see, it’s just, what they do you do, your kids imitate you.” (Tongan, Gambler, Youth)

5.3.4 Transitioning from gambling to problem gambling

One participant talked in depth about how fund raising can lead to more and more gambling because the ultimate goal is to win money and not to raise funds for a cause.

“...what I’m gonna say about fund raising is that housie - they say it’s fund raising, but if you win something there, that’s the taste of ew, I gave \$2, I’m getting back another 10... So once they begin to have that feeling that ‘aw yeah, I can make more money with this little housie’, that’s the addiction and the fear of for gambling, because they feel like they turn \$5 into 20. It can turn, it starts off small... I have never met a Samoan who has jumped straight to casino. They have built a lifetime around fund raising, fund raising, fund raising. All of a sudden, it’s gambling... if you actually think about it, people don’t actually go there thinking ‘I’m going to fund raise’. People go there with the actual mentality that they want to win something in return, that’s all.” (Samoan, Gambler, Youth)

A couple of participants discussed how more frequent gambling could lead to more or problematic gambling.

“I reckon, the frequency. If you’re going there more than once, you’re a gambler. You’re a problem...” (Samoan, Non-gambler)

“I think when they start off normally, they just buy it once a week, and then, I think the more they’ll need the money, the more they purchase it [gamble] to get more money.” (Tongan, Gambler, Youth)

One problem gambler discussed gambling becoming comforting leading to gambling for the comfort.

“You’re gambling. Once you’ve started, it’s quite hard to stop. It becomes a leisure activity. It comes once a week... If you’re happy or not, if you find comfort in it, you’re always gonna return there... we find comfort in the machines, it makes us happy, we go back.” (Cook Islands, Problem gambler)

5.3.5 Help-seeking behaviours

Enablers

As was mentioned by focus group participants, some interview participants had seen advertisements for gambling treatment services, although only television advertisements were mentioned.

“...just that problem gambling one that comes on television from time to time...” (Cook Islands, Gambler, Youth)

“...that’s on TV isn’t it?” (Tongan, Problem gambler)

However, the effectiveness of the advertisements was questioned by a couple of youth participants who wondered about the memorability of the advertisements or the appropriateness of them for younger people.

“I’ve seen the ad with the father and the daughter... it’s a good ad but... it’s one of those ads that you’ve seen and then you don’t remember later on.” (Tongan, Gambler, Youth)

“New Zealand born Samoans know, because the ads that you’ve seen portrayed. It’s targeted at older people. I haven’t really seen one that’s targeted at youth... I don’t think they see youth gambling as the beginning of the problem. I think the ads target when the problem’s actually sunk [sic] rock bottom...” (Samoan, Gambler, Youth)

Barriers

The national telephone helpline was the only treatment service provider recalled by general community participants who could think of a service, though most of these participants did not know the actual name of the service. This is a significant barrier to help-seeking behaviours because if a person does not know that particular types of services exist, they will be less likely to seek assistance.

“I know that there’s a helpline.” (Cook Islands, Significant other)

Others did not know that there were any specialist treatment services for problem gamblers.

“No, I only knew of budgeting. Is there any other agencies?” (Cook Islands, Gambler)

Not unexpectedly, current or ex-problem gamblers were more aware of gambling treatment services since they had utilised services themselves.

Additionally, there appeared to be specific cultural issues for Tongans seeking help around gambling, or seeking help from other Tongans as shared by some of the Tongan participants. This could be related to aspects of shame in having a gambling problem.

“There are certain things that you don’t share with other people and that [gambling] happens to be one of them.” (Tongan, Non-gambler)

“...sometimes Tongans wouldn’t want to talk to a Tongan... for me if I was to walk into a room where it was a Tongan, I wouldn’t open up as much as I would if you or a different Samoan youth, just in case... what if I see this person again? I’d think, it’d be awkward for me to talk to them outside of counselling.” (Tongan, Gambler, Youth)

5.4 Chapter summary

This chapter summarises the main themes arising from focus group discussions and semi-structured individual interviews with key Pacific stakeholders. Not all themes arising from the focus group discussions were included in the individual interviews.

The themes identified below originated from focus group, interview or focus group plus interview discussions. Focus group and interview themes which fit under the same headings have been interwoven under those headings in this chapter summary.

Defining gambling

Participants discussed a strong cultural definition of what is considered to be gambling and what is not considered to be gambling. This differed from the European definition of gambling. In general, casino gambling, TAB gambling and housie were considered to be ‘gambling’ whilst Lotto, Instant Kiwi and raffles were not. If the gambling was for the benefit of community or family it was considered not to be gambling.

Some participants equated gambling with problem gambling. Only the current or ex-problem gamblers and significant others understood gambling to be about risking money.

Motivations for gambling

The role of churches in Pacific gambling

Church fund raising was a subject of significant discussion in the focus groups and interviews with the role a church plays in relation to their congregations' gambling varying from one denomination to another.

Participants noted that some religious denominations endorse gambling (for church fund raising purposes) whilst others do not. Church endorsement of, or forbidding of, gambling activities is not ethnic-specific. Whether a family's church or religion endorsed gambling or prohibited it was a key factor in whether gambling participation occurred.

Within church denominations where gambling is encouraged for fund raising purposes, there was a substantial obligation to participate, which some participants viewed negatively (an influence to start gambling).

Some Tongan participants reported a greater influence of God in relation to gambling participation because "God wills it" was considered not to be gambling.

The importance of family in gambling participation

Some participants gambled (housie or bingo) to fund raise for family commitments relating to traditional gift-giving obligations. However, for one person these obligations were a motivation not to gamble so that the money would not be lost.

For some participants, gambling was a way to escape from family problems or issues. For other participants, gambling commenced due to encouragement from family members or because it was a way to socialise and connect with family or friends. Some participants felt the decision to gamble or not was a family one.

New Zealand and island-born attitudes to gambling

The place of birth was less significant than place and length of residence, how participants were brought up, or whether they had recently lived in the islands. Participants discussed how the more materialistic and individualistic way of life in New Zealand was a fiscal motivation for gambling (i.e. a perceived easy way to make money, money is available to gamble, need to make money to live) than the family and community oriented lifestyle in the islands (i.e. more sharing of food and labour, less need for money to survive).

Positive aspects and impacts of gambling

Participants commented on perceived benefits from gambling such as gaining money (winnings) to benefit personal life, or to benefit the community or family through gambling fund raising activities. This was a Pacific-specific view relating to 'shared wealth', that is families could raise money for events or items they otherwise would not be able to afford (e.g. church fund raising).

Some participants commented on other positive aspects such as gambling being a way to deal with stress, or being a pleasurable activity.

Negative aspects and impacts of gambling

The extreme negative impacts of gambling were a major theme due to the great financial deficit leading to detrimental relationships, loss of accommodation and belongings, and even suicide.

Some participants thought competitiveness within church fund raising could be negative due to pressures to donate or gamble more than could be afforded or due to the blurring of

boundaries between fund raising and gambling, which could lead to more harmful forms of gambling to try and obtain donation money.

Participants commented on children being neglected due to adult gambling, which was an important theme due to the Pacific significance placed on family and collectiveness. Additionally, participants commented on the lying accompanying problem gambling which could lead to marriage or family relationship break-up.

Current or ex-problem gamblers focused on the ‘addictive’ aspects of gambling such as the fact that problem gambling is an “illness” or the “relationship” that a person can form with an electronic gaming machine.

Other negative impacts related to unacceptable forms of gambling which ‘wasted’ money (e.g. gambling that was not for fund raising purposes). Treatment providers focused on unacceptable gambling being when other people were negatively affected.

Cultural protective factors against harmful gambling

Gambling is not generally available in the Pacific islands, which was considered a protective factor in itself. Additionally, the status and authority of elders over younger people in the islands could be a protective factor as the younger generation has to follow the ruling of elders.

Religion was a protective factor for participants whose churches did not condone gambling.

Within New Zealand, needing to have money to send to family in the islands was a reason for not gambling. Thus, strong family support and communication were also thought to be protective. Not wanting to shame the family name appeared to be a cultural pressure for not gambling for one participant and ties in with strong family traditions and values and acts as a protective factor.

Cultural risk factors for harmful gambling

The large availability of, and opportunities for, gambling in New Zealand (versus the non-availability in the islands) was considered a major risk factor, together with the perception that gambling was an easy way to make money and that people had free time to gamble. The respect traditions were also seen as a risk factor as money to gamble could easily be obtained from family members. Parental role modelling was considered a risk factor by one participant.

The perceived pressure to contribute to church fund raising was considered a risk factor for gambling to try and win the money to participate in the fund raising activities.

Cook Islands participants mentioned a vulnerability being the lower educational level of people from the islands, leading to gambling as a perceived way to make money.

Transitioning from gambling to problem gambling

Some participants considered that gambling to fund raise could lead to more gambling. In line with this, frequent gambling was noted as leading to problem gambling.

Help-seeking behaviours

Participants identified several enablers and barriers to help-seeking for problem gambling. In the main, it was only female community participants who discussed help-seeking.

Enablers

Some participants attempted to assist family members with problematic gambling to stop gambling and/or to seek help. For other participants, venue staff or church leaders were the motivation for a person to seek help. Culturally appropriate service provision was considered to be important, particularly for the older island-born generation.

Advertisements for gambling treatment services in a variety of media and other service provider locations were recalled by many participants. However, the effectiveness of the advertisements was questioned by some youth participants.

Barriers

Whilst an enabler was the help that started in the home, a related barrier was that there were some issues with trying to help family members, particularly younger people in regard to their elders, due to a strong cultural tradition of respect for elders. Shame and stigma around problem gambling also emerged as reasons for not seeking help.

The gambling helpline was the only treatment service recalled by participants apart from current or ex-problem gamblers who were more aware of other services, having utilised them. This lack of knowledge of services is a significant barrier to help-seeking.

There appeared to be some cultural issues for Tongans seeking help around gambling, or seeking help from other Tongans.



6. DISCUSSION

The primary objectives of this project were to: improve understanding of the impact of gambling on the health and wellbeing of Pacific families and communities, inform understanding on risk and resiliency factors in relation to gambling, and improve understanding on the antecedents and aetiology of problem gambling. In order to achieve these objectives, a comprehensive review of the limited relevant literature was completed, secondary analyses were conducted on three significant Pacific data sets (or Pacific subsets of data), and focus groups and interviews were conducted with key Pacific stakeholders. Findings from each area of investigation have been presented, independently, in chapters 3, 4 and 5. This chapter draws together key findings from each area of investigation, discusses their significance in terms of the research objectives and broadly outlines the resulting implications.

The discussion is presented under the key sections of 'Pacific people's gambling and the impacts' (with subsections of 'Migration', 'Gambling versus not gambling', 'Impacts of gambling', and 'Help-seeking behaviours'), 'Implications', and 'Conclusion'.

When discussing secondary analysis findings from the three data sets, they have been referred to as follows: Pacific subset of data from the 'Social impacts of gambling in New Zealand study' (referred to as 'SIGS'), Pacific subset of data from the '2006/07 Gaming and betting activities survey' (referred to as 'GBAS'), and the Pacific Islands Families Study (referred to as 'PIF').

6.1 Pacific people's gambling and the impacts

As detailed in the literature review, Pacific people in New Zealand comprise a heterogeneous mix of ethnicities and the limited prior research indicated some cultural differences in gambling behaviours between, in particular, Samoans and Tongans (being the only ethnicities to have been specifically studied). However, it has been evident from the current study including the secondary analyses of three large data sets and the substantial qualitative aspect of the research, that whilst some ethnic-specific gambling behavioural differences do exist, of equal importance is the influence of religious beliefs and the role the church plays, as well as cultural aspects relating to living in a Westernised country as opposed to living in a Pacific island country.

6.1.1 Migration

As might be expected, gambling availability and accessibility are of key importance in whether Pacific people gamble. If the opportunity to gamble does not exist, then it will not occur. Additionally, if people are too busy with daily activities then they will not have the time to gamble. These themes were reflected in the focus groups and interviews where participants discussed that in the islands there were very few, or no, gambling opportunities whilst in New Zealand gambling was readily available and easily accessible. Participants also discussed that in the islands, people were very busy with their daily living activities whilst in New Zealand they had much more free time, which could lead to gambling to fill time. This corroborates the meagre literature around the impact of migration being a risk factor for gambling due to such factors as "social isolation, disconnectedness, boredom, socio-cultural

ambivalence, financial hardship, under-employment and the need to participate in acceptable recreational activities” (Clarke et al., 2007).

Prior to commencing the current research, the project’s Consultation and Advisory Groups expressed the importance of including New Zealand born and island born young people in the focus groups and interviews due to the perceived impacts of place of birth on gambling behaviours. What became apparent from the focus group analyses was that the place of birth was less significant than place and length of residence, how participants were brought up, or whether they had recently lived in the islands. Instead it was the more materialistic and individualistic way of life in New Zealand that could lead to gambling. Participants’ perceptions were that gambling was an easy way to make money, that money was available to gamble in New Zealand or that money was needed to live, as opposed to the more family and community-oriented lifestyle in the islands where there is more sharing of food and labour, and less need for money to survive.

6.1.2 Gambling versus not gambling

Gambling participation

Some ethnic specific differences in gambling participation behaviour were noted from the secondary data analyses.

Tongans were more likely to be non-gamblers than the other ethnicities. This was noted in the SIGS (59%) and in the PIF study for mothers in the Year 6 analyses (74%). These two studies also indicated that Tongans were the least likely to participate in continuous modes of gambling and the SIGS indicated that they were also more likely to only participate in one mode of gambling than other ethnicities and that they were less likely to know “fairly heavy gamblers” than the other ethnic groups. Whilst the PIF findings for Tongan mothers were not noted three years later and did not attain a level of statistical significance, and thus should be treated with caution, the fact that two studies reported similar findings adds strength to this ethnic variation in gambling behaviour. Also of note is that the PIF study showed that Samoan fathers were the least likely to gamble compared to fathers in the other Pacific ethnicities.

Cook Islands participants were more likely to participate in non-casino electronic gaming machine gambling compared with the other ethnicities (GBAS) although this could be an artefact of the higher percentage of female respondents in the sample. However, Cook Islands fathers were the most likely to gamble per se compared with fathers in the other Pacific ethnicities (PIF).

These findings indicate important heterogeneity in the gambling participation of the major Pacific ethnicities which hitherto had been unidentified and which had been hidden by the overall lower participation in gambling (compared with non-Pacific ethnicities) documented in existing literature from previous studies. It could also partly explain the bimodal distribution of gambling amongst Pacific people with large skews towards those who do not gamble versus those who do gamble.

Not unsurprisingly, of those who gambled, lottery products were the most popular form of gambling followed by non-casino and casino electronic gaming machines at a substantially lower level, with frequency of gambling depending on mode of gambling (SIGS, GBAS). The more frequently people participated in gambling forms, particularly continuous modes of gambling, the more modes of gambling in which they appeared likely to be involved (SIGS).

No major differences between the Pacific ethnicities were apparent in the mode or frequency of gambling.

Defining gambling

The term 'gambling' appears to be a Western concept and is viewed quite differently by Pacific people. This was a strong repetitive theme throughout the focus groups and interviews and tied in with the lack of gambling availability in the Pacific island countries as well as with deep-rooted cultural, religious and church influenced views. The focus group and interview community participants generally thought that Lotto, Instant Kiwi and raffles were not gambling and in fact any 'gambling' that was for the benefit of community or family (e.g. for fund raising purposes) was not gambling because it was 'fund raising'. Another Pacific view of gambling was that it was 'an exchange of gifts'. This corroborates previous literature relating to gambling fund raising being 'donating' or 'giving' to fulfil social obligations. These views will be discussed in more detail later in this section. However, it is pertinent to raise them now as the way gambling is defined by Pacific people undoubtedly influences their gambling behaviours and thus the subsequent impacts of those behaviours. It will also impact on any help-seeking behaviours and thus have public health and policy implications.

Cultural obligations

Previous research has indicated that gambling is associated with cultural obligations amongst Samoan and Tongan communities, such as for fa'alavelave and other 'gift-giving' obligations (e.g. Anae et al., 2008; Bellringer et al., 2006; Cowley et al., 2004; Guttenbeil-Po'uhila et al., 2004; Perese & Faleafa, 2000; Tse et al., 2005, 2012). This was echoed by the quotation from one Cook Islands focus group participant "*I wouldn't accept that as gambling. I think it's an exchange of gifts*".

The cultural requirement to raise money for community or family events, whether in New Zealand or to send to family living in the Pacific island home country appears to be a strong tradition stemming from the idea of 'shared wealth' which allows Pacific groups as a collective to fund items or events that would otherwise be unattainable for communities or families. Often the money is raised through gambling events such as housie games or raffles. This was viewed by some focus group participants as a positive aspect of gambling although there was acknowledgement that the need to raise money or contribute to fund raising could be a risk factor for harmful gambling as people try to win the money they are expected to contribute. Cook Islands participants appeared to have the most pressures to provide money for family and thus more pressures to turn to gambling in the hope of winning the money. However, for some focus group and interview participants, cultural obligations were a protective factor against harmful gambling, that is they did not gamble because they needed their money to send to family in the home islands.

Previous literature has indicated that there are increasing differences between New Zealand born and overseas born with sending overseas remittances (i.e. funding family in the home island) more common for migrant Pacific people rather than those born in New Zealand (Fitzgerald, 1988; Macpherson, 1994). Whilst this theme was not identified amongst focus group and interview participants, some participants mentioned that in New Zealand there appeared to be a shift towards Western culture with less emphasis placed on respect traditions.

Religious and church obligations

Focus group and interview participants strongly endorsed the influence of specific church and religious viewpoints regarding gambling or not gambling, and any associated obligations. Church leader participants echoed community participant views that gambling acceptability

or non-acceptability was a church viewpoint and not a Pacific perspective per se, with some church leaders endorsing gambling (for church fund raising purposes) whilst others did not. Given that religion appears to be important to many Pacific people, whether a family's church or religion endorsed or prohibited gambling appeared to be a key factor in whether gambling participation occurred.

As with cultural obligations, some participants voiced that the obligations to the church could lead to gambling to try to win the money (i.e. there was church pressure to contribute which was a negative impact). Other participants felt that the boundaries between gambling and fund raising became blurred, and that this could lead to transitioning from fund raising to more frequent gambling and so forth to problematic gambling. In other words, gambling for fund raising purposes could be a catalyst to gamble on forms other than housie and bingo which could start the transition process into harmful gambling. In part, and for some participants, the strong church and religious obligations to gamble may be a reason why Pacific people were less likely to resolve their gambling problems (i.e. more likely to have persistent problems) over time as discussed by Abbott (2001) based on re-interview findings seven years after the first national prevalence survey.

Conversely, for participants whose churches did not condone gambling, this was a protective factor against gambling.

Focus group and interview participants were not asked which churches they attended or indeed whether they had any religious affiliation. However, this aspect was investigated as part of the PIF study analyses where it was found that mothers who never attended church had greater odds for gambling on continuous modes than participants who attended only Pasifika churches "a lot". A similar finding was noted for fathers where those who never attended church as well as those who attended non-Pasifika churches had greater odds for past-year gambling as well as gambling on continuous modes than fathers who attended only Pasifika churches "a lot". These findings may indicate a protective aspect of Pasifika churches, which presumably are those which are more likely to either endorse gambling only when it is for church fund raising purposes or not endorse gambling at all.

Divinity appeared to be important amongst Tongan participants in relation to gambling because "God wills it" was considered not to be gambling. This finding supported previous research identifying that some Tongans gamble based on a belief that a win is a divine blessing (Guttenbeil-Po'uhila et al., 2004). This divine perception could also partially explain why over three-quarters (78%) of Tongan youth thought that 'to win money' was an attractive factor for gambling compared with half (53%) of Samoan youth in the GBAS.

Other motivations to gamble

Whilst gambling to raise funds for cultural or church obligations appeared to be a large motivator to gamble (or in some cases, to not gamble) there are numerous other reasons why Pacific people gamble which are more general in nature.

Focus group and interview participants discussed how gambling was, for some, a way to escape from family problems or issues. Gambling to escape had been previously identified amongst Samoans (Perese, 2009; Tse et al., 2012). It was also a way to deal with stress.

For other focus group and interview participants, gambling was a social event, something to do with other family members or friends; it was a way to be socially connected. Similarly, nine year old children who were more social (e.g. spent more time with friends, had paid work, or after-school activities) had greater odds for gambling than children who never had those activities (PIF). Interestingly, although PIF study analyses indicated that the mothers

and fathers generally preferred to gamble alone, an ethnic difference was that Tongan mothers were more likely to gamble with family members and less likely to gamble with spouse/partner than the other ethnicities (however, a level of statistical significance was not attained). This may be related to the cultural acceptance for Tongan women to gamble in non-church environments if they go in groups (Guttenbeil-Po'uhila et al., 2004). Not wanting to shame the family name was important to one participant, tying in with strong family traditions and values and could potentially help prevent excessive gambling.

A perception voiced by numerous focus group and interview participants was that gambling was an easy way to make money and this ties in with the aforementioned discourse that fund raising obligations could lead to gambling due to the latter being considered an easy way to make money through winning. Cook Islands participants voiced that this perception was a vulnerability due to the lower educational level of people from the islands. However, the theory regarding lower educational level was not supported by quantitative analyses of the PIF data whereby a greater percentage of Samoan and Tongan fathers reported no formal educational qualifications than other Pacific ethnicities and yet Samoan fathers were also the least likely to gamble. Winning money at gambling was endorsed by over half the youth in the GBAS with Tongan youth more likely to endorse this as an attractive factor than Samoan youth. Conversely, only 40% of youth endorsed 'losing money/see others lose money' as an unattractive factor of gambling, which may again tie in with the perception that gambling is a relatively easy way to make money.

Personality and behavioural factors were also associated with gambling. Mothers who had low self-esteem had greater odds for gambling on continuous modes than mothers who did not have low self-esteem (PIF). Nine-year old children who 'externalised' outside the normal range or who were more hyperactive had greater odds for being a gambler than children who were within the normal ranges for these domains (PIF).

Health factors were noted to be associated with gambling. Fathers who rated their health as poor or fair had greater odds for gambling on continuous forms than fathers who rated their health as good (PIF).

Longitudinal findings

The PIF study included a longitudinal element focused on changes over time from earlier to later interview time points. These analyses indicated some potential predictors for future gambling or not gambling.

Previous research identified conflicting views regarding the association between gambling and marital status with some studies showing that being married is associated with a higher problem gambling risk (Bondolfi et al., 2000) and others indicating that single people are at greater risk (Volberg et al., 2001). In the PIF study analyses, change in marital status was a predictor for mothers giving up gambling, whether the change was from single to partnered or vice versa and thus it may be the change that is more important than marital status per se in determining risk levels for problem gambling.

Numerous studies have reported excessive alcohol consumption is associated with problem gambling, including some New Zealand studies (Bellringer et al., 2008; Ministry of Health, 2009). Thus, it is no surprise that the PIF analyses revealed that taking up drinking alcohol was a predictive factor for starting gambling in mothers and fathers (and maintaining gambling in mothers) and also led to increased gambling expenditure (for those who already gambled) by at least five dollars per week. Interestingly, for mothers, giving up drinking alcohol was also a predictive factor for starting gambling whilst for fathers the converse was true with giving up drinking alcohol being predictive of also giving up gambling.

Additionally, fathers who gambled and gave up drinking alcohol reduced their mean weekly gambling expenditure by about seven dollars. This latter finding may be an indication of gender differences in reasons for gambling and is worthy of further investigation.

As with alcohol consumption, several studies have reported a direct association between current tobacco smoking and problem gambling. In the PIF analyses, taking up smoking was predictive of starting gambling for mothers compared with mothers who did not take up smoking, and for mothers who already gambled, taking up smoking led to increased mean weekly gambling expenditure by just under four dollars. This finding was not noted for fathers and is another indication of gender differences in relation to gambling.

In the PIF study, mothers who lost employment reduced their mean weekly gambling expenditure by just less than five dollars. This could reflect cutting back on gambling due to reduced disposable income, though it is interesting to note that a similar finding was not apparent for fathers. It may also reflect previous literature which has indicated that income level does not appear to be a good measure for predicting gambling/problem gambling risk level.

Becoming depressed was a predictive factor amongst fathers for starting gambling, and for those who already gambled, for increasing their mean weekly expenditure by over six dollars. Again the lack of this finding amongst mothers indicates gender differences.

6.1.3 Impacts of gambling

Positive impacts

Many of the positive impacts of gambling have already been discussed in section 6.1.2, for example in terms of fund raising for church or cultural obligations, allowing for 'shared wealth' across the local community, and as a means of socialisation and having fun.

Whilst most participants in the SIGS reported no impact of their, or someone else's gambling, on themselves, of those who did report an impact some ethnic differences were noted.

Tongan (and Other Pacific) participants were more likely to report positive impacts of another person's gambling on their mental wellbeing; Tongan participants were also more likely to report positive impacts on relationships, compared with the other ethnicities. These findings did not achieve a level of statistical significance and may be of little importance; however, they may be related to the aforementioned findings that Tongans are more likely to gamble with other people than other ethnicities and also the belief that gambling wins are a divine intervention. Tongan participants were also least likely to report any impact of another person's gambling on their own relationships with family/friends or their overall satisfaction with life. This may be related to the finding that Tongans were more likely to be non-gamblers than the other ethnicities.

Negative impacts

As with positive impacts, many negative impacts of gambling have previously been discussed in section 6.1.2, for example the competitiveness within church fund raising and the blurred boundaries between fund raising and gambling.

As previously mentioned, most participants in the SIGS reported no impact of their, or someone else's gambling, on themselves. Of those who reported impacts, generally more negative impacts were reported than positive and overall the negative impacts of someone else's gambling were greater than the impacts of own gambling on the various life domains.

Similarly, more negative impacts than positive were raised in the focus group and interview discussions.

Almost three-quarters of the respondents who gambled reported losing money on gambling although only 15% reported negative financial impacts due to own gambling (and 13% reported winning money overall, on gambling). One-fifth (21%) of respondents reported negative financial impacts from someone else's gambling, along with negative feelings about self (20%) and negative impacts on life satisfaction (18%). Similarly, 32% of respondents in the GBAS identified 'financial problems' as the top sign of harmful gambling with 37% identifying 'unable to pay for household bills/food/rent' as the top impact of harmful gambling.

Although the SIGS data indicated that only a minority of participants, albeit a substantial minority, reported financial negative impacts of gambling, the focus group and interview participants discussed the extreme nature of subsequent impacts caused by the financial deficit. In particular, relationship breakdown, loss of accommodation and belongings, child neglect, and even suicide were discussed.

Differences from the other Pacific ethnicities were noted for Tongan and Niuean participants. Tongan participants were more likely to report negative impacts of another person's gambling on their own feelings about self, than other ethnicities. Again, as this finding did not reach a level of statistical significance, it may be of little importance; however, it may be related to the finding that less Tongans gamble and thus when some do gamble, this is less of a normalised behaviour than for the other ethnicities. Niuean participants were slightly more likely to report negative impacts of their own gambling on their study or work-related training performance than the other ethnicities. This finding also did not reach a level of statistical significance and may be of little importance; however, it may be related to that particular sample which was predominantly female (61%) with nearly two-fifths (37%) educated to university or professional level, and who were more likely, therefore, to be in paid employment or further study. On the whole, Niuean participants were less likely to report negative impacts on other life domains compared with the other Pacific ethnicities.

Gambling participation differences were also noted on impacts of gambling. Lotto/keno gamblers only, were less likely to report negative impacts on the various life domains than other gamblers whilst frequent gamblers on continuous modes were more likely to report negative impacts, particularly on financial situation and overall quality of life. These findings are not unexpected.

6.1.4 Help-seeking behaviours

In the main, it was only female community participants in the focus groups and interviews who discussed help-seeking for problem gambling, perhaps reflecting the fact that females are more comfortable seeking-help for problems than males.

There was limited awareness of gambling help services amongst community participants, apart from amongst the current or ex-problem gamblers who had a greater awareness of availability of services through use. The gambling helpline was the only treatment service recalled by focus group and interview participants, possibly because of advertisements in a variety of media. Many participants recalled at least some of the advertising although the effectiveness was queried by youth participants who felt they targeted 'older' people (i.e. they were not aimed at youth). These qualitative findings were similar to findings from the nationally representative GBAS study; only 56% of Pacific respondents were able to name a

treatment service with 49% of those respondents recalling the gambling helpline. An ethnic difference noted was that Cook Islands participants were less likely to report knowing of the helpline than the other ethnicities (GBAS).

The limited awareness of where to seek help for gambling problems had been previously noted amongst Samoan and Tongan communities (Guttenbeil-Po'uuhila et al., 2004; Perese & Faleafa, 2000) and is likely to be one reason why Pacific people are under-represented at problem gambling treatment services. Of course, there are likely to be numerous other reasons too, for example shame, raised by one focus group participant and echoed by treatment provider participants. There also appeared to be some cultural issues raised by Tongan participants in relation to seeking help for problematic gambling, or to seeking help from other Tongans. The limited awareness of gambling help services and some cultural reluctance to seek help confirms Abbott's (2001) speculation that this is a reason why Pacific people appeared to have more persistent gambling problems than other participants when re-interviewed seven years after the first national prevalence survey.

Whilst not strictly help-seeking behaviour, some Pacific gamblers have used strategies to attempt to avoid excessive gambling. This is an earlier stage in the recognition of a potential problem. Over one-quarter (27%) of respondents reported that they or a member of their household had used strategies with 68% indicating 'avoiding places with betting/gambling as an attraction' (GBAS). Differences between the Pacific ethnicities were noted. Cook Islands and Niuean participants were more likely to report a different strategy of either 'separating the money for betting and stop gambling when it was used' (Cook Islands) or 'setting a dollar figure for gambling before leaving home' (Niuean) than the other Pacific ethnicities (GBAS).

For some focus group participants help started informally within the family, or via gambling venue staff intervention. Church leaders conflicted on whether it was their role to guide or intervene around gambling issues, perhaps reflecting their religious stance on whether gambling was acceptable or not. Treatment provider participants raised a valuable point regarding the importance of a culturally appropriate and respectful environment being critical to assist Pacific people with gambling issues, particularly for those who held strong island beliefs and traditions.

6.2 Implications

The findings from this study, both from the quantitative secondary analyses of existing data sets and the qualitative focus groups and interviews have identified aspects of Pacific culture that affect gambling behaviours and the impacts of those behaviours.

Religion and the church appear to be of paramount importance in whether Pacific people gamble, based on whether the church denomination endorses gambling (of any type) or not, or whether it endorses gambling only for fund raising purposes. Gambling to fund raise forms part of the Pacific cultural collective notion of 'shared wealth' (the collective pooling or redistributing of resources) to assist in family or community based activities that could not be afforded individually, or to support family in the home islands. However, church leaders were divided on their role in guiding or intervening around gambling issues. Given the above it would seem that action in the following areas could increase resilience amongst Pacific people in relation to gambling harms:

- Raise awareness amongst church leaders regarding the substantial impact their views can have regarding whether members of their congregation gamble

- Raise awareness amongst church leaders regarding the potential for fund raising gambling to lead to other modes of gambling in an attempt to gain money to fulfil obligations, and that this can lead to harmful gambling
- Raise awareness amongst church leaders of the free services which are available to assist problem gamblers and those affected by someone else's gambling, including the Pacific-specific services so that they know where members of their congregation can access help
- Raise awareness amongst church leaders as to how to identify common signs of harmful gambling allowing for early intervention
- Raise awareness of alternative fund raising activities so that the dependence on gambling for fund raising can be reduced or eliminated.

Another finding of the current study was the cultural difference in defining gambling, dependent on whether a Pacific or Palagi (Western) viewpoint was taken. Broadly speaking, this sits within the remit of other migration issues that can lead to Pacific people gambling in New Zealand. Although two-fifths of overseas born Pacific people are long-term migrants having been in New Zealand for more than 20 years (Statistics New Zealand, 2006), addressing some of these migration issues could help to increase resilience and protect against harmful gambling and could fall under the responsibility of gambling venues as well as public health approaches:

- Provide greater support for migrant families in terms of explaining the Western way of life and alternative options for spending free time and socialising with family or friends other than gambling
- Dispel the myth that gambling is an easy way to make money by emphasising the odds of losing and suggesting alternative ideas for raising money for cultural obligations
- Make easily available and accessible, information around general signs of problem gambling and strategies that can be implemented to minimise the harms from gambling, focusing on the Pacific collective perspective (rather than an individualistic Western approach).

Financial problems were identified as a considerable negative impact of problem gambling. These problems were sometimes masked by other family members 'helping' a problem gambler's family by feeding them. Again, resilience could be increased if communities understood that this type of 'helping', whilst ensuring that families were fed, actually enables problem gamblers to continue in their destructive behaviour by removing responsibility from them. This could be achieved through:

- More targeted social marketing campaigns and community awareness campaigns around the potential destructiveness of problem gambling to whole families and communities
- More awareness-raising around available local problem gambling treatment services including Pacific-specific services
- More awareness-raising initiatives aimed at significant others of problem gamblers, equipping them with the tools to identify signs of harmful gambling as well as information regarding how they can access help or minimise their enabling of a gambler's negative behaviours.

Changes in life circumstances, such as marital status as well as co-existing behaviours including drinking alcohol, tobacco smoking and other mental health behaviours were shown in the current study to impact on gambling behaviour and expenditure. This suggests that services primarily dealing with people negatively affected by life changes should be aware of the potential impacts on gambling behaviours and be equipped to at least raise the subject of gambling with their clients, as well as the knowledge of available problem gambling services.

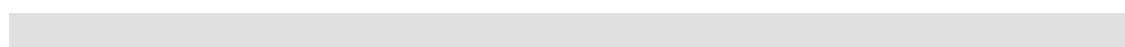
Finally, some ethnic and gender differences in relation to gambling behaviours and impacts were evident from the current study. In particular, the study highlighted differences amongst Cook Islands participants compared with Samoan and Tongan participants; hitherto un-researched territory. Whilst these findings merit further research and attention, they highlight the importance of not treating the New Zealand Pacific population as a homogeneous group; ethnically and/or gender tailored approaches would be prudent and are likely to have greater success than Pan-Pacific approaches.

6.3 Conclusion

The primary objectives of this project were to: improve understanding of the impact of gambling on the health and wellbeing of Pacific families and communities, inform understanding on risk and resiliency factors in relation to gambling, and improve understanding on the antecedents and aetiology of problem gambling.

As detailed in the literature review, very little empirical research around Pacific people and their gambling behaviours had previously been conducted and there were numerous gaps in knowledge identified. In particular, given the high risk of Pacific people for developing problem gambling and under-representation at treatment services, an in-depth understanding of gambling in a New Zealand Pacific context was crucial.

The two pronged approach of the current project comprising quantitative secondary analyses of large existing data sets combined with qualitative focus groups and interviews has significantly increased our understanding of Pacific gambling behaviours and impacts. Whilst not all the identified gaps in knowledge have been addressed and additional gaps have presented themselves, the current project has advanced understanding and knowledge around why Pacific people do, or do not gamble and why some are potentially at high risk for developing problem gambling. Other knowledge gaps which have been identified, at least to some extent, and which add to the current evidence-base have included: impacts of gambling (positive and negative), Pacific people's attitudes towards gambling, socio-economic and environmental factors associated with gambling participation, the relationship between gambling and migration/cultural differences with living in New Zealand versus living in a Pacific island, some risk and protective factors for/against developing problem gambling, and some insight into the help-seeking behaviours of Pacific people.



7. LIMITATIONS OF THIS STUDY

7.1 Secondary analyses of data sets

Secondary analyses of the three data sets has produced a large number of association tables, some of which are based on very small sample sizes. Even when large samples are used, the risk of seeing false positives (“Type I” errors) increases with the number of association tests that are conducted. Therefore, the reader is advised to treat with caution any result that stands out as counter-intuitive or contradictory to other results or research. The large number of analyses has been provided because of their contribution to a wider, more holistic view of gambling behaviours within the Pacific population of New Zealand.

The analyses included in the original reports on the *Social impacts of gambling in New Zealand* and *Gaming and betting activities survey* data sets made use of sample weighting factors to adjust for differences between the sample and the target population. Such weighting factors have not been used in the secondary analyses. A primary focus of the secondary analyses was to explore differences among the Pacific ethnicities, where the weighting factors made no distinction.

Data from all three data sets was based on self-report of members of the public. The usual limitations inherent in survey sampling, such as the reliability of people’s recall, should be noted.

The following limitations to the Pacific Islands Families study longitudinal analysis methods should be noted:

- The three outcome variables are clearly related and were analysed using the same data set. Consequently, the results cannot be considered to be independent verification (where they agree) or contradictory (where they differ) and they need to be viewed collectively with this in mind.
- The analysis is necessarily based on the people who were actually interviewed more than once. Some attrition¹⁸ of participants is inevitable in such a longitudinal study, so the analysis has left out a proportion of the original cohort. In using the results to draw conclusions about a wider population of Pacific parents, one needs to make the assumption that those people interviewed are indeed representative of the wider population. There may be some valid reasons for being suspicious of this assumption. Nevertheless, the authors have considered this limitation and still view the findings as useful and sufficiently reliable.
- The recorded changes over time in usual expenditure figures may be partially explained by the variation in the wording of the questions. In particular, in some years ‘weekly’ was used whereas ‘monthly’ was used in other years. The accuracy of the recorded data relies on the interviewee recalling/estimating the amount in that time period. Also, at some earlier years, a single question was asked relating to all gambling activities, while at later years (especially for collaterals [fathers]) the interviewee was asked about usual expenditure on each of a number of different modes of gambling. To allow for these differences, the analysis of usual expenditure

¹⁸ Numbers of mothers interviewed at each time point: six weeks (N=1,376), Year 1 (N=1,224), Year 2 (N=1,144), Year 4 (N=1,048), Year 6 (N=1,001), Year 9 (N=996).

Numbers of fathers interviewed at each time point: Year 1 (N=825), Year 2 (N=757), Year 6 (N=591).

has considered primary (mothers) and collateral (fathers) participants separately and has included the measurement wave as a categorical covariate.

7.2 Focus groups and individual interviews

The geographical location of the researchers was Auckland which led to participant inclusion in the focus groups and individual interviews being limited to the Auckland area, specifically South and Central Auckland. However, since the largest Pacific population (67%) resides in the Auckland area (Statistics New Zealand, 2006) this was considered not to have impacted on the representativeness of the participants. Additionally, although participants self-selected to take part in the focus groups and interviews in response to various recruitment methods, as the type of community participants was broad (e.g. based on ethnicity, birth origin, gambler or non-gambler, and age) to cover as wide a population as possible, the researchers consider the participants to be generally representative of the Pacific population groups of interest (i.e. Samoan, Tongan and Cook Islands).

Focus group and interview data were coded prior to analysis. This involved subjective judgement by the researchers. However, the judgement bias was minimised as two members of the research team were involved in the coding process including a Pacific researcher.



8. REFERENCES

- Abbott, M.W. (2001). *What do we know about gambling and problem gambling in New Zealand? Report Number Seven of the New Zealand Gaming Survey*. Wellington: Department of Internal Affairs.
- Abbott, M.W. (2007). Situational factors that affect gambling behaviour. In G. Smith, D.C. Hodgins, & R.J. Williams (EDS.) *Research and measurement issues in gambling studies*. Burlington, MA, Academic Press, Elsevier Inc.
- Abbott, M.W., & Volberg, R.A. (2000). *Taking the pulse on gambling and problem gambling in New Zealand: A report on Phase One of the 1999 National Prevalence Survey. Report Number Three of the New Zealand Gaming Survey*. Wellington: Department of Internal Affairs.
- Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA preschool forms and profiles*. Burlington, VT: University of Vermont Department of Psychiatry.
- Afifi, T.O., Cox, B.J., Martens, P.J., Sareen, J., & Enns, M.W. (2010). Demographic and social variables associated with problem gambling among men and women in Canada. *Psychiatry Research*, 178(2), 395-400.
- Anae, M., Coxon, E., Lima, I., Atiga, L., & Tolley, H. (2008). *Pacific consumers' behaviour and experience in credit markets, with particular reference to the 'fringe lending' market*. Auckland: University of Auckland, Auckland Uniservices Ltd.
- Auckland District Health Board. (2001). *Auckland DHB: Domicile population and statistics*. Retrieved 4 November 2011: http://www.adhb.govt.nz/about/population_stats.htm.
- Bellringer, M., Abbott, M., Williams, M., & Gao, W. (2008). *Problem gambling - Pacific Islands Families longitudinal study. Final Report for the Ministry of Health*. Auckland: Gambling and Addictions Research Centre, Auckland University of Technology.
- Bellringer, M.E., Perese, L.M., Abbott, M.W., & Williams, M.M. (2006). Gambling among Pacific mothers living in New Zealand. *International Gambling Studies*, 6(2), 217-235.
- Bellringer, M., Taylor, S., Poon, Z., Abbott, M., & Paterson, J. (2012). *Pacific Islands Families Study 2009: Mother and child gambling. Final Report for the Ministry of Health*. Auckland: Gambling and Addictions Research Centre, Auckland University of Technology.
- Bondolfi, G., Osiek, C., & Ferrero, F. (2000). Prevalence estimates of pathological gambling in Switzerland. *Acta Psychiatrica Scandinavica*, 101(6), 473-475.
- Callister, P. (2004). Ethnicity measures, intermarriage and social policy. *Social Policy Journal of New Zealand*, 23, 109+.
- Centre for Social and Health Outcomes Research and Evaluation & Te Ropu Whariki. (2008). *Assessment of the social impacts of gambling in New Zealand. Report to the Ministry of Health*. Auckland: Massey University.

Clarke, D., Abbott, M., DeSouza, R., & Bellringer, M. (2007). An overview of help-seeking by problem gamblers and their families including barriers to and relevance of services. *International Journal of Mental Health and Addiction*, 5(4), 292-306.

Cowley, E.T., Paterson, J. & Williams, M. 2004. Traditional gift giving among Pacific families in New Zealand. *Journal of Family and Economic Issues*, 25(3), 431-444.

Czerny, E., Koenig, S., & Turner, N.E. (2008). Exploring the mind of the gambler: Psychological aspects of gambling and problem gambling. In M. Zangeneh, A. Blaszczyński, & N.R. Turner (Eds.) *In the pursuit of winning: problem gambling theory, research and treatment*. New York, Springer Science + Business Media.

Ferris, J., & Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*. Ottawa: Canadian Centre on Substance Abuse.

Fong, T., Campos, M., Brecht, M.-L., Davis, A., Marco, A., Pecanha, V., & Rosenthal, R. (2011). Problem and pathological gambling in a sample of casino patrons. *Journal of Gambling Studies*, 27(1), 35-47.

French, M.T., Maclean, J.C., & Etnner, S.L. (2008). Drinkers and bettors: Investigating the complementarity of alcohol consumption and problem gambling. *Drug and alcohol dependence*, 96(1-2), 155-164.

Goldberg, D.P., & Williams, P. (1988). *A user's guide to the General Health Questionnaire*. Windsor, UK: NFER-Nelson.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38(5), 581-586.

Goodyear-Smith, F., Arroll, B., Kerse, N., Sullivan, S., Coupe, N., Tse, S., Shepherd, R., Rossen, F., & Perese, L. (2006). Primary care patients reporting concerns about their gambling frequently have other co-occurring lifestyle and mental health issues. *BMC Family Practice*, 7:25. Retrieved 8 October 2012 from <http://www.biomedcentral.com/1471-2296/7/25>.

Grant, J.E., & Kim, S.W. (2004). Gender Differences. In J.E. Grant & M.N. Potenza (Eds.), *Pathological gambling: A clinical guide to treatment* (pp. 97-109). Washington, DC: American Psychiatric Publishing, Inc.

Gray, R. (2011). *New Zealander's participation in gambling: Results from the 2010 Health and Lifestyles Survey*. Wellington: Health Sponsorship Council.

Griffiths, M., Wardle, H., Orford, J., Sproston, K., & Erens, B. (2010). Gambling, alcohol, consumption, cigarette smoking and health: Findings from the 2007 British Gambling Prevalence Survey. *Addiction Research & Theory*, 18(2), 208-223.

Guttenbeil-Po'uhila, Y., Hand, J., Htay, T. and Tu'itahi, S. 2004. *Gambling issues in the Auckland Tongan community: Palopalema 'o e va'inga pa'anga 'i he kainga Tonga 'i' Aokalani*. Auckland: Auckland Regional Public Health Service, Auckland District Health Board.

Health Research Council of New Zealand. (2003). *Guidelines on Pacific Health Research*. Auckland: Health Research Council of New Zealand.

Ibáñez, A., Blanco, C., Moreryra, P., & Sáiz-Ruiz, J. (2003). Gender differences in pathological gambling. *Journal of Clinical Psychiatry*, 64(3), 295-301.

Jensen, J. (1988). *Income equivalences and the estimation of family expenditure on children*. Wellington: Department of Social Welfare.

Ka'ili, T.O. (2005). Tauhi va: Nurturing Tongan sociospatial ties in Maui and beyond. *The Contemporary Pacific*, 17(1), 83-114.

Keddell, E. (2006). Pavlova and pineapple pie: Selected identity influences on Samoan-Pakeha people in Aotearoa/New Zealand. *Kotuitui: New Zealand Journal of Social Sciences* 1(1), 45 – 63.

Meleisea, M., Schoeffel-Meleisea, P., Pesteta-Sio, G., Va'ai, I., Suafole, L., Tavale, T. et al. 1987. *Lagaga: A Short History of Samoa*. Institute of Pacific Studies and the Western Samoa Extension Centre, University of the South Pacific, Fiji.

Ministry of Health. (2006). *Problem gambling in New Zealand: Analysis of the 2002/03 New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. (2008). *A portrait of health. Key results of the 2006/07 New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. (2009). *A focus on problem gambling: Results of the 2006/07 New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. (2011). *Problem gambling in New Zealand: Service user data*. Retrieved 10 November 2011: <http://www.moh.govt.nz/moh.nsf/indexmh/problemgambling-userdata>.

National Research Bureau Ltd. (2007). *Gaming and betting activities survey: New Zealanders' knowledge, views and experiences of gambling and gambling-related harm. Report to the Health Sponsorship Council*. Auckland: National Research Bureau.

New Zealand Constitution. (2012). Retrieved 5 October 2012: <http://www.beehive.govt.nz/Documents/Files/NZ%20Constitution%20Cabinet%20Office%20backgrounder.pdf>.

Novitz, D. (1989). On culture and cultural identity. In: D. Novitz, & B. Willmott (Eds.) *Culture and identity*. Wellington: GP Books.

Pasikale, A., & George, T. (1995). *For the family first: A study of income allocation within Pacific Islands families in New Zealand*. Wellington: Destini Incorporated.

Pearce, J., Mason, K., Hiscock, R., & Day, P. (2008). A national study of neighbourhood access to gambling opportunities and individual gambling behaviour. *Journal of Epidemiology and Community Health*, 62(10), 862-867.

Perese, L. (2009). *You bet your life... and mine! Contemporary Samoan gambling in New Zealand*. Unpublished PhD thesis. Auckland: The University of Auckland.

Perese, L., Bellringer, M., Williams, M., & Abbott, M. (2009). Two years on: Gambling amongst Pacific mothers living in New Zealand. *Pacific Health Dialog: Journal of Community Health and Clinical Medicine for the Pacific*, 15(1), 55-67.

Perese, L., & Faleafa, M. 2000. *The impact of gambling on some Samoan people's lives in Auckland*. The Problem Gambling Foundation of New Zealand, Auckland.

Perese, L., Gao, W., Erick, S., Macpherson, C., Cowley-Malcolm, E., & Sundborn, G. (2011). Traditional gift-giving and gambling amongst Pacific mothers living in New Zealand. *Pacific Health Dialog*, 17(2), 79-88.

Potenza, M.N., Steinberg, M.A., McLaughlin, S.D., Wu, R., Rounsaville, B.J., & O'Malley, S.S. (2001). Gender-related differences in the characteristics of problem gamblers using a gambling helpline. *American Journal of Psychiatry*, 158(9), 1500-1505.

Raylu, N., & Oei, T.P. (2004). Role of culture in gambling and problem gambling. *Clinical Psychology Review*, 23(8), 1087-1114.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, N.J.: Princeton University Press.

Rossen, F.V., Butler, R., & Denny, S. (2011). *An exploration of youth participation in gambling and the impact of problem gambling on young people in New Zealand*. Centre for Gambling Studies, prepared for the Ministry of Health. Auckland UniServices Limited, The University of Auckland.

Salmond, C., & Crampton, P. (2001). *NZDep Index of Deprivation*. Wellington: Department of Public Health, Wellington School of Medicine and Health Sciences.

Salmond, C., Crampton, P., King, P., & Waldegrave, C. (2005). NZiDep: An index of relative socioeconomic deprivation for individuals. Wellington: Wellington School of Medicine and Health Sciences, Otago University.

Shinogle, J., Norris, D.F., Park, D.H., Volberg, R., Haynes, D., & Stokan, E. (2011). *Gambling prevalence in Maryland: A baseline analysis*. Baltimore, BC: Maryland Institute for Policy Analysis and Research, University of Maryland.

Statistics New Zealand. (2006). *2006 census data*. Retrieved 4 November 2011: <http://www.stats.govt.nz/Census/2006CensusHomePage/QuickStats/quickstats-about-a-subject/pacific-peoples.aspx>

Statistics New Zealand. (2007a). *Samoan people in New Zealand: 2006*. Wellington: Statistics New Zealand.

Statistics New Zealand. (2007b). *Niuean people in New Zealand: 2006*. Wellington: Statistics New Zealand.

Tavares, H., Martins, S.S., Lobo, D.S.S., Silveira, C.M., Gentil, V., & Hodgins, D.C. (2003). Factors at play in faster progression for female pathological gamblers: An exploratory analysis. *Journal of Clinical Psychiatry*, 64(4), 433-438.

Tavares, H., Zilberman, M.L., Beites, F.J., & Gentil, V. (2001). Brief communications: Gender differences in gambling progression. *Journal of Gambling Studies*, 17(2), 151-159.

Toneatto, T., & Nguyen, L. (2007). Individual characteristics and problem gambling behaviour. In G. Smith, D.C. Hodgins, & R.J. Williams (EDS.) *Research and measurement issues in gambling studies*. Burlington, MA: Academic Press, Elsevier Inc.

Tse, S., Abbott, M., Clarke, D., Townsend, S., Kingi, P., & Manaia, W. (2005). *Examining the determinants of problem gambling. Final report for Health Research Council of New Zealand*. Auckland: Auckland UniServices Ltd, University of Auckland.

Tse, S., Dyal, L., Clarke, D., Abbott, M., Townsend, S., & Kingi, P. (2012). Why people gamble: A qualitative study of four New Zealand ethnic groups. *International Journal of Mental Health and Addiction, Online First Articles*.

Volberg, R.A., Abbott, M.W., Rönnerberg, S., & Munck, I.M.E. (2001). Prevalence and risks of pathological gambling in Sweden. *Acta Psychiatrica Scandinavica, 104*(4), 250-256.

Welte, J.W., Wieczorek, W.F., Barnes, G.M., Tidwell, M.C., & Hoffman, J.H. (2004). The relationship of ecological and geographic factors to gambling behavior and pathology. *Journal of Gambling Studies, 20*(4), 405-423.

Welte, J.W., Wieczorek, W.F., Barnes, G.M., & Tidwell, M.C.O. (2006). Multiple risk factors for frequent and problem gambling: Individual, social, and ecological. *Journal of Applied Social Psychology, 36*(6), 1548-1568.

Wheeler, B.W., Rigby, J.E., & Huriwai, T. (2006). Pokies and poverty: Problem gambling risk factor geography in New Zealand. *Health & Place, 12*(1), 86-96.

Zangeneh, M., Grunfeld, A., & Koenig, S. (2008). Individual factors in the development and maintenance of problem gambling. In M. Zangeneh, A. Blaszczynski, & N.R. Turner (Eds.) *In the pursuit of winning: problem gambling theory, research and treatment*. New York, Springer Science & Business Media.

APPENDIX 1
Ethical approval - Phase Two

MEMORANDUM

Auckland University of Technology Ethics Committee (AUTEC)

To: Maria Bellringer
From: **Dr Rosemary Godbold** Executive Secretary, AUTEC
Date: 5 October 2011
Subject: Ethics Application Number 11/242 **Exploration of the impact of gambling and problem gambling on Pacific families and communities in New Zealand.**

Dear Maria

Thank you for providing written evidence as requested. I am pleased to advise that it satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC) at their meeting on 12 September 2011 and I have approved your ethics application. This delegated approval is made in accordance with section 5.3.2.3 of AUTEC's *Applying for Ethics Approval: Guidelines and Procedures* and is subject to endorsement at AUTEC's meeting on 31 October 2011.

Your ethics application is approved for a period of three years until 4 October 2014.

I advise that as part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/research/research-ethics/ethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 4 October 2014;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/research/research-ethics/ethics>. This report is to be submitted either when the approval expires on 4 October 2014 or on completion of the project, whichever comes sooner;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are reminded that, as applicant, you are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

Please note that AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to make the arrangements necessary to obtain this.

When communicating with us about this application, we ask that you use the application number and study title to enable us to provide you with prompt service. Should you have any further enquiries regarding this matter, you are welcome to contact me by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 6902.

On behalf of AUTEC and myself, I wish you success with your research and look forward to reading about it in your reports.

Yours sincerely

Dr Rosemary Godbold
Executive Secretary
Auckland University of Technology Ethics Committee

APPENDIX 2

Consultation Group Members

Members

Pesio Ah-Honi Siitia (Mapu Maia, Problem Gambling Foundation of New Zealand)

Hana Asi-Pakieto (Vai Lelei, Pasifika Gambling Helpline)

Mali Erick (Laupapa Trust)

Josephine Gray (Tupu Alcohol, Drug and Gambling Pacific Services)

Vaea Hopoi (Vai Lelei, Pasifika Gambling Helpline)

Salā Johnson (Pacific Island Evaluation Inc.)

Louis Smith (Taeaomanino Trust)

APPENDIX 3

Summary of Consultation and Advisory Group meetings

Advisory group

First feedback key points

Three members of the Advisory group commented individually as follows:

- Pacific gambling involves sensitive issues so *recommend that individual interviews* rather than focus groups should be conducted as participants may be reluctant to talk about gambling issues in a group setting.
- *Recruitment of participants by age and gender may be difficult* and all interviews should be conducted by an experienced facilitator.
- Focus the research topics around *reducing harms and from a solutions-based perspective*.

Second feedback key points

The Advisory group had no specific feedback on the Phase Two design which had been revised based on the first consultation meetings and following discussion with the Ministry of Health.

Consultation group

First feedback key points

The Consultation group discussed several points that were deemed to be crucial aspects to the Phase Two design. These related to the focus of the project, methodology (focus groups versus individual interviews) and the research protocol. In general there was consensus on the views provided.

Focus of the project

- *The focus should be on problem gamblers and their significant others*. In particular, former problem gamblers, and their significant others, who have ‘overcome’ their problems (rather than current problem gamblers).
- *Including non-gamblers in the project is not important* because not gambling is the default state for Pacific peoples. The key things to know are the reasons why Pacific peoples gamble instead of why they do not gamble.
- *The opinions of youth (affected by adults’ gambling rather than youth gamblers) are very important* and should be a strong focus.
- A *solutions focus* was requested. The Group would like to understand how the Pacific mind works: why some enjoy gambling, why they do not seek help, what is working, and if ‘by Pacific for Pacific’ is the best help approach.
- There was some expressed desire to *understand the change in focus in Pacific cultures* from cultural capital to money-orientated rewards.

Methodology

- The decision regarding individual interviews or focus groups can only be made after the interview questions are devised. There was a *general preference for focus groups*. However, if participants are to be asked sensitive questions about personal information or money, then the group recommended that individual interviews would be more appropriate.
- The *focus groups should contain a mix of ages* (rather than being divided into youth and adults) to open up a community dialogue: “spaces where communities come together”. *The process should be quite broad*, for example participants should not be labelled as problem gamblers.

- The Group queried How ‘significant other’ would be defined and how ‘problem gambling’ would be defined (in a Pacific context)
- *A preference for ethnic specific focus/interview groups for all categories except for youth* was requested. It was believed that the interviewer should be able to speak the ethnic specific language as well as English.
- *The youth focus groups could comprise all three Pacific ethnicities and both genders* but could possibly be *split into New Zealand born and non-New Zealand born* to distinguish differences in cultural identity and exposure to gambling.

Protocol

- The importance of selecting the right person as the interviewer/facilitator was stressed: “The facilitator is a crucial part of your study”; building up trust and confidence is a lengthy process.
- There was concern about the protocol for recruiting participants in terms of the time frame.

Second feedback key points

Focus groups and individual interviews

- The revised methodology comprising focus groups and semi-structured individual interviews was considered to be fine.
- *A church leader focus group should be considered* as the church plays such an important role in Pacific culture and also in terms of fund raising and gambling. Churches have a large influence in regard to gambling by their congregation. The focus groups could comprise a mix of church denominations. Some individual interviews of church leaders would also be useful.
- *Churches with a ‘no gambling policy’ should be included* as well as those who do not have such a policy.

Focus group and individual interview topics

- *There was concern that the list of proposed topics, whilst all valuable, is too extensive and would diminish the process of storytelling.* The group was reassured that the focus groups and interviews would take a grounded theory approach, with the facilitator suggesting broad topic areas to participants and prompting occasionally for discussion in areas that may not be covered. This would allow for discussion in areas not thought of by the researchers/indicated by previous research.
- *The facilitator was discussed as having a key role* in the process.
- *Gambling needs to be defined up front.* Some people may not consider some forms of gambling to be gambling, e.g. housie may be considered as fund raising rather than gambling, Lotto may not be considered to be gambling.
- *Churches with a ‘no gambling policy’ should be asked to speak about the policy* (e.g. how/why it was put together) and implementation of the policy (e.g. is housie still allowed as this is ‘fund raising’?) as well as effectiveness.
- The importance of *family is crucial in Pacific cultures* and should be teased out in relation to gambling in the focus groups.
- There needs to be a balance between research requirements and community discussion in the focus groups.

Recruitment

- Recruitment will be time consuming.
- The Consultation group is happy to assist where possible
- There are already networks into Pacific communities.

APPENDIX 4

Data Tables A: Social impacts of gambling in New Zealand data

Table A1: Gambler types by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Non-gambler	146	(46)	124	(59)	108	(43)	38	(41)	82	(50)	498	(48)
Lotto/Keno only	57	(18)	33	(16)	43	(17)	14	(15)	29	(18)	176	(17)
Infrequent continuous	90	(28)	49	(23)	83	(33)	35	(38)	47	(29)	304	(29)
Frequent continuous	24	(8)	4	(2)	15	(6)	5	(5)	5	(3)	53	(5)
Total	317	(100)	210	(100)	249	(100)	92	(100)	163	(100)	1031	(100)

Table A2: Gambling mode by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Lotto												
Yes	141	(44)	66	(31)	124	(50)	45	(49)	64	(40)	440	(43)
No	176	(56)	144	(69)	125	(50)	47	(51)	98	(60)	590	(57)
Keno												
Yes	13	(4)	1	(0)	8	(3)	3	(3)	4	(2)	29	(3)
No	304	(96)	209	(100)	241	(97)	89	(97)	159	(98)	1002	(97)
Instant Kiwi												
Yes	58	(18)	21	(10)	38	(15)	21	(23)	26	(16)	164	(16)
No	259	(82)	189	(90)	211	(85)	71	(77)	137	(84)	867	(84)
Horse/Dog Racing												
Yes	25	(8)	5	(2)	28	(11)	8	(9)	3	(2)	69	(7)
No	292	(92)	205	(98)	221	(89)	84	(91)	160	(98)	962	(93)
EGM (non-casino)												
Yes	37	(12)	16	(8)	35	(14)	6	(7)	13	(8)	107	(10)
No	280	(88)	194	(92)	214	(86)	86	(93)	150	(92)	924	(90)
EGM (casino)												
Yes	33	(10)	20	(10)	26	(10)	12	(13)	12	(7)	103	(10)
No	283	(90)	190	(90)	222	(90)	80	(87)	151	(93)	926	(90)
Housie												
Yes	21	(7)	2	(1)	12	(5)	5	(5)	6	(4)	46	(4)
No	296	(93)	208	(99)	237	(95)	87	(95)	157	(96)	985	(96)
Card Game												
Yes	25	(8)	11	(5)	12	(5)	8	(9)	9	(6)	65	(6)
No	292	(92)	199	(95)	237	(95)	84	(91)	154	(94)	966	(94)
Casino Table Game												
Yes	14	(4)	4	(2)	6	(2)	3	(3)	4	(2)	31	(3)
No	302	(96)	206	(98)	242	(98)	89	(97)	159	(98)	998	(97)
Others												
Yes	2	(1)	0	(0)	1	(0)	0	(0)	4	(2)	7	(1)
No	315	(99)	209	(100)	248	(100)	92	(100)	159	(98)	1023	(99)

Table A3: Number of gambling modes by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Number of Modes Played												
1	74	(43)	48	(56)	57	(40)	21	(39)	38	(48)	238	(45)
2	42	(25)	21	(25)	45	(32)	18	(33)	26	(33)	152	(29)
3	27	(16)	9	(11)	20	(14)	8	(15)	10	(13)	74	(14)
4	16	(9)	6	(7)	13	(9)	5	(9)	5	(6)	45	(8)
5 or more	12	(7)	1	(1)	6	(4)	2	(4)	1	(1)	22	(4)

Table A4: Number of gambling modes by gambler type

	Lotto/Keno Only		Infrequent Continuous		Frequent Continuous		All Gamblers	
	N	(%)	N	(%)	N	(%)	N	(%)
	Number of Modes Played							
1	170	(97)	66	(22)	4	(8)	240	(45)
2	6	(3)	134	(44)	12	(23)	152	(29)
3	0	(0)	62	(20)	12	(23)	74	(14)
4	0	(0)	30	(10)	15	(28)	45	(8)
5 or more	0	(0)	12	(4)	10	(19)	22	(4)

Table A6: Impacts of respondents' own gambling

	Negative impact		No impact		Positive impact	
	N	(%)	N	(%)	N	(%)
Physical Health	38	(7)	476	(90)	15	(3)
Mental Wellbeing	48	(9)	463	(87)	24	(4)
Financial Situation	81	(15)	438	(82)	16	(3)
Housing Situation	36	(7)	482	(90)	19	(4)
Standard of Living	54	(10)	467	(87)	15	(3)
Relationships	30	(6)	489	(91)	16	(3)
Child Care	12	(3)	333	(94)	11	(3)
Elderly Care	3	(3)	86	(93)	3	(3)
Feeling about Self	37	(7)	484	(90)	16	(3)
Performance in Training	9	(4)	228	(93)	7	(3)
Work Performance	19	(5)	382	(92)	14	(3)
Overall Quality of life	38	(7)	491	(92)	7	(1)
Life Satisfaction	28	(5)	497	(93)	12	(2)

Table A7: Respondents' money gain/lost on gambling in past 12 months

	Made money		Broken even		Lost money		Total
	N	(%)	N	(%)	N	(%)	
Up to \$100	23	(33)	0	(0)	160	(43)	
\$101 - 500	15	(22)	0	(0)	110	(29)	
\$501 - 2,500	14	(20)	0	(0)	53	(14)	
\$2,501 - 5,000	8	(12)	0	(0)	9	(2)	
\$5,000 - 10000	3	(4)	0	(0)	1	(0)	
More than \$10000	2	(3)	0	(0)	3	(1)	
Missing	4	(6)	85	(100)	39	(10)	
Total	69	(13)	85	(16)	375	(71)	529

Table A8: Impacts of respondents' own gambling by ethnicity

	Samoa		Tongan		Cook Island		Niuean		Other Pacific		All Pacific		P-value
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Physical Health													0.527
Negative impact	14	(8)	8	(9)	9	(6)	1	(2)	6	(7)	38	(7)	
No impact	152	(90)	73	(86)	127	(90)	51	(98)	73	(89)	476	(90)	
Positive impact	3	(2)	4	(5)	5	(4)	0	(0)	3	(4)	15	(3)	
Mental Wellbeing													0.146
Negative impact	15	(9)	11	(13)	16	(11)	2	(4)	4	(5)	48	(9)	
No impact	148	(87)	70	(80)	117	(82)	50	(94)	78	(94)	463	(87)	
Positive impact	7	(4)	6	(7)	9	(6)	1	(2)	1	(1)	24	(4)	
Financial Situation													0.243
Negative impact	27	(16)	17	(20)	21	(15)	4	(7)	12	(15)	81	(15)	
No impact	137	(80)	70	(80)	113	(80)	49	(91)	69	(84)	438	(82)	
Positive impact	7	(4)	0	(0)	7	(5)	1	(2)	1	(1)	16	(3)	
Housing Situation													0.688
Negative impact	12	(7)	8	(9)	9	(6)	2	(4)	5	(6)	36	(7)	
No impact	150	(88)	77	(89)	128	(90)	52	(96)	75	(90)	482	(90)	
Positive impact	9	(5)	2	(2)	5	(4)	0	(0)	3	(4)	19	(4)	
Standard of Living													0.622
Negative impact	15	(9)	10	(12)	17	(12)	3	(6)	9	(11)	54	(10)	
No impact	152	(89)	73	(85)	120	(84)	51	(94)	71	(86)	467	(87)	
Positive impact	3	(2)	3	(3)	6	(4)	0	(0)	3	(4)	15	(3)	
Relationships													0.224
Negative impact	12	(7)	8	(9)	5	(4)	3	(6)	2	(2)	30	(6)	
No impact	151	(89)	77	(89)	131	(92)	50	(93)	80	(98)	489	(91)	
Positive impact	6	(4)	2	(2)	7	(5)	1	(2)	0	(0)	16	(3)	
Child care													0.917
Negative impact	4	(3)	3	(5)	2	(2)	1	(3)	2	(4)	12	(3)	
No impact	111	(93)	54	(92)	83	(95)	36	(97)	49	(91)	333	(94)	
Positive impact	4	(3)	2	(3)	2	(2)	0	(0)	3	(6)	11	(3)	
Elderly care													0.531
Negative impact	0	(0)	1	(8)	2	(7)	0	(0)	0	(0)	3	(3)	
No impact	27	(96)	11	(92)	24	(86)	9	(100)	15	(100)	86	(93)	
Positive impact	1	(4)	0	(0)	2	(7)	0	(0)	0	(0)	3	(3)	
Feeling about self													0.327
Negative impact	14	(8)	7	(8)	10	(7)	1	(2)	5	(6)	37	(7)	
No impact	152	(89)	77	(90)	125	(87)	53	(98)	77	(93)	484	(90)	
Positive impact	5	(3)	2	(2)	8	(6)	0	(0)	1	(1)	16	(3)	
Performance in training													0.872
Negative impact	3	(4)	2	(5)	1	(1)	2	(8)	1	(2)	9	(4)	
No impact	66	(92)	34	(92)	66	(96)	22	(92)	40	(95)	228	(93)	
Positive impact	3	(4)	1	(3)	2	(3)	0	(0)	1	(2)	7	(3)	
Work performance													0.739
Negative impact	7	(5)	5	(7)	4	(4)	2	(5)	1	(1)	19	(5)	
No impact	122	(92)	60	(90)	98	(91)	38	(93)	64	(96)	382	(92)	
Positive impact	3	(2)	2	(3)	6	(6)	1	(2)	2	(3)	14	(3)	
Overall quality of life													0.6
Negative impact	15	(9)	7	(8)	9	(6)	2	(4)	5	(6)	38	(7)	
No impact	152	(90)	79	(91)	130	(91)	52	(96)	78	(94)	491	(92)	
Positive impact	2	(1)	1	(1)	4	(3)	0	(0)	0	(0)	7	(1)	
Life satisfaction													0.121
Negative impact	8	(5)	8	(9)	3	(2)	2	(4)	7	(8)	28	(5)	
No impact	156	(91)	77	(90)	137	(96)	52	(96)	75	(90)	497	(93)	
Positive impact	7	(4)	1	(1)	3	(2)	0	(0)	1	(1)	12	(2)	

No statistical significance attained

Table A9: Impacts of respondents' own gambling by gambler type

	Lotto/Keno only		Infrequent Continuous		Frequent Continuous		All Gamblers		P-value
	N	(%)	N	(%)	N	(%)	N	(%)	
Physical Health									0.613
Negative impact	9	(5)	24	(8)	5	(10)	38	(7)	
No impact	159	(91)	268	(90)	42	(86)	469	(90)	
Positive impact	6	(3)	7	(2)	2	(4)	15	(3)	
Mental Wellbeing									0.0828
Negative impact	10	(6)	29	(10)	9	(17)	48	(9)	
No impact	158	(90)	258	(86)	40	(75)	456	(86)	
Positive impact	7	(4)	13	(4)	4	(8)	24	(5)	
Financial Situation ***									0.0006
Negative impact	15	(9)	48	(16)	17	(33)	80	(15)	
No impact	157	(89)	242	(80)	33	(65)	432	(82)	
Positive impact	4	(2)	11	(4)	1	(2)	16	(3)	
Housing Situation									0.0636
Negative impact	6	(3)	23	(8)	7	(13)	36	(7)	
No impact	163	(93)	267	(89)	46	(87)	476	(90)	
Positive impact	7	(4)	11	(4)	0	(0)	18	(3)	
Standard of Living									0.0756
Negative impact	12	(7)	32	(11)	9	(17)	53	(10)	
No impact	155	(89)	263	(87)	43	(83)	461	(87)	
Positive impact	8	(5)	7	(2)	0	(0)	15	(3)	
Relationships									0.581
Negative impact	6	(3)	20	(7)	4	(8)	30	(6)	
No impact	163	(93)	273	(90)	46	(90)	482	(91)	
Positive impact	6	(3)	9	(3)	1	(2)	16	(3)	
Child care									0.0602
Negative impact	0	(0)	10	(5)	2	(6)	12	(3)	
No impact	123	(95)	176	(92)	32	(94)	331	(94)	
Positive impact	6	(5)	5	(3)	0	(0)	11	(3)	
Elderly care									0.513
Negative impact	0	(0)	3	(5)	0	(0)	3	(3)	
No impact	24	(96)	51	(93)	10	(91)	85	(93)	
Positive impact	1	(4)	1	(2)	1	(9)	3	(3)	
Feeling about self									0.379
Negative impact	10	(6)	21	(7)	6	(12)	37	(7)	
No impact	160	(91)	274	(91)	43	(83)	477	(90)	
Positive impact	6	(3)	7	(2)	3	(6)	16	(3)	
Performance in training									0.238
Negative impact	0	(0)	8	(5)	1	(6)	9	(4)	
No impact	69	(96)	137	(93)	16	(89)	222	(93)	
Positive impact	3	(4)	3	(2)	1	(6)	7	(3)	
Work performance									0.251
Negative impact	3	(2)	14	(6)	2	(5)	19	(5)	
No impact	125	(95)	216	(91)	34	(87)	375	(92)	
Positive impact	3	(2)	8	(3)	3	(8)	14	(3)	
Overall quality of life ***									0.0006
Negative impact	1	(1)	27	(9)	10	(19)	38	(7)	
No impact	171	(98)	272	(90)	41	(77)	484	(91)	
Positive impact	3	(2)	2	(1)	2	(4)	7	(1)	
Life satisfaction									0.225
Negative impact	4	(2)	21	(7)	2	(4)	27	(5)	
No impact	166	(95)	275	(91)	50	(94)	491	(93)	
Positive impact	5	(3)	6	(2)	1	(2)	12	(2)	

*** P < 0.001

Table A10: Whether respondent knew a heavy gambler

	Samoa		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	56	(18)	22	(11)	53	(22)	20	(22)	39	(24)	190	(19)
No	254	(82)	186	(89)	192	(78)	71	(78)	124	(76)	827	(81)

Table A11: Impacts of other people's gambling

	Negative impact		No impact		Positive impact	
	N	(%)	N	(%)	N	(%)
Physical Health	28	(15)	152	(80)	9	(5)
Mental Wellbeing	25	(13)	152	(81)	11	(6)
Financial Situation	40	(21)	144	(76)	5	(3)
Housing Situation	26	(14)	156	(83)	7	(4)
Standard of Living	28	(15)	157	(83)	4	(2)
Relationships	31	(16)	143	(76)	14	(7)
Child Care	11	(9)	104	(87)	5	(4)
Elderly Care	4	(9)	38	(88)	1	(2)
Feeling about Self	38	(20)	146	(77)	5	(3)
Performance in Training	9	(9)	79	(82)	8	(8)
Work Performance	11	(7)	135	(89)	6	(4)
Overall Quality of life	31	(16)	152	(80)	6	(3)
Life Satisfaction	34	(18)	140	(74)	15	(8)

Table A12: Impacts of other people's gambling by ethnicity

	Samoa		Tongan		Cook Island		Niuean		Other Pacific		All Pacific		P-value
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Physical Health *													0.0202
Negative impact	12	(21)	3	(14)	6	(12)	1	(5)	6	(15)	28	(15)	
No impact	42	(75)	19	(86)	46	(88)	18	(90)	27	(69)	152	(80)	
Positive impact	2	(4)	0	(0)	0	(0)	1	(5)	6	(15)	9	(5)	
Mental Wellbeing													0.0954
Negative impact	8	(14)	4	(18)	8	(16)	0	(0)	5	(13)	25	(13)	
No impact	46	(82)	15	(68)	43	(84)	19	(95)	29	(74)	152	(81)	
Positive impact	2	(4)	3	(14)	0	(0)	1	(5)	5	(13)	11	(6)	
Financial Situation													0.348
Negative impact	11	(20)	5	(23)	12	(23)	2	(10)	10	(26)	40	(21)	
No impact	44	(79)	16	(73)	40	(77)	18	(90)	26	(67)	144	(76)	
Positive impact	1	(2)	1	(5)	0	(0)	0	(0)	3	(8)	5	(3)	
Housing Situation													0.987
Negative impact	7	(13)	4	(18)	6	(12)	3	(15)	6	(15)	26	(14)	
No impact	47	(84)	18	(82)	44	(85)	16	(80)	31	(79)	156	(83)	
Positive impact	2	(4)	0	(0)	2	(4)	1	(5)	2	(5)	7	(4)	
Standard of Living													0.502
Negative impact	8	(14)	2	(9)	10	(19)	1	(5)	7	(18)	28	(15)	
No impact	48	(86)	19	(86)	41	(79)	19	(95)	30	(77)	157	(83)	
Positive impact	0	(0)	1	(5)	1	(2)	0	(0)	2	(5)	4	(2)	
Relationships *													0.0219
Negative impact	9	(16)	4	(18)	10	(20)	2	(10)	6	(15)	31	(16)	
No impact	45	(80)	13	(59)	41	(80)	17	(85)	27	(69)	143	(76)	
Positive impact	2	(4)	5	(23)	0	(0)	1	(5)	6	(15)	14	(7)	
Child care													0.585
Negative impact	4	(10)	2	(18)	4	(13)	0	(0)	1	(4)	11	(9)	
No impact	34	(85)	9	(82)	28	(88)	13	(93)	20	(87)	104	(87)	
Positive impact	2	(5)	0	(0)	0	(0)	1	(7)	2	(9)	5	(4)	
Elderly care													0.631
Negative impact	1	(10)	1	(13)	2	(14)	0	(0)	0	(0)	4	(9)	
No impact	9	(90)	7	(88)	12	(86)	4	(100)	6	(86)	38	(88)	
Positive impact	0	(0)	0	(0)	0	(0)	0	(0)	1	(14)	1	(2)	
Feeling about self													0.119
Negative impact	7	(13)	8	(36)	12	(23)	3	(15)	8	(21)	38	(20)	
No impact	47	(84)	14	(64)	40	(77)	17	(85)	28	(72)	146	(77)	
Positive impact	2	(4)	0	(0)	0	(0)	0	(0)	3	(8)	5	(3)	
Performance in training													0.93
Negative impact	2	(8)	1	(11)	4	(13)	0	(0)	2	(10)	9	(9)	
No impact	22	(85)	8	(89)	25	(81)	8	(89)	16	(76)	79	(82)	
Positive impact	2	(8)	0	(0)	2	(6)	1	(11)	3	(14)	8	(8)	
Work performance													0.36
Negative impact	6	(13)	0	(0)	1	(3)	0	(0)	4	(12)	11	(7)	
No impact	40	(83)	20	(100)	34	(94)	14	(93)	27	(82)	135	(89)	
Positive impact	2	(4)	0	(0)	1	(3)	1	(7)	2	(6)	6	(4)	
Overall quality of life													0.28
Negative impact	10	(18)	4	(18)	8	(15)	3	(15)	6	(15)	31	(16)	
No impact	44	(79)	18	(82)	44	(85)	17	(85)	29	(74)	152	(80)	
Positive impact	2	(4)	0	(0)	0	(0)	0	(0)	4	(10)	6	(3)	
Life satisfaction													0.538
Negative impact	9	(16)	2	(9)	13	(25)	4	(20)	6	(15)	34	(18)	
No impact	43	(77)	17	(77)	36	(69)	16	(80)	28	(72)	140	(74)	
Positive impact	4	(7)	3	(14)	3	(6)	0	(0)	5	(13)	15	(8)	

* P < 0.05

Table A13: Impacts of other people's gambling by gambler type

	Non-gambler		Lotto/Keno only		Infrequent Continuous		Frequent Continuous		All Respondents		P-value
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Physical Health											0.34
Negative impact	12	(18)	3	(8)	10	(13)	3	(27)	28	(15)	
No impact	49	(75)	33	(92)	62	(81)	8	(73)	152	(80)	
Positive impact	4	(6)	0	(0)	5	(6)	0	(0)	9	(5)	
Mental Wellbeing											0.62
Negative impact	9	(14)	3	(8)	10	(13)	3	(27)	25	(13)	
No impact	50	(78)	32	(89)	62	(81)	8	(73)	152	(81)	
Positive impact	5	(8)	1	(3)	5	(6)	0	(0)	11	(6)	
Financial Situation											0.65
Negative impact	15	(23)	4	(11)	17	(22)	4	(36)	40	(21)	
No impact	48	(74)	31	(86)	58	(75)	7	(64)	144	(76)	
Positive impact	2	(3)	1	(3)	2	(3)	0	(0)	5	(3)	
Housing Situation											0.388
Negative impact	10	(15)	1	(3)	14	(18)	1	(9)	26	(14)	
No impact	52	(80)	34	(94)	60	(78)	10	(91)	156	(83)	
Positive impact	3	(5)	1	(3)	3	(4)	0	(0)	7	(4)	
Standard of Living											0.497
Negative impact	9	(14)	3	(8)	14	(18)	2	(18)	28	(15)	
No impact	53	(82)	33	(92)	62	(81)	9	(82)	157	(83)	
Positive impact	3	(5)	0	(0)	1	(1)	0	(0)	4	(2)	
Relationships											0.219
Negative impact	9	(14)	4	(11)	16	(21)	2	(18)	31	(16)	
No impact	46	(72)	30	(83)	58	(75)	9	(82)	143	(76)	
Positive impact	9	(14)	2	(6)	3	(4)	0	(0)	14	(7)	
Child care											0.688
Negative impact	4	(12)	1	(4)	5	(10)	1	(11)	11	(9)	
No impact	27	(82)	27	(96)	42	(84)	8	(89)	104	(87)	
Positive impact	2	(6)	0	(0)	3	(6)	0	(0)	5	(4)	
Elderly care											0.79
Negative impact	2	(13)	0	(0)	2	(11)	0	(0)	4	(9)	
No impact	12	(80)	6	(100)	17	(89)	3	(100)	38	(88)	
Positive impact	1	(7)	0	(0)	0	(0)	0	(0)	1	(2)	
Feeling about self											0.855
Negative impact	10	(15)	6	(17)	19	(25)	3	(27)	38	(20)	
No impact	53	(82)	29	(81)	56	(73)	8	(73)	146	(77)	
Positive impact	2	(3)	1	(3)	2	(3)	0	(0)	5	(3)	
Performance in training											0.12
Negative impact	7	(18)	0	(0)	2	(6)	0	(0)	9	(9)	
No impact	28	(74)	18	(100)	29	(81)	4	(100)	79	(82)	
Positive impact	3	(8)	0	(0)	5	(14)	0	(0)	8	(8)	
Work performance											0.142
Negative impact	3	(6)	0	(0)	6	(10)	2	(22)	11	(7)	
No impact	48	(91)	31	(100)	49	(83)	7	(78)	135	(89)	
Positive impact	2	(4)	0	(0)	4	(7)	0	(0)	6	(4)	
Overall quality of life											0.393
Negative impact	15	(23)	4	(11)	9	(12)	3	(27)	31	(16)	
No impact	47	(72)	31	(86)	66	(86)	8	(73)	152	(80)	
Positive impact	3	(5)	1	(3)	2	(3)	0	(0)	6	(3)	
Life satisfaction											0.871
Negative impact	12	(18)	6	(17)	13	(17)	3	(27)	34	(18)	
No impact	46	(71)	28	(78)	58	(75)	8	(73)	140	(74)	
Positive impact	7	(11)	2	(6)	6	(8)	0	(0)	15	(8)	

No statistical significance attained

APPENDIX 5
Data Tables B: Gaming and betting activities survey data

Table B1: Gambling participation by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific		p-value
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Lottery Products													0.088
Yes	55	(51)	28	(52)	25	(69)	18	(75)	23	(51)	149	(56)	
No	53	(49)	26	(48)	11	(31)	6	(25)	22	(49)	118	(44)	
Horse/Dog/Sports Racing													0.69
Yes	9	(8)	5	(9)	4	(11)	4	(17)	3	(7)	25	(9)	
No	99	(92)	49	(91)	32	(89)	20	(83)	42	(93)	242	(91)	
EGM (non-casino)*													0.049
Yes	17	(16)	6	(11)	13	(36)	5	(21)	7	(16)	48	(18)	
No	91	(84)	48	(89)	23	(64)	19	(79)	38	(84)	219	(82)	
EGM (casino)													0.29
Yes	13	(12)	7	(13)	9	(25)	5	(21)	5	(11)	39	(15)	
No	95	(88)	47	(87)	27	(75)	19	(79)	40	(89)	228	(85)	
Housie/Bingo													0.56
Yes	13	(12)	3	(6)	3	(8)	4	(17)	4	(9)	27	(10)	
No	95	(88)	51	(94)	33	(92)	20	(83)	41	(91)	240	(90)	
Casino Table Game													0.27
Yes	3	(3)	0	(0)	2	(6)	0	(0)	0	(0)	5	(2)	
No	105	(97)	54	(100)	34	(94)	24	(100)	45	(100)	262	(98)	
Internet Gambling													
Yes	0	(0)	0	(0)	1	(3)	1	(4)	0	(0)	2	(1)	
No	108	(100)	54	(100)	35	(97)	23	(96)	45	(100)	265	(99)	

* P < 0.05

Table B2: Gambling participation by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific		p-value
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	
Lottery Products***													<0.001
Yes	3	(9)	17	(43)	79	(63)	38	(73)	12	(71)	149	(56)	
No	29	(91)	23	(58)	47	(37)	14	(27)	5	(29)	118	(44)	
Horse/Dog/Sports Racing*													0.02
Yes	1	(3)	1	(3)	10	(8)	9	(17)	4	(24)	25	(9)	
No	31	(97)	39	(98)	116	(92)	43	(83)	13	(76)	242	(91)	
EGM (non-casino)													0.09
Yes	1	(3)	8	(20)	24	(19)	13	(25)	2	(12)	48	(18)	
No	31	(97)	32	(80)	102	(81)	39	(75)	15	(88)	219	(82)	
EGM (casino)*													0.012
Yes	0	(0)	3	(8)	22	(17)	12	(23)	2	(12)	39	(15)	
No	32	(100)	37	(93)	104	(83)	40	(77)	15	(88)	228	(85)	
Housie/Bingo													0.36
Yes	1	(3)	2	(5)	16	(13)	7	(13)	1	(6)	27	(10)	
No	31	(97)	38	(95)	110	(87)	45	(87)	16	(94)	240	(90)	
Casino Table Game													0.89
Yes	1	(3)	1	(3)	2	(2)	1	(2)	0	(0)	5	(2)	
No	31	(97)	39	(98)	124	(98)	51	(98)	17	(100)	262	(98)	
Internet Gambling													
Yes	0	(0)	1	(3)	1	(1)	0	(0)	0	(0)	2	(1)	
No	32	(100)	39	(98)	125	(99)	52	(100)	17	(100)	265	(99)	

* P < 0.05, *** P < 0.001

Table B3: Gambling frequency by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Lottery Products												
At least weekly	17	(31)	8	(29)	10	(40)	2	(11)	4	(17)	41	(28)
1—3 times a month	17	(31)	13	(46)	8	(32)	9	(50)	5	(22)	52	(35)
1—6 times a year	20	(36)	5	(18)	7	(28)	5	(28)	12	(52)	49	(33)
Less than once a year	1	(2)	2	(7)	0	(0)	2	(11)	2	(9)	7	(5)
Missing	53		26		11		6		22		118	
Horse/Dog/Sports Racing												
At least weekly	5	(56)	2	(40)	2	(50)	1	(25)	0	(0)	10	(40)
1—3 times a month	2	(22)	1	(20)	0	(0)	1	(25)	1	(33)	5	(20)
1—6 times a year	1	(11)	1	(20)	2	(50)	1	(25)	2	(67)	7	(28)
Less than once a year	1	(11)	1	(20)	0	(0)	1	(25)	0	(0)	3	(12)
Missing	99		49		32		20		42		242	
EGM (non-casino)												
At least weekly	2	(12)	1	(17)	3	(23)	0	(0)	2	(29)	8	(17)
1—3 times a month	6	(35)	2	(33)	5	(38)	2	(40)	2	(29)	17	(35)
1—6 times a year	7	(41)	2	(33)	3	(23)	3	(60)	1	(14)	16	(33)
Less than once a year	2	(12)	1	(17)	2	(15)	0	(0)	2	(29)	7	(15)
Missing	91		48		23		19		38		219	
EGM (casino)												
At least weekly	0	(0)	1	(14)	0	(0)	0	(0)	0	(0)	1	(3)
1—3 times a month	2	(15)	1	(14)	0	(0)	1	(20)	1	(20)	5	(13)
1—6 times a year	8	(62)	3	(43)	8	(89)	4	(80)	1	(20)	24	(62)
Less than once a year	3	(23)	2	(29)	1	(11)	0	(0)	3	(60)	9	(23)
Missing	95		47		27		19		40		228	
Housie/Bingo												
At least weekly	4	(31)	2	(67)	1	(33)	1	(25)	1	(25)	9	(33)
1—3 times a month	1	(8)	0	(0)	1	(33)	1	(25)	1	(25)	4	(15)
1—6 times a year	6	(46)	1	(33)	0	(0)	2	(50)	1	(25)	10	(37)
Less than once a year	2	(15)	0	(0)	1	(33)	0	(0)	1	(25)	4	(15)
Missing	95		51		33		20		41		240	
Casino Table Game												
At least weekly	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1—3 times a month	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1—6 times a year	3	(100)	0	(0)	2	(100)	0	(0)	0	(0)	5	(100)
Less than once a year	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Missing	105		54		34		24		45		262	
Internet Gambling												
At least weekly	0	(0)	0		1	(100)	0	(0)	0	(0)	1	(50)
1—3 times a month	0	(0)	0		0	(0)	0	(0)	0	(0)	0	(0)
1—6 times a year	0	(0)	0		0	(0)	1	(100)	0	(0)	1	(50)
Less than once a year	0	(0)	0		0	(0)	0	(0)	0	(0)	0	(0)
Missing	108		54		35		23		45		265	

Table B4: Gambling frequency by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Lottery Products												
At least weekly	1	(33)	1	(6)	19	(24)	14	(37)	6	(50)	41	(28)
1—3 times a month	0	(0)	7	(41)	24	(30)	17	(45)	4	(33)	52	(35)
1—6 times a year	2	(67)	9	(53)	29	(37)	7	(18)	2	(17)	49	(33)
Less than once a year	0	(0)	0	(0)	7	(9)	0	(0)	0	(0)	7	(5)
Missing	29		23		47		14		5		118	
Horse/Dog/Sports Racing												
At least weekly	0	(0)	0	(0)	4	(40)	4	(44)	2	(50)	10	(40)
1—3 times a month	1	(100)	0	(0)	1	(10)	3	(33)	0	(0)	5	(20)
1—6 times a year	0	(0)	0	(0)	4	(40)	1	(11)	2	(50)	7	(28)
Less than once a year	0	(0)	1	(100)	1	(10)	1	(11)	0	(0)	3	(12)
Missing	31		39		116		43		13		242	
EGM (non-casino)												
At least weekly	0	(0)	1	(13)	2	(8)	5	(38)	0	(0)	8	(17)
1—3 times a month	1	(100)	1	(13)	10	(42)	4	(31)	1	(50)	17	(35)
1—6 times a year	0	(0)	3	(38)	10	(42)	2	(15)	1	(50)	16	(33)
Less than once a year	0	(0)	3	(38)	2	(8)	2	(15)	0	(0)	7	(15)
Missing	31		32		102		39		15		219	
EGM (casino)												
At least weekly	0	(0)	0	(0)	1	(5)	0	(0)	0	(0)	1	(3)
1—3 times a month	0	(0)	0	(0)	2	(9)	3	(25)	0	(0)	5	(13)
1—6 times a year	0	(0)	2	(67)	13	(59)	8	(67)	1	(50)	24	(62)
Less than once a year	0	(0)	1	(33)	6	(27)	1	(8)	1	(50)	9	(23)
Missing	32		37		104		40		15		228	
Housie/Bingo												
At least weekly	0	(0)	1	(50)	4	(25)	3	(43)	1	(100)	9	(33)
1—3 times a month	0	(0)	0	(0)	3	(19)	1	(14)	0	(0)	4	(15)
1—6 times a year	1	(100)	1	(50)	6	(38)	2	(29)	0	(0)	10	(37)
Less than once a year	0	(0)	0	(0)	3	(19)	1	(14)	0	(0)	4	(15)
Missing	31		38		110		45		16		240	
Casino Table Game												
At least weekly	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1—3 times a month	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1—6 times a year	1	(100)	1	(100)	2	(100)	1	(100)	0	(0)	5	(100)
Less than once a year	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Missing	31		39		124		51		17		262	
Internet Gambling												
At least weekly	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	1	(50)
1—3 times a month	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
1—6 times a year	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	1	(50)
Less than once a year	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Missing	32		39		125		52		17		265	

Table B5: Signs of harmful gambling by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Financial problems												
Yes	27	(34)	9	(24)	6	(23)	9	(53)	11	(34)	62	(32)
No	52	(66)	28	(76)	20	(77)	8	(47)	21	(66)	129	(68)
Anxious/paranoid/nervous/stressed												
Yes	24	(30)	9	(24)	6	(23)	7	(41)	5	(16)	51	(27)
No	55	(70)	28	(76)	20	(77)	10	(59)	27	(84)	140	(73)
Borrowing money from family												
Yes	18	(23)	8	(22)	8	(31)	7	(41)	8	(25)	49	(26)
No	61	(77)	29	(78)	18	(69)	10	(59)	24	(75)	142	(74)
Unable to pay household bills/food/rent												
Yes	18	(23)	11	(30)	8	(31)	5	(29)	5	(16)	47	(25)
No	61	(77)	26	(70)	18	(69)	12	(71)	27	(84)	144	(75)
Obsessed with gambling												
Yes	17	(22)	4	(11)	6	(23)	3	(18)	9	(28)	39	(20)
No	62	(78)	33	(89)	20	(77)	14	(82)	23	(72)	152	(80)
Angry/aggressive												
Yes	9	(11)	5	(14)	6	(23)	3	(18)	6	(19)	29	(15)
No	70	(89)	32	(86)	20	(77)	14	(82)	26	(81)	162	(85)
Relationship problems												
Yes	11	(14)	8	(22)	4	(15)	0	(0)	5	(16)	28	(15)
No	68	(86)	29	(78)	22	(85)	17	(100)	27	(84)	163	(85)
Lying/deceitful/secretive												
Yes	10	(13)	5	(14)	4	(15)	3	(18)	4	(13)	26	(14)
No	69	(87)	32	(86)	22	(85)	14	(82)	28	(88)	165	(86)
Not looking after themselves/lacking sleep/not eating												
Yes	7	(9)	7	(19)	3	(12)	3	(18)	4	(13)	24	(13)
No	72	(91)	30	(81)	23	(88)	14	(82)	28	(88)	167	(87)
Depressed/unhappy/suicidal/desperate												
Yes	7	(9)	8	(22)	4	(15)	2	(12)	2	(6)	23	(12)
No	72	(91)	29	(78)	22	(85)	15	(88)	30	(94)	168	(88)
Keeping odd hours/coming home late												
Yes	8	(10)	5	(14)	1	(4)	2	(12)	4	(13)	20	(10)
No	71	(90)	32	(86)	25	(96)	15	(88)	28	(88)	171	(90)
Selling possessions/pawning property												
Yes	4	(5)	3	(8)	2	(8)	2	(12)	4	(13)	15	(8)
No	75	(95)	34	(92)	24	(92)	15	(88)	28	(88)	176	(92)
Withdrawn/detached/isolating themselves/unsociable												
Yes	4	(5)	5	(14)	0	(0)	2	(12)	3	(9)	14	(7)
No	75	(95)	32	(86)	26	(100)	15	(88)	29	(91)	177	(93)
Stealing/money missing/crime												
Yes	7	(9)	0	(0)	2	(8)	2	(12)	1	(3)	12	(6)
No	72	(91)	37	(100)	24	(92)	15	(88)	31	(97)	179	(94)
Children neglected												
Yes	1	(1)	3	(8)	1	(4)	0	(0)	2	(6)	7	(4)
No	78	(99)	34	(92)	25	(96)	17	(100)	30	(94)	184	(96)
Behaviour change/change in personality/mood swings												
Yes	4	(5)	0	(0)	2	(8)	0	(0)	1	(3)	7	(4)
No	75	(95)	37	(100)	24	(92)	17	(100)	31	(97)	184	(96)
Drinking and smoking/smoking more/alcoholism/drugs												
Yes	3	(4)	2	(5)	0	(0)	0	(0)	1	(3)	6	(3)
No	76	(96)	35	(95)	26	(100)	17	(100)	31	(97)	185	(97)
Violence												
Yes	2	(3)	1	(3)	2	(8)	0	(0)	0	(0)	5	(3)
No	77	(97)	36	(97)	24	(92)	17	(100)	32	(100)	186	(97)
Work suffers/don't have a job												
Yes	2	(3)	1	(3)	1	(4)	0	(0)	0	(0)	4	(2)
No	77	(97)	36	(97)	25	(96)	17	(100)	32	(100)	187	(98)
Neglecting other responsibilities/commitments												
Yes	1	(1)	0	(0)	0	(0)	1	(6)	1	(3)	3	(2)
No	78	(99)	37	(100)	26	(100)	16	(94)	31	(97)	188	(98)
Talks about gambling wins												
Yes	0	(0)	0	(0)	1	(4)	1	(6)	1	(3)	3	(2)
No	79	(100)	37	(100)	25	(96)	16	(94)	31	(97)	188	(98)
Denial												
Yes	0	(0)	0	(0)	1	(4)	0	(0)	1	(3)	2	(1)
No	79	(100)	37	(100)	25	(96)	17	(100)	31	(97)	189	(99)
Fluctuating income												
Yes	0	(0)	1	(3)	0	(0)	0	(0)	0	(0)	1	(1)
No	79	(100)	36	(97)	26	(100)	17	(100)	32	(100)	190	(99)

Table B6: Signs of harmful gambling by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Financial problems												
Yes	7	(39)	8	(29)	25	(26)	17	(45)	5	(45)	62	(32)
No	11	(61)	20	(71)	71	(74)	21	(55)	6	(55)	129	(68)
Anxious/paranoid/nervous/stressed												
Yes	6	(33)	9	(32)	25	(26)	11	(29)	0	(0)	51	(27)
No	12	(67)	19	(68)	71	(74)	27	(71)	11	(100)	140	(73)
Borrowing money from family												
Yes	2	(11)	11	(39)	24	(25)	10	(26)	2	(18)	49	(26)
No	16	(89)	17	(61)	72	(75)	28	(74)	9	(82)	142	(74)
Unable to pay household bills/food/rent												
Yes	2	(11)	5	(18)	26	(27)	11	(29)	3	(27)	47	(25)
No	16	(89)	23	(82)	70	(73)	27	(71)	8	(73)	144	(75)
Obsessed with gambling												
Yes	7	(39)	6	(21)	20	(21)	6	(16)	0	(0)	39	(20)
No	11	(61)	22	(79)	76	(79)	32	(84)	11	(100)	152	(80)
Angry/aggressive												
Yes	3	(17)	6	(21)	13	(14)	6	(16)	1	(9)	29	(15)
No	15	(83)	22	(79)	83	(86)	32	(84)	10	(91)	162	(85)
Relationship problems												
Yes	3	(17)	3	(11)	15	(16)	5	(13)	2	(18)	28	(15)
No	15	(83)	25	(89)	81	(84)	33	(87)	9	(82)	163	(85)
Lying/deceitful/secretive												
Yes	2	(11)	5	(18)	13	(14)	5	(13)	1	(9)	26	(14)
No	16	(89)	23	(82)	83	(86)	33	(87)	10	(91)	165	(86)
Not looking after themselves/lacking sleep/not eating												
Yes	2	(11)	2	(7)	14	(15)	5	(13)	1	(9)	24	(13)
No	16	(89)	26	(93)	82	(85)	33	(87)	10	(91)	167	(87)
Depressed/unhappy/suicidal/desperate												
Yes	0	(0)	4	(14)	12	(13)	6	(16)	1	(9)	23	(12)
No	18	(100)	24	(86)	84	(88)	32	(84)	10	(91)	168	(88)
Keeping odd hours/coming home late												
Yes	1	(6)	4	(14)	10	(10)	4	(11)	1	(9)	20	(10)
No	17	(94)	24	(86)	86	(90)	34	(89)	10	(91)	171	(90)
Selling possessions/pawning property												
Yes	1	(6)	3	(11)	8	(8)	1	(3)	2	(18)	15	(8)
No	17	(94)	25	(89)	88	(92)	37	(97)	9	(82)	176	(92)
Withdrawn/detached/isolating themselves/unsociable												
Yes	1	(6)	2	(7)	6	(6)	4	(11)	1	(9)	14	(7)
No	17	(94)	26	(93)	90	(94)	34	(89)	10	(91)	177	(93)
Stealing/money missing/crime												
Yes	1	(6)	3	(11)	7	(7)	1	(3)	0	(0)	12	(6)
No	17	(94)	25	(89)	89	(93)	37	(97)	11	(100)	179	(94)
Children neglected												
Yes	0	(0)	0	(0)	4	(4)	2	(5)	1	(9)	7	(4)
No	18	(100)	28	(100)	92	(96)	36	(95)	10	(91)	184	(96)
Behaviour change/change in personality/mood swings												
Yes	0	(0)	1	(4)	2	(2)	3	(8)	1	(9)	7	(4)
No	18	(100)	27	(96)	94	(98)	35	(92)	10	(91)	184	(96)
Drinking and smoking/smoking more/alcoholism/drugs												
Yes	0	(0)	1	(4)	3	(3)	2	(5)	0	(0)	6	(3)
No	18	(100)	27	(96)	93	(97)	36	(95)	11	(100)	185	(97)
Violence												
Yes	0	(0)	0	(0)	4	(4)	1	(3)	0	(0)	5	(3)
No	18	(100)	28	(100)	92	(96)	37	(97)	11	(100)	186	(97)
Work suffers/don't have a job												
Yes	0	(0)	0	(0)	1	(1)	0	(0)	0	(0)	1	(1)
No	18	(100)	28	(100)	95	(99)	38	(100)	11	(100)	190	(99)
Neglecting other responsibilities/commitments												
Yes	0	(0)	1	(4)	2	(2)	0	(0)	0	(0)	3	(2)
No	18	(100)	27	(96)	94	(98)	38	(100)	11	(100)	188	(98)
Talks about gambling wins												
Yes	0	(0)	1	(4)	1	(1)	1	(3)	0	(0)	3	(2)
No	18	(100)	27	(96)	95	(99)	37	(97)	11	(100)	188	(98)
Denial												
Yes	0	(0)	0	(0)	0	(0)	1	(3)	1	(9)	2	(1)
No	18	(100)	28	(100)	96	(100)	37	(97)	10	(91)	189	(99)
Fluctuating income												
Yes	0	(0)	0	(0)	1	(1)	0	(0)	0	(0)	1	(1)
No	18	(100)	28	(100)	95	(99)	38	(100)	11	(100)	190	(99)

Table B7: Potential impacts of harmful gambling by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Unable to pay for household bills/food/rent												
Yes	35	(39)	17	(36)	10	(40)	7	(32)	14	(37)	83	(37)
No	55	(61)	30	(64)	15	(60)	15	(68)	24	(63)	139	(63)
Financial hardship/debt/bankruptcy												
Yes	35	(39)	13	(28)	9	(36)	4	(18)	14	(37)	75	(34)
No	55	(61)	34	(72)	16	(64)	18	(82)	24	(63)	147	(66)
Broken marriages/family												
Yes	19	(21)	9	(19)	6	(24)	8	(36)	13	(34)	55	(25)
No	71	(79)	38	(81)	19	(76)	14	(64)	25	(66)	167	(75)
Children neglected/suffer												
Yes	21	(23)	9	(19)	1	(4)	4	(18)	8	(21)	43	(19)
No	69	(77)	38	(81)	24	(96)	18	(82)	30	(79)	179	(81)
Strained relationships												
Yes	17	(19)	8	(17)	4	(16)	5	(23)	7	(18)	41	(18)
No	73	(81)	39	(83)	21	(84)	17	(77)	31	(82)	181	(82)
Arguments/disputes in household												
Yes	8	(9)	5	(11)	2	(8)	2	(9)	6	(16)	23	(10)
No	82	(91)	42	(89)	23	(92)	20	(91)	32	(84)	199	(90)
Stress												
Yes	9	(10)	5	(11)	2	(8)	3	(14)	0	(0)	19	(9)
No	81	(90)	42	(89)	23	(92)	19	(86)	38	(100)	203	(91)
Anger/violence/aggression												
Yes	7	(8)	6	(13)	1	(4)	2	(9)	1	(3)	17	(8)
No	83	(92)	41	(87)	24	(96)	20	(91)	37	(97)	205	(92)
Depression/unhappiness												
Yes	7	(8)	2	(4)	2	(8)	1	(5)	5	(13)	17	(8)
No	83	(92)	45	(96)	23	(92)	21	(95)	33	(87)	205	(92)
Loss/repossession of assets/personal assets												
Yes	5	(6)	5	(11)	3	(12)	0	(0)	2	(5)	15	(7)
No	85	(94)	42	(89)	22	(88)	22	(100)	36	(95)	207	(93)
Life is taken over/gambling put ahead of												
Yes	5	(6)	5	(11)	1	(4)	1	(5)	2	(5)	14	(6)
No	85	(94)	42	(89)	24	(96)	21	(95)	36	(95)	208	(94)
Never at home/stay out late/no family time												
Yes	4	(4)	2	(4)	1	(4)	3	(14)	3	(8)	13	(6)
No	86	(96)	45	(96)	24	(96)	19	(86)	35	(92)	209	(94)
Loss of trust and respect/lying/deceit												
Yes	6	(7)	3	(6)	0	(0)	1	(5)	3	(8)	13	(6)
No	84	(93)	44	(94)	25	(100)	21	(95)	35	(92)	209	(94)
Need to borrow money/remortgage their house												
Yes	4	(4)	4	(9)	1	(4)	1	(5)	1	(3)	11	(5)
No	86	(96)	43	(91)	24	(96)	21	(95)	37	(97)	211	(95)
Behaviour/personality/emotional changes												
Yes	2	(2)	5	(11)	1	(4)	0	(0)	2	(5)	10	(5)
No	88	(98)	42	(89)	24	(96)	22	(100)	36	(95)	212	(95)
Lose everything/devastating for the household												
Yes	4	(4)	3	(6)	1	(4)	2	(9)	0	(0)	10	(5)
No	86	(96)	44	(94)	24	(96)	20	(91)	38	(100)	212	(95)
Get evicted/lose house												
Yes	6	(7)	2	(4)	1	(4)	0	(0)	0	(0)	9	(4)
No	84	(93)	45	(96)	24	(96)	22	(100)	38	(100)	213	(96)
Loss of job/livelihood/unable to work/affects work												
Yes	4	(4)	1	(2)	1	(4)	0	(0)	2	(5)	8	(4)
No	86	(96)	46	(98)	24	(96)	22	(100)	36	(95)	214	(96)
Not looking after themselves/poor appearance/poor health												
Yes	3	(3)	3	(6)	1	(4)	0	(0)	1	(3)	8	(4)
No	87	(97)	44	(94)	24	(96)	22	(100)	37	(97)	214	(96)
Burglary/stealing/criminal activity												
Yes	3	(3)	1	(2)	0	(0)	2	(9)	1	(3)	7	(3)
No	87	(97)	46	(98)	25	(100)	20	(91)	37	(97)	215	(97)
Grumpy/bad tempered												
Yes	1	(1)	1	(2)	1	(4)	1	(5)	1	(3)	5	(2)
No	89	(99)	46	(98)	24	(96)	21	(95)	37	(97)	217	(98)
Loss of self-esteem/confidence												
Yes	1	(1)	0	(0)	1	(4)	0	(0)	3	(8)	5	(2)
No	89	(99)	47	(100)	24	(96)	22	(100)	35	(92)	217	(98)
Alcohol/drug abuse												
Yes	3	(3)	0	(0)	0	(0)	0	(0)	0	(0)	3	(1)
No	87	(97)	47	(100)	25	(100)	22	(100)	38	(100)	219	(99)
Sets a bad example to others												
Yes	0	(0)	0	(0)	1	(4)	0	(0)	1	(3)	2	(1)
No	90	(100)	47	(100)	24	(96)	22	(100)	37	(97)	220	(99)
Lose friends/become withdrawn												
Yes	0	(0)	1	(2)	0	(0)	0	(0)	0	(0)	1	(0)
No	90	(100)	46	(98)	25	(100)	22	(100)	38	(100)	221	(100)

Table B8: Potential impacts of harmful gambling by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Unable to pay for household bills/food/rent												
Yes	7	(29)	6	(19)	44	(35)	25	(46)	5	(38)	87	(35)
No	17	(71)	26	(81)	82	(65)	29	(54)	8	(62)	162	(65)
Financial hardship/debt/bankruptcy												
Yes	14	(58)	10	(31)	33	(26)	22	(41)	6	(46)	85	(34)
No	10	(42)	22	(69)	93	(74)	32	(59)	7	(54)	164	(66)
Broken marriages/family												
Yes	5	(21)	9	(28)	30	(24)	14	(26)	2	(15)	60	(24)
No	19	(79)	23	(72)	96	(76)	40	(74)	11	(85)	189	(76)
Children neglected/suffer												
Yes	2	(8)	3	(9)	23	(18)	13	(24)	3	(23)	44	(18)
No	22	(92)	29	(91)	103	(82)	41	(76)	10	(77)	205	(82)
Strained relationships												
Yes	3	(13)	6	(19)	21	(17)	12	(22)	1	(8)	43	(17)
No	21	(88)	26	(81)	105	(83)	42	(78)	12	(92)	206	(83)
Arguments/disputes in household												
Yes	3	(13)	4	(13)	16	(13)	5	(9)	1	(8)	29	(12)
No	21	(88)	28	(88)	110	(87)	49	(91)	12	(92)	220	(88)
Stress												
Yes	2	(8)	7	(22)	8	(6)	3	(6)	0	(0)	20	(8)
No	22	(92)	25	(78)	118	(94)	51	(94)	13	(100)	229	(92)
Anger/violence/aggression												
Yes	0	(0)	2	(6)	14	(11)	2	(4)	0	(0)	18	(7)
No	24	(100)	30	(94)	112	(89)	52	(96)	13	(100)	231	(93)
Depression/unhappiness												
Yes	2	(8)	2	(6)	8	(6)	3	(6)	2	(15)	17	(7)
No	22	(92)	30	(94)	118	(94)	51	(94)	11	(85)	232	(93)
Loss/repossession of assets/personal assets												
Yes	2	(9)	1	(3)	8	(7)	4	(8)	0	(0)	15	(7)
No	20	(91)	30	(97)	100	(93)	44	(92)	13	(100)	207	(93)
Life is taken over/gambling put ahead of												
Yes	3	(14)	1	(3)	7	(6)	2	(4)	1	(8)	14	(6)
No	19	(86)	30	(97)	101	(94)	46	(96)	12	(92)	208	(94)
Never at home/stay out late/no family time												
Yes	3	(13)	3	(9)	9	(7)	1	(2)	0	(0)	16	(6)
No	21	(88)	29	(91)	117	(93)	53	(98)	13	(100)	233	(94)
Loss of trust and respect/lying/deceit												
Yes	1	(5)	2	(6)	7	(6)	2	(4)	1	(8)	13	(6)
No	21	(95)	29	(94)	101	(94)	46	(96)	12	(92)	209	(94)
Need to borrow money/remortgage their house												
Yes	0	(0)	0	(0)	3	(3)	8	(17)	0	(0)	11	(5)
No	22	(100)	31	(100)	105	(97)	40	(83)	13	(100)	211	(95)
Behaviour/personality/emotional changes												
Yes	1	(5)	0	(0)	7	(6)	1	(2)	1	(8)	10	(5)
No	21	(95)	31	(100)	101	(94)	47	(98)	12	(92)	212	(95)
Lose everything/devastating for the household												
Yes	0	(0)	1	(3)	7	(6)	2	(4)	0	(0)	10	(5)
No	22	(100)	30	(97)	101	(94)	46	(96)	13	(100)	212	(95)
Get evicted/lose house												
Yes	0	(0)	0	(0)	6	(6)	3	(6)	0	(0)	9	(4)
No	22	(100)	31	(100)	102	(94)	45	(94)	13	(100)	213	(96)
Loss of job/livelihood/unable to work/affects work												
Yes	0	(0)	0	(0)	5	(5)	3	(6)	0	(0)	8	(4)
No	22	(100)	31	(100)	103	(95)	45	(94)	13	(100)	214	(96)
Not looking after themselves/poor appearance/poor health												
Yes	1	(5)	0	(0)	4	(4)	2	(4)	1	(8)	8	(4)
No	21	(95)	31	(100)	104	(96)	46	(96)	12	(92)	214	(96)
Burglary/stealing/criminal activity												
Yes	0	(0)	3	(10)	3	(3)	1	(2)	0	(0)	7	(3)
No	22	(100)	28	(90)	105	(97)	47	(98)	13	(100)	215	(97)
Grumpy/bad tempered												
Yes	0	(0)	1	(3)	3	(3)	1	(2)	0	(0)	5	(2)
No	22	(100)	30	(97)	105	(97)	47	(98)	13	(100)	217	(98)
Loss of self-esteem/confidence												
Yes	0	(0)	0	(0)	5	(5)	0	(0)	0	(0)	5	(2)
No	22	(100)	31	(100)	103	(95)	48	(100)	13	(100)	217	(98)
Alcohol/drug abuse												
Yes	0	(0)	0	(0)	2	(2)	1	(2)	0	(0)	3	(1)
No	22	(100)	31	(100)	106	(98)	47	(98)	13	(100)	219	(99)
Sets a bad example to others												
Yes	0	(0)	0	(0)	1	(1)	1	(2)	0	(0)	2	(1)
No	22	(100)	31	(100)	107	(99)	47	(98)	13	(100)	220	(99)
Lose friends/become withdrawn												
Yes	0	(0)	0	(0)	1	(1)	0	(0)	0	(0)	1	(0)
No	22	(100)	31	(100)	107	(99)	54	(100)	13	(100)	227	(100)

Table B9: Treatment service providers by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
0800 Telephone helpline												
Yes	37	(57)	12	(55)	4	(22)	8	(50)	12	(43)	73	(49)
No	28	(43)	10	(45)	14	(78)	8	(50)	16	(57)	76	(51)
Counsellor												
Yes	7	(11)	2	(9)	3	(17)	3	(19)	3	(11)	18	(12)
No	58	(89)	20	(91)	15	(83)	13	(81)	25	(89)	131	(88)
Gamblers Anonymous												
Yes	10	(15)	0	(0)	3	(17)	1	(6)	2	(7)	16	(11)
No	55	(85)	22	(100)	15	(83)	15	(94)	26	(93)	133	(89)
Church												
Yes	3	(5)	4	(18)	3	(17)	1	(6)	2	(7)	13	(9)
No	62	(95)	18	(82)	15	(83)	15	(94)	26	(93)	136	(91)
GP, practice nurse or other health professional												
Yes	4	(6)	0	(0)	5	(28)	1	(6)	1	(4)	11	(7)
No	61	(94)	22	(100)	13	(72)	15	(94)	27	(96)	138	(93)
Other unspecified organisations												
Yes	2	(3)	3	(14)	1	(6)	1	(6)	2	(7)	9	(6)
No	63	(97)	19	(86)	17	(94)	15	(94)	26	(93)	140	(94)
Citizens Advice Bureau												
Yes	5	(8)	0	(0)	0	(0)	1	(6)	2	(7)	8	(5)
No	60	(92)	22	(100)	18	(100)	15	(94)	26	(93)	141	(95)
Other specified organisations												
Yes	1	(2)	1	(5)	0	(0)	3	(19)	2	(7)	7	(5)
No	64	(98)	21	(95)	18	(100)	13	(81)	26	(93)	142	(95)
Gambling organisations spec. and unspec.												
Yes	1	(2)	0	(0)	0	(0)	1	(6)	2	(7)	4	(3)
No	64	(98)	22	(100)	18	(100)	15	(94)	26	(93)	145	(97)
Government department												
Yes	0	(0)	0	(0)	1	(6)	0	(0)	2	(7)	3	(2)
No	65	(100)	22	(100)	17	(94)	16	(100)	26	(93)	146	(98)
Budget advisor												
Yes	0	(0)	1	(5)	1	(6)	0	(0)	0	(0)	2	(1)
No	65	(100)	21	(95)	17	(94)	16	(100)	28	(100)	147	(99)
Look in the phone book												
Yes	0	(0)	0	(0)	0	(0)	1	(6)	0	(0)	1	(1)
No	65	(100)	22	(100)	18	(100)	15	(94)	28	(100)	148	(99)
Internet site												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	65	(100)	22	(100)	18	(100)	16	(100)	28	(100)	149	(100)

Table B10: Treatment service providers by age group

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
0800 Telephone helpline												
Yes	6	(100)	8	(53)	44	(52)	10	(29)	5	(50)	73	(49)
No	0	(0)	7	(47)	40	(48)	24	(71)	5	(50)	76	(51)
Counsellor												
Yes	0	(0)	3	(20)	9	(11)	5	(15)	1	(10)	18	(12)
No	6	(100)	12	(80)	75	(89)	29	(85)	9	(90)	131	(88)
Gamblers Anonymous												
Yes	0	(0)	0	(0)	8	(10)	7	(21)	1	(10)	16	(11)
No	6	(100)	15	(100)	76	(90)	27	(79)	9	(90)	133	(89)
Church												
Yes	0	(0)	1	(7)	6	(7)	4	(12)	2	(20)	13	(9)
No	6	(100)	14	(93)	78	(93)	30	(88)	8	(80)	136	(91)
GP, practice nurse or other health professional												
Yes	0	(0)	1	(7)	7	(8)	3	(9)	0	(0)	11	(7)
No	6	(100)	14	(93)	77	(92)	31	(91)	10	(100)	138	(93)
Other unspecified organisations												
Yes	0	(0)	0	(0)	8	(10)	1	(3)	0	(0)	9	(6)
No	6	(100)	15	(100)	76	(90)	33	(97)	10	(100)	140	(94)
Citizens Advice Bureau												
Yes	0	(0)	0	(0)	4	(5)	4	(12)	0	(0)	8	(5)
No	6	(100)	15	(100)	80	(95)	30	(88)	10	(100)	141	(95)
Other specified organisations												
Yes	0	(0)	1	(7)	3	(4)	3	(9)	0	(0)	7	(5)
No	6	(100)	14	(93)	81	(96)	31	(91)	10	(100)	142	(95)
Gambling organisations spec. and unspec.												
Yes	0	(0)	1	(7)	3	(3)	0	(0)	0	(0)	4	(3)
No	6	(100)	14	(93)	91	(97)	34	(100)	10	(100)	155	(97)
Government department												
Yes	0	(0)	2	(13)	0	(0)	0	(0)	1	(10)	3	(2)
No	6	(100)	13	(87)	84	(100)	34	(100)	9	(90)	146	(98)
Budget advisor												
Yes	0	(0)	1	(7)	1	(1)	0	(0)	0	(0)	2	(1)
No	6	(100)	14	(93)	83	(99)	34	(100)	10	(100)	147	(99)
Look in the phone book												
Yes	0	(0)	0	(0)	1	(1)	0	(0)	0	(0)	1	(1)
No	6	(100)	15	(100)	83	(99)	34	(100)	10	(100)	148	(99)
Internet site												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	6	(100)	15	(100)	84	(100)	34	(100)	10	(100)	149	(100)

Table B11: Barriers to referring others to treatment services providers by ethnicity

	Samoan		Tongan		Cook Island		Niuean		Other Pacific		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Never heard of them/not sure what they do												
Yes	12	(28)	5	(22)	2	(13)	2	(25)	4	(22)	25	(23)
No	31	(72)	18	(78)	13	(87)	6	(75)	14	(78)	82	(77)
Would not be my preference/would prefer others												
Yes	4	(9)	5	(22)	1	(7)	0	(0)	3	(17)	13	(12)
No	39	(91)	18	(78)	14	(93)	8	(100)	15	(83)	94	(88)
Too impersonal/no human contact/not face-to-face												
Yes	3	(7)	1	(4)	2	(13)	1	(13)	3	(17)	10	(9)
No	40	(93)	22	(96)	13	(87)	7	(88)	15	(83)	97	(91)
Wouldn't be comfortable referring anybody to a help												
Yes	4	(9)	1	(4)	1	(7)	1	(13)	1	(6)	8	(7)
No	39	(91)	22	(96)	14	(93)	7	(88)	17	(94)	99	(93)
Depends on individual/degree of problem												
Yes	4	(9)	1	(4)	1	(7)	0	(0)	1	(6)	7	(7)
No	39	(91)	22	(96)	14	(93)	8	(100)	17	(94)	100	(93)
Don't trust them/lack integrity												
Yes	2	(5)	1	(4)	2	(13)	1	(13)	1	(6)	7	(7)
No	41	(95)	22	(96)	13	(87)	7	(88)	17	(94)	100	(93)
Not effective/wouldn't work/not likely to provide help												
Yes	3	(7)	1	(4)	2	(13)	0	(0)	0	(0)	6	(6)
No	40	(93)	22	(96)	13	(87)	8	(100)	18	(100)	101	(94)
Need willpower for internet/self-help won't work												
Yes	1	(2)	1	(4)	2	(13)	0	(0)	2	(11)	6	(6)
No	42	(98)	22	(96)	13	(87)	8	(100)	16	(89)	101	(94)
Not a health issue/medical problem/not a doctor's job												
Yes	3	(7)	1	(4)	2	(13)	0	(0)	0	(0)	6	(6)
No	40	(93)	22	(96)	13	(87)	8	(100)	18	(100)	101	(94)
Too daunting/threatening/scary/hard												
Yes	2	(5)	0	(0)	1	(7)	1	(13)	1	(6)	5	(5)
No	41	(95)	23	(100)	14	(93)	7	(88)	17	(94)	102	(95)
Gambler might not think they have a problem/in denial												
Yes	1	(2)	1	(4)	1	(7)	1	(13)	1	(6)	5	(5)
No	42	(98)	22	(96)	14	(93)	7	(88)	17	(94)	102	(95)
Too personal/intrusive/no privacy..												
Yes	1	(2)	0	(0)	0	(0)	1	(13)	2	(11)	4	(4)
No	42	(98)	23	(100)	15	(100)	7	(88)	16	(89)	103	(96)
Need internet access/computer competency												
Yes	3	(7)	0	(0)	1	(7)	0	(0)	0	(0)	4	(4)
No	40	(93)	23	(100)	14	(93)	8	(100)	18	(100)	103	(96)
Don't have skills/training/qualifications												
Yes	0	(0)	1	(4)	0	(0)	0	(0)	1	(6)	2	(2)
No	43	(100)	22	(96)	15	(100)	8	(100)	17	(94)	105	(98)
It costs money/is too expensive												
Yes	0	(0)	1	(4)	1	(7)	0	(0)	0	(0)	2	(2)
No	43	(100)	22	(96)	14	(93)	8	(100)	18	(100)	105	(98)
Might not provide appropriate language/cultural												
Yes	2	(5)	0	(0)	0	(0)	0	(0)	0	(0)	2	(2)
No	41	(95)	23	(100)	15	(100)	8	(100)	18	(100)	105	(98)
Don't think they would go to/use that service												
Yes	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
No	42	(98)	23	(100)	15	(100)	8	(100)	18	(100)	106	(99)
Might encourage them to gamble more/start another habit												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	43	(100)	23	(100)	15	(100)	8	(100)	18	(100)	107	(100)

Table B12: Barriers to referring others to treatment services providers by age

	15-17 years		18-24 years		25-44 years		45-64 years		65+ years		All Pacific	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Never heard of them/not sure what they do												
Yes	4	(21)	1	(6)	14	(29)	4	(25)	2	(33)	25	(23)
No	15	(79)	16	(94)	35	(71)	12	(75)	4	(67)	82	(77)
Would not be my preference/would prefer others												
Yes	3	(16)	1	(6)	5	(10)	3	(19)	1	(17)	13	(12)
No	16	(84)	16	(94)	44	(90)	13	(81)	5	(83)	94	(88)
Too impersonal/no human contact/not face-to-face												
Yes	1	(5)	2	(12)	7	(14)	0	(0)	0	(0)	10	(9)
No	18	(95)	15	(88)	42	(86)	16	(100)	6	(100)	97	(91)
Wouldn't be comfortable referring anybody to a help												
Yes	3	(16)	1	(6)	2	(4)	2	(13)	0	(0)	8	(7)
No	16	(84)	16	(94)	47	(96)	14	(88)	6	(100)	99	(93)
Depends on individual/degree of problem												
Yes	1	(5)	3	(18)	3	(6)	0	(0)	0	(0)	7	(7)
No	18	(95)	14	(82)	46	(94)	16	(100)	6	(100)	100	(93)
Don't trust them/lack integrity												
Yes	0	(0)	2	(12)	5	(10)	0	(0)	0	(0)	7	(7)
No	19	(100)	15	(88)	44	(90)	16	(100)	6	(100)	100	(93)
Not effective/wouldn't work/not likely to provide help												
Yes	3	(16)	1	(6)	1	(2)	0	(0)	1	(17)	6	(6)
No	16	(84)	16	(94)	48	(98)	16	(100)	5	(83)	101	(94)
Need willpower for internet/self-help won't work												
Yes	0	(0)	0	(0)	4	(8)	1	(6)	1	(17)	6	(6)
No	19	(100)	17	(100)	45	(92)	15	(94)	5	(83)	101	(94)
Not a health issue/medical problem/not a doctor's job												
Yes	1	(5)	1	(6)	3	(6)	1	(6)	0	(0)	6	(6)
No	18	(95)	16	(94)	46	(94)	15	(94)	6	(100)	101	(94)
Too daunting/threatening/scary/hard												
Yes	1	(5)	0	(0)	3	(6)	1	(6)	0	(0)	5	(5)
No	18	(95)	17	(100)	46	(94)	15	(94)	6	(100)	102	(95)
Gambler might not think they have a problem/in denial												
Yes	2	(11)	0	(0)	2	(4)	1	(6)	0	(0)	5	(5)
No	17	(89)	17	(100)	47	(96)	15	(94)	6	(100)	102	(95)
Too personal/intrusive/no privacy..												
Yes	0	(0)	2	(12)	2	(4)	0	(0)	0	(0)	4	(4)
No	19	(100)	15	(88)	47	(96)	16	(100)	6	(100)	103	(96)
Need internet access/computer competency												
Yes	0	(0)	0	(0)	3	(6)	0	(0)	1	(17)	4	(4)
No	19	(100)	17	(100)	46	(94)	16	(100)	5	(83)	103	(96)
Don't have skills/training/qualifications												
Yes	0	(0)	1	(6)	1	(2)	0	(0)	0	(0)	2	(2)
No	19	(100)	16	(94)	48	(98)	16	(100)	6	(100)	105	(98)
It costs money/is too expensive												
Yes	0	(0)	0	(0)	1	(2)	0	(0)	1	(17)	2	(2)
No	19	(100)	17	(100)	48	(98)	16	(100)	5	(83)	105	(98)
Might not provide appropriate language/cultural												
Yes	0	(0)	0	(0)	2	(4)	0	(0)	0	(0)	2	(2)
No	19	(100)	17	(100)	47	(96)	16	(100)	6	(100)	105	(98)
Don't think they would go to/use that service												
Yes	0	(0)	0	(0)	0	(0)	1	(6)	0	(0)	1	(1)
No	19	(100)	17	(100)	49	(100)	15	(94)	6	(100)	106	(99)
Might encourage them to gamble more/start another habit												
Yes	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
No	19	(100)	17	(100)	49	(100)	16	(100)	6	(100)	107	(100)

APPENDIX 6
Data Tables C: Pacific Islands Families Study data

Table C1: Mothers' gambling participation in Year 6

Gambler Type	Samoan		Cook Island		Niuean		Tongan		Other Pacific		Non Pacific		All Mothers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Non-gambler	269	(61)	105	(63)	28	(62)	156	(74)	18	(64)	38	(58)	614	(64)
Lotto/Keno only	133	(30)	43	(26)	7	(16)	48	(23)	7	(25)	13	(20)	251	(26)
Continuous	42	(9)	19	(11)	10	(22)	7	(3)	3	(11)	15	(23)	96	(10)

Table C2: Mothers' gambling participation in Year 9

Gambler Type	Samoan		Cook Island		Niuean		Tongan		Other Pacific		Non Pacific		All Mothers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Non-gambler	205	(53)	64	(41)	19	(44)	112	(57)	10	(45)	31	(49)	441	(51)
Lotto/Keno only	124	(32)	58	(37)	16	(37)	49	(25)	8	(36)	23	(37)	278	(32)
Continuous	60	(15)	33	(21)	8	(19)	34	(17)	4	(18)	9	(14)	148	(17)

Table C3: Fathers' gambling participation in Year 6

Gambler Type	Samoan		Cook Island		Niuean		Tongan		Other Pacific		Non Pacific		All Fathers	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Non-gambler	186	(76)	31	(57)	17	(68)	128	(67)	11	(65)	26	(67)	415	(70)
Lotto/Keno only	45	(18)	12	(22)	6	(24)	27	(14)	4	(24)	6	(15)	101	(17)
Continuous	14	(6)	11	(20)	2	(8)	36	(19)	2	(12)	7	(18)	75	(13)

Table C4: Children's gambling participation in Year 9

Gambler	Samoan		Cook Island		Niuean		Tongan		Other Pacific		All Children	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Yes	162	(41)	52	(34)	20	(47)	69	(36)	24	(29)	327	(38)
No	234	(59)	101	(66)	23	(53)	125	(64)	60	(71)	543	(62)

Table C5: Mothers' gambling and general health status in Year 6

General health status	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	565	(63)	330	(37)	895	(100)	1.00	
Fair	66	(69)	30	(31)	96	(100)	0.78	(0.50, 1.22)
Poor	7	(70)	3	(30)	10	(100)	0.73	(0.19, 2.86)

General health status	Not gambled on continuous modes		Gambled on continuous modes		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	810	(91)	85	(10)	895	(100)	1.00	
Fair	81	(84)	15	(16)	96	(100)	1.76	(0.97, 3.20)
Poor	8	(80)	2	(20)	10	(100)	2.38	(0.50, 11.40)

General health status	Spend < \$20 per week		Spend ≥ \$20 per week		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	232	(70)	98	(30)	330	(100)	1.00	
Fair	20	(67)	10	(33)	30	(100)	1.18	(0.53, 2.62)
Poor	1	(33)	2	(67)	3	(100)	4.73	(0.42, 52.82)

General health status	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Good	228	(83)	46	(17)	274	(100)	1.00	
Fair	22	(96)	1	(4)	23	(100)	0.23	(0.03, 1.71)
Poor	2	(67)	1	(33)	3	(100)	2.48	(0.22, 27.91)

No statistical significance attained

Table C6: Mother's gambling and physical activity in Year 6

	Non-gambler		Gambler (any mode)		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Physically active								
No	314	(65)	168	(35)	482	(100)	1.00	
Yes	322	(62)	195	(38)	517	(100)	1.13	(0.87, 1.47)
	Not gambled on continuous modes		Gambled on continuous modes		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Physically active								
No	434	(90)	48	(10)	482	(100)	1.00	
Yes	463	(90)	54	(10)	517	(100)	1.05	(0.70, 1.59)
	Spend < \$20 per week		Spend ≥ \$20 per week		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Physically active								
No	121	(72)	47	(28)	168	(100)	1.00	
Yes	132	(68)	63	(32)	195	(100)	1.23	(0.78, 1.93)
	Zero PGSI score		Non-zero PGSI score		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Physically active								
No	112	(81)	27	(19)	139	(100)	1.00	
Yes	133	(86)	21	(14)	154	(100)	0.65	(0.35, 1.22)

No statistical significance attained

Table C7: Children's gambling, family cohesion, and self perception in Year 9

Variable Category	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Family cohesion								
Fair/OK	6	(55)	5	(45)	11	(100)	1.68	(0.49, 5.71)
Good	130	(59)	90	(41)	220	(100)	1.40	(0.93, 2.09)
Very good	276	(62)	166	(38)	442	(100)	1.21	(0.85, 1.73)
Excellent (ref level)	129	(67)	64	(33)	193	(100)	1.00	
Self-Description Questionnaire #								
Physical abilities								
Low	192	(62)	118	(38)	310	(100)	1.00	
High	351	(63)	209	(37)	560	(100)	0.97	(0.73, 1.29)
Relations with parents								
Low	193	(62)	119	(38)	312	(100)	1.00	
High	348	(63)	207	(37)	555	(100)	0.96	(0.72, 1.28)
Relations with peers								
Low	198	(60)	130	(40)	328	(100)	1.00	
High	343	(64)	195	(36)	538	(100)	0.87	(0.65, 1.15)
School (ability and enjoyment)								
Low	175	(65)	93	(35)	268	(100)	1.00	
High	368	(61)	234	(39)	602	(100)	1.20	(0.89, 1.62)
Self opinion								
Low	257	(62)	155	(38)	412	(100)	1.00	
High	280	(62)	170	(38)	450	(100)	1.01	(0.76, 1.33)

Scores were split at the median unless specific ranges are provided in the literature

No statistical significance attained

Table C8: Children's gambling and after-school activities in Year 9

Variable Category	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Do homework after school								
Never	27	(56)	21	(44)	48	(100)	1.00	
Less than once a week	33	(55)	27	(45)	60	(100)	1.05	(0.49, 2.26)
About once a week	82	(63)	48	(37)	130	(100)	0.75	(0.38, 1.47)
Several times a week	120	(63)	71	(37)	191	(100)	0.76	(0.40, 1.44)
Everyday or almost everyday	273	(63)	159	(37)	432	(100)	0.75	(0.41, 1.37)
Play sports after school								
Never	125	(67)	62	(33)	187	(100)	1.00	
Less than once a week	54	(59)	38	(41)	92	(100)	1.42	(0.85, 2.37)
About once a week	86	(61)	54	(39)	140	(100)	1.27	(0.80, 2.00)
Several times a week	124	(63)	74	(37)	198	(100)	1.20	(0.79, 1.83)
Everyday or almost everyday	150	(60)	99	(40)	249	(100)	1.33	(0.90, 1.98)
Go to after-school care								
Never	468	(63)	280	(37)	748	(100)	1.00	
Less than once a week	25	(63)	15	(38)	40	(100)	1.00	(0.52, 1.93)
About once a week	16	(64)	9	(36)	25	(100)	0.94	(0.41, 2.16)
Several times a week	11	(55)	9	(45)	20	(100)	1.37	(0.56, 3.34)
Everyday or almost everyday	18	(60)	12	(40)	30	(100)	1.11	(0.53, 2.35)
Belong to any sports teams/clubs								
No	280	(65)	150	(35)	430	(100)	1.00	
Yes	260	(60)	176	(40)	436	(100)	1.26	(0.96, 1.66)
Belong to any clubs/organisations not sports-related								
No	380	(63)	223	(37)	603	(100)	1.00	
Yes	159	(61)	102	(39)	261	(100)	1.09	(0.81, 1.47)

No statistical significance attained

Table C9: Children's gambling and home environment in Year 9

Variable Category	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Have computer at home								
No	163	(60)	108	(40)	271	(100)	1.00	
Yes	378	(63)	219	(37)	597	(100)	0.87	(0.65, 1.17)
Have access to Internet								
No	124	(60)	84	(40)	208	(100)	1.00	
Yes	242	(65)	129	(35)	371	(100)	0.79	(0.55, 1.12)
Number of people to share bedroom with								
[1,2]	362	(63)	209	(37)	571	(100)	1.00	
[2,3]	123	(61)	80	(39)	203	(100)	1.13	(0.81, 1.57)
[3,11]	56	(60)	37	(40)	93	(100)	1.14	(0.73, 1.79)
Number of people to share bed with								
No one else	242	(64)	134	(36)	376	(100)	1.00	
One (1) other	141	(62)	87	(38)	228	(100)	1.11	(0.79, 1.57)
Two (2) others	34	(62)	21	(38)	55	(100)	1.12	(0.62, 2.00)

No statistical significance attained

Table C10: Children's gambling and parental guidance in Year 9

	Non-gambler		Gambler		Total		Univariate odds ratio	
	N	(%)	N	(%)	N	(%)	OR	(95% CI)
Parents check whether homework done								
Never	44	(62)	27	(38)	71	(100)	1.00	
Rarely	33	(57)	25	(43)	58	(100)	1.23	(0.61, 2.50)
Sometimes	212	(62)	130	(38)	342	(100)	1.00	(0.59, 1.69)
Often	244	(63)	142	(37)	386	(100)	0.95	(0.56, 1.60)
Parents require work/chores at home								
Never	19	(59)	13	(41)	32	(100)	1.00	
Rarely	39	(65)	21	(35)	60	(100)	0.79	(0.33, 1.90)
Sometimes	228	(61)	148	(39)	376	(100)	0.95	(0.45, 1.98)
Often	252	(64)	143	(36)	395	(100)	0.83	(0.40, 1.73)

No statistical significance attained