

FINAL REPORT

**An Exploration of Youth Participation in Gambling
& the Impact of Problem Gambling on
Young People in New Zealand**

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EXECUTIVE SUMMARY

The overall aim of this project was to explore youth participation in gambling and the impact of problem gambling on young people in New Zealand, including patterns and trends and identifiable risk and resiliency factors. The project also sought to identify key components of likely best practice approaches for providing problem gambling services to young people. The study adopted a mixed-methods approach and consisted of a literature review, a scoping exercise to determine datasets appropriate for a secondary analysis, a secondary analysis of the Youth'07 database, and key informant interviews with individuals working within youth gambling and related fields.

The Youth'07 database was identified as the most suitable for a secondary analysis. Subsequent analysis of this dataset revealed that approximately one-quarter of participating students had gambled in the past year. Males were more likely to have gambled than females and there was a trend for the proportion reporting gambling to increase with age. Less than one-tenth of the entire sample indicated that they had gambled in the past four weeks and it appears that students do not typically spend much money or time on gambling activities. With regard to the modes/activities that students had gambled on, the most 'popular' (i.e. those that were endorsed the most) included bets with friends, Instant Kiwi (scratchies), cards or coins, and Lotto (including Strike, Powerball etc). Significant gender differences were observed in relation to the modes of gambling on which young people were gambling and there also were some trends noted in relation to age. The most frequently cited reasons for gambling centred on having fun and winning money. Less frequently endorsed reasons related to issues such as escapism and excessive gambling.

Item response theory was used to model the probability of gambling behaviours along a latent dimension of 'less unhealthy' to 'more unhealthy' gambling behaviours, allowing the development of a framework for evaluating which gambling-related behaviours are more severe.

'Gambling to relax', 'gambling to feel better about myself', and 'gambling to forget about things' were all identified as 'red flags' or early indicators that gambling behaviour is moving towards unhealthy levels. School connectedness was identified as fulfilling a protective function with regard to unhealthy gambling behaviour. A number of demographic variables, including earning more than \$100 per week, being male, gambling because friends do, and gambling because family do, were all significantly associated with increased risk of unhealthy gambling. Two types of gambling were also found to be particularly risky for young people - even when other 'risk' and 'protective' variables were controlled for; gambling at a casino (on EGMs or tables) and gambling over the internet were both significantly associated with an increased risk of unhealthy gambling behaviour.

Key components of best practice approaches for providing problem gambling services to young people were explored via interviews with key informants from the AOD, gambling and youth sectors. Despite potential widespread exposure to gambling with New Zealand, and a lack of available prevalence data, there was a general perception that gambling was not a significant problem for youth in this country, as evidenced by the lack of presentations to treatment and other health services (although it was recognised that young people may face barriers in accessing help in this regard). Moreover, current service provision was seen to be geared towards adult problem gamblers. Youth gambling behaviour was seen to differ from that of adults, and was viewed as episodic by some; gambling on-line was highlighted as an area of concern. A lack of recognition of problematic gambling behaviour by both youth and adults was felt to create barriers for young people accessing help.

The lack of national and international examples of best practice models of working with adolescent gamblers was highlighted by key informants. In considering key components for youth problem gambling services, there was a clear preference for working alongside existing providers and structures as a means of: addressing the current silo-based approach to service

delivery; streamlining young people's access to services; and, to ensure that resources are distributed in a cost-effective manner. A one-stop-shop model of service delivery was put forward as an effective way of working young people, with gambling services provided alongside other (family-inclusive) health and social services. However, the limitations of such an approach were also noted.

A 'by youth, for youth' philosophy was considered best practice, with services provided in a youth-centric environment. The involvement of young people in the planning and delivery of services (including taking on staffing and governance roles) was deemed important – as was a mix of older and younger staff able to engage, and identify with, the target audience. Core competencies for staff were seen as similar to those in other youth-related fields. Key informants reported that a range of delivery methods should be offered to youth, including phone-based, on-line, mobile, and drop-in services. Other key stakeholders considered important in addressing problem gambling, included schools, churches, GPs and youth organisations. A need for further education of youth was highlighted (e.g. on potential risks, help-seeking advice, etc.), and included targeting young children in schools.

Implications

The results outlined in this report indicate that a substantial proportion of young people do engage with gambling. Males appear to be more involved in gambling, in particular, they were more likely than their female counterparts: to have gambled in the past year, to have gambled in the past four weeks, to gamble on a wider variety of modes, and to spend more time and money gambling. This strong gender bias needs to be considered by those aiming to address the public health and intervention needs of young people for gambling. This research also identified some 'red flags' or early indicators that gambling behaviour is moving towards unhealthy levels: 'gambling to relax', 'gambling to feel better about myself', and 'gambling to forget about things'.

These indicators may be useful for health professionals (those working in youth health, education, and problem gambling health promotion or intervention services), as well as for youth themselves and their families/whānau. Findings from the key informant interviews also highlighted the importance of ensuring that key stakeholders are informed with regard to youth gambling, and the benefits of drawing on their skills, knowledge, and existing relationships with young people.

Youth indicated that they were participating in a number of modes that should theoretically be unavailable to them, due to legislation around age limits. Clearly, the availability and/or interest in a number of modes had a tendency to increase with age: there was a general trend for the proportions of students gambling on Instant Kiwi, Lotto (including Strike and Powerball etc), TAB betting, and Pub or club EGMs, to increase with age. It is apparent that attention needs to be paid to the availability of gambling to minors. This is particularly important when considering gambling modes that were shown to present an increased risk of unhealthy gambling behaviour – such as casino gambling (EGMs and tables) and gambling via the Internet. The roles of gambling policy and legislation, host responsibility, and education (of youth/parents/teachers etc), all need to be explored further with regard to the availability of gambling in general. A societal perception of gambling as being less severe than other youth risky behaviours may also be contributing to the availability and accessibility of gambling activities to adolescents; this was highlighted by key informants and is in line with the international literature (Fisher, 1999, Ipsos MORI, 2009, Felsher et al., 2003).

Social connectedness was shown to have an important role in moderating or protecting against unhealthy gambling behaviour in youth. Of particular importance was connectedness to a school environment. Interviews with key informants also highlighted that schools may be an important stakeholder, not only in relation to providing a setting for the delivery of education programmes, but also in signposting young people to sources of additional support, where appropriate. Best

practice guidelines for mental health promotion programmes highlight the importance of intervening in multiple settings, with a focus on schools as a key setting for interventions (Centre for Addiction and Mental Health, 2011). However, the role and potential for schools to have a positive impact on their student's gambling specifically requires further investigation and is not well understood.

The research has identified the lack of best practice information available with regard to the provision of gambling services and interventions to young people. However, those working in gambling and related fields highlighted the commonalities across different disciplines in working with youth, and the appropriateness of drawing on these when developing gambling services for young people. This is supported in the literature (Derevensky and Gupta, 2004, Brezing et al., 2010, Dickson et al., 2002). It appears that work being undertaken in Canada (Dickson et al., 2002, Gupta and Derevensky, 2000, Korn et al., 2006) may currently provide the best opportunity for learning in this regard, although its applicability to the New Zealand context would clearly need to be considered.

1. INTRODUCTION AND BACKGROUND

The overall aim of this project was to explore youth participation in gambling and the impact of problem gambling on young people in New Zealand, including patterns and trends of youth gambling and identifiable risk and resiliency factors. The project also aimed to explore and identify key components of likely best practice approaches for providing problem gambling services to young people. The study adopted a mixed-methods approach and consisted of the following four phases:

- *Phase One:* Review of Literature;
- *Phase Two:* Review of Available Datasets for Relevance to Youth Gambling;
- *Phase Three:* Secondary Analysis of Youth Data from an Existing Dataset; and,
- *Phase Four:* Key Informant Interviews.

Further details on each phase, including specific aims and objectives, can be found in Chapter 2 (Phase One), Chapter 3 (Phase Two), Chapters 4 - 6 (Phase Three), and Chapter 7 (Phase Four). An overview of the research findings and implications for key stakeholders such as gambling venue operators, problem gambling intervention services, family/whānau, schools/teachers, and those working in policy are can be found in Chapter 8.

2. PHASE ONE – REVIEW OF THE LITERATURE

This phase aimed to provide an up-to-date summary of information from both National and International literature and inform the development of Phases Two and Three. Topics of particular interest included:

1. Youth participation in gambling;
2. Likely impacts and consequences of gambling in young people, in the present and later in life;
3. Pathways and mechanisms for parental or familial gambling to affect young people;
4. Risk and resiliency factors likely to be relevant for exacerbating or minimising the impact of gambling on young people;
5. The relevance of literature on children of parents with mental illness for the problem gambling sector; and,
6. Best practice and characteristics of youth specific interventions, public health initiatives and programmes.

Where gambling or problem gambling specific literature was not available, mental health, psychology and addiction literature was reviewed in relation to its likely applicability or relevance for gambling and young people (this was particularly relevant to point six above).

2.1 Methods

Literature searches were performed using the following databases for the period up to December 2010: Medline, Psycinfo, Scopus, Embase. In addition, a search for peer reviewed and grey literature was undertaken via Google Scholar and through accessing relevant websites (e.g. Government departments or gambling-related sites). Keywords utilised included youth and gambling and adolescent and gambling¹. From the results, publications of relevance were selected and reviewed. While this work has involved extensive literature searches and the information has been selected and reviewed objectively, this is a narrative rather than a systematic review.

¹ The literature search employed variations of these words.

There is no standardised definition of 'young people' within the gambling field (Bellringer et al., 2003). For the purpose of this review, young people were defined as being under the age of 25 years². The terms youth, young people, and adolescents are used interchangeably throughout the document to reflect this age bracket, and incorporate the wide range of phrases employed by researchers in the field, including: young adults, children, teens, juveniles, and teenagers (Valentine, 2008). A number of terms and definitions have also been employed with regard to the classification of gambling behaviour. For example, at-risk, potential pathological, probable pathological, problem, and pathological are all terms that have been cited within the youth gambling literature. This lack of consistency in gambling taxonomies can complicate the comparison of findings from different studies. Throughout this review, we have kept to the terminology of the original authors, where possible.

2.2 Key findings from the Literature Review

Gambling has become a widely available activity in today's society (Turchi and Derevensky, 2006, Hardoon and Derevensky, 2002). Evidence suggests that it has become a popular past-time not only for adults, but also for children and young people (Hardoon and Derevensky, 2002, Turchi and Derevensky, 2006, Splevins et al., 2010, Jacobs, 2000, Gupta and Derevensky, 1998a, Derevensky and Gupta, 2000). Whilst for many youth involvement in gambling does not result in problematic behaviour, others go on to experience serious problems (Dickson et al., 2003).

It has been reported that the study of youth gambling is somewhat undeveloped (Blinn-Pike et al., 2010, Huang and Boyer, 2007, McGowan et al., 2000, Derevensky and Gupta, 2004) with much of the literature to date focussed on the gambling behaviour of adults. This was apparent when undertaking this review, in that no youth gambling literature prior to 1985 was identified,

² Literature for this age range was sought, where possible. In some cases, the original source categorised age ranges outside this (e.g. 18-30 years); where this occurred, this is indicated in the text.

an issue that has been highlighted elsewhere (Blinn-Pike et al., 2010). It has also been recognised that there is far less research in this field compared to that which has explored other youth risk behaviours such as substance use (Blinn-Pike et al., 2010).

A recent review of the research on adolescent gambling identified that the majority of research on youth gambling is undertaken by a small group of researchers in Canada, the United States and Britain. Other key findings included that adolescent gambling research is: most commonly investigated with respect to alcohol use; not ethnically diverse; and, mostly quantitative, descriptive and empirically based (Blinn-Pike et al., 2010). Others have highlighted that much of the research conducted to date has been concerned with the identification of the prevalence of youth gambling and problem gambling (Derevensky and Gupta, 2004, McGowan et al., 2000), although more recently there is a growing body of research which is designed to identify the risk factors associated with the behaviour (Jackson et al., 2008). The influence of a young person's socio-economic status on problematic gambling behaviour has received limited attention in the literature (McGowan et al., 2000, Welte et al., 2008), as has religion (Welte et al., 2008) and ethnicity (Blinn-Pike et al., 2010, McGowan et al., 2000, Rossen, 2008).

In the absence of extensive youth-specific data, knowledge of adult gambling is often applied to adolescent gamblers (McGowan et al., 2000). This clearly has limitations, given the not insubstantial differences between the two groups in relation to patterns of gambling and response to the behaviour, as well as more general developmental differences. Moreover, whilst it is important to investigate problem gambling amongst young people in its own right – it is also interesting to note that adolescence may be an important period in the development of problem gambling later in life – as evident in studies amongst adult problem gamblers which have identified that most of these individuals began gambling at a young age (Shaffer and Hall, 2001, Winters et al., 2002).

2.2.1 Prevalence of youth gambling and problem gambling

There are a vast range of adolescent gambling prevalence studies that have been undertaken over the past 25 years, across different countries, and incorporating general populations as well as youth specifically. It is beyond the scope of this review to provide a detailed breakdown of these; instead this section presents an overview of rates of youth gambling and problem gambling and a selection of representative studies from various countries, incorporating different youth populations and a range of screening instruments.

A review of studies of young people's gambling in the UK and North America found that levels of lifetime gambling amongst young people ranged from 76-91 percent (McGowan et al., 2000). This range is similarly reflected in Table 1 which displays rates of gambling from various countries³. It has been estimated that between 4-8% of young people gamble at problem/pathological gambling levels (Jackson et al., 2008, Haroon and Derevensky, 2002) and a further 10-15% are at risk of developing a gambling problem (Turchi and Derevensky, 2006, Shaffer and Hall, 1996). It has also been suggested that youth gambling may be somewhat 'polarised' – with young people either abstaining from gambling altogether, or becoming involved in more problematic gambling – due to the lower levels of non-problem gamblers, but higher levels of non-gamblers and problem gamblers than adults (Huang and Boyer, 2007). The proportion of youth involved in gambling has also been shown to increase with age (Rossen et al., 2009).

Rates of youth problem gambling have often been found to be higher than the rates identified for adults (Williams et al., 2008, Huang and Boyer, 2007, Shaffer and Hall, 1996, Welte et al., 2008), with some estimating them to be more than double those of adults (Jackson et al., 2008, Gupta and Derevensky, 1998a, Lesieur et al., 1991), or up to three times as high (Rigbye,

³ It should be noted that some of the gambling rates are based on 'past year' gambling, whereas others relate to 'lifetime' or 'last week' gambling behaviour.

2010). In a Canadian survey of over 5000 young people aged 15-34 years, it was reported that youth were nearly 1.5 times as likely as adults to be either 'problem' or 'moderate-risk' gamblers. Other studies have identified rates of youth problem gambling as being 2-4 times higher (Gupta and Derevensky, 2000, Blinn-Pike et al., 2010, Jackson et al., 2008, Delfabbro et al., 2005).

It is important to note that measurements of the prevalence of problem gambling amongst youth have produced differing results (Welte et al., 2008, Derevensky et al., 2003, Valentine, 2008, Moodie and Finnigan, 2006). This may be due to differences in the definitions of problem gambling that have been utilised (Welte et al., 2008) as well as geographical differences (Welte et al., 2008, Derevensky et al., 2003, Fisher, 1999), different instruments⁴ being employed (Derevensky et al., 2003, Jackson et al., 2008, Valentine, 2008, Rossen, 2008) and the adoption of varying sampling procedures (Derevensky et al., 2003, Valentine, 2008). For example, researchers from the UK found that the prevalence of problem gambling was significantly higher amongst young people residing by the sea, compared to those living inland, a result that was attributed to the greater accessibility to fruit machines via seaside arcades for these residents (Fisher, 1999). Other researchers have highlighted cross-cultural differences and the impact of different legislative frameworks in different countries (Moodie and Finnigan, 2006), as well as the inconsistent use of different terminology (Rossen, 2008). In spite of these issues, it has been claimed that the variability in youth problem gambling rates is much greater than that reported for adult problem gambling (Derevensky et al., 2003).

There have also been issues raised around the rates of problem gambling amongst youth having been inflated (Derevensky et al., 2003). This was investigated by Derevensky and colleagues (2003) who identified five core arguments utilised to support the proposition. These included: 1) if rates are as high as reported, it could be expected that more youth would be accessing treatment; 2) questions in the problem gambling screens may be misunderstood by

⁴ A range of screening instruments/tools have been utilised for the identification of problem gambling amongst young people. See Derevensky and Gupta (2006) and Blinn-Pike et al (2010) for further discussion of these.

youth; 3) given adult gamblers' greater access to 'high-stakes gambling', discrepancy in prevalence rates between adults and youth is 'illogical'; 4) overestimates may be due to scoring errors in instruments; 5) there is insufficient construct validity in adolescent screening instruments. Their 2003 paper discusses – and broadly discounts – these arguments and they conclude that whilst differences in prevalence rates may be due to a range of reasons (e.g. cultural factors), they are not a result of levels of problem gambling being over-represented (Derevensky et al., 2003).

Table 1 summarises prevalence rates from a range of international studies conducted in Canada, Scotland, Iceland, New Zealand, the US, Great Britain and Australia. As can be observed, these are reflective of the literature more broadly in that there is variance in the prevalence rates of problem gambling amongst young people across different countries.

Table 1: Prevalence of youth gambling and problem gambling across different countries

Study	Country	Population	Instruments /Measures (problem / pathological gambling)	Prevalence (Gambling)	Prevalence Rates (problem / pathological gambling)
Splevins et al., 2010	Australia	Secondary (private) school students 12-18 years (n=252)	<ul style="list-style-type: none"> • DSM-IV-MR-J • Gambling Attitudes Scale • SOGS 	<ul style="list-style-type: none"> • 81% past year 	<ul style="list-style-type: none"> • 6.7% Problem Pathological Gamblers (Note: all were male)
Ipsos MORI, 2009	Great Britain	School students 12-15 years (n=8958)	<ul style="list-style-type: none"> • DSM-IV-MR-J 	<ul style="list-style-type: none"> • 21% last-week gambling 	<ul style="list-style-type: none"> • 2% Problem gamblers
Ministry of Health, 2009	New Zealand	National household survey (n=12,488 aged 15+ years)	<ul style="list-style-type: none"> • Problem Gambling Severity Index (PGSI) 	<ul style="list-style-type: none"> • 25.3% last-year gambling (15-17yrs) 	<ul style="list-style-type: none"> • 0.4% Problem gamblers
Rossen, 2008	New Zealand	High school students aged 11-17 years (n=2,005)	<ul style="list-style-type: none"> • DSM-IV-MR-J 	<ul style="list-style-type: none"> • 65.4% past year 	<ul style="list-style-type: none"> • 3.8% Problem gamblers
Welte et al., 2008	US	Adolescents 14-21 years (n=2274)	<ul style="list-style-type: none"> • SOGS-RA • Diagnostic Interview Schedule for pathological gambling 	<ul style="list-style-type: none"> • 68% past year 	<ul style="list-style-type: none"> • 6.5% At-risk or problem gamblers • 2.1% Problem gamblers
Huang and Boyer, 2007	Canada	Youth aged 15-24 years (n=5666)	<ul style="list-style-type: none"> • The Canadian Problem Gambling Index 	<ul style="list-style-type: none"> • 61% past year 	<ul style="list-style-type: none"> • 3.55% Low-risk gamblers • 2.22% Moderate-risk or problem gamblers
Ministry of Health, 2006	New Zealand	National household survey (n=12,929 aged 15+ years)	<ul style="list-style-type: none"> • Unnamed gambling screen⁵ 	<ul style="list-style-type: none"> • 58.8% last-year gambling (15-24yrs) 	<ul style="list-style-type: none"> • 1.5% Problem gamblers

⁵ It was reported that a new (unvalidated) screen was utilised for this survey.

Moodie and Finnigan, 2006	Scotland	Primary and secondary school students 11-16 years (n=2043)	• DSM-IV-J	• 80% past year	• 9% Problem gamblers • 15.1% At-risk Gamblers
Ólason et al., 2006	Iceland	Primary school students 13-15 years (n=3511)	• DSM-IV-MR-J • SOGS-RA	• 93% lifetime • 70% past year	• 1.9% Problem gamblers (DSM-IV-MR-J) • 2.8% Problem gamblers (SOGS-RA)
Ste-Marie et al., 2006	Canada	High school students 12-17 years (n=1044)	• DSM-IV-MR-J	• 71% past year	• 4.5% Probable Pathological Gamblers • 9.7% At-risk Gamblers
Delfabbro et al., 2005	Australia	School students aged 11-19 years (n=926)	• DSM-IV-J • Victorian Gambling Screen (VGS)	• 70% past year	• 4.4% Problem gamblers (DSM-IV-J) • 3.3% Problem gamblers (VGS)
Fisher, 1999	Great Britain	School students aged 12-15 years (n=9774)	• DSM-IV-MR-J	• n/a 6	• 5.6% Problem gamblers
Gupta and Derevensky, 1998a	Canada	High school students 12-17 years (n=817)	• DSM-IV-J (4/9 criteria)	• 80.2% past year	• 4.7% Pathological Gamblers

2.2.1.1 New Zealand

The gap in New Zealand-based information regarding prevalence of youth gambling has been identified previously (Bellringer et al., 2003, Rossen et al., 2009) and in 2003 it was recommended that research be undertaken to measure the involvement of New Zealand youth in gambling as well as associated factors and gambling-related problems (Bellringer et al., 2003).

The first national survey of pathological gambling in this country, published in 1994, identified that 50% of those who were identified as problem or probable pathological gamblers (PPGs) were aged under 30 years, and the authors note that respondents in this age range had a much higher lifetime prevalence of probable pathological and problem gambling, compared to older respondents (Volberg and Abbott, 1994). Other, more recent, data suggest that gambling amongst young people is not commonplace in New Zealand, particularly when compared with older age groups (Department of Internal Affairs, 2008). In a study carried out in 2005, it was found that fewer teenagers (aged 15-19 years) participated in gambling than any other age

⁶ Rates were linked to specific gambling formats only, e.g. 75% had 'ever played' fruit machines and 53% had 'ever played' cards for money.

group, and that they took part in less gambling activities, and were less likely to spend over \$100 annually (28% compared to 55% of all participants) (Department of Internal Affairs, 2008).

Findings from the 2002/03 Health Survey in New Zealand revealed that 59% of young people aged 15-24 years had gambled in the 12 months previous (Ministry of Health, 2006). Whilst gambling rates were higher in older age groups (e.g. those aged 45-54 years), it was reported that participation rates for non-casino electronic gambling machines (EGMs) were highest amongst 15-24 year olds. In terms of problem gambling, 1.2% of the overall sample was identified as problem gamblers, with slightly higher rates (1.5%) amongst the 15-24 age group. Moreover, younger gamblers comprised one fifth of problem gamblers. Whilst the risk of being a problem gambler was highest amongst adults aged 25-34, it was also noted as being 'relatively high' for young people in the sample (Ministry of Health, 2006).

In the subsequent 2006/07 Health Survey, it was reported that the prevalence of past-year gambling was 'fairly stable' across all age groups, although lower rates were identified amongst those aged 15-24 years (Ministry of Health, 2008). A quarter of 15-17 years olds had gambled in the previous 12 months (Ministry of Health, 2008, Ministry of Health, 2009) and one in six had gambled on Instant Kiwi or other scratch tickets (Ministry of Health, 2009). Moreover, the highest level of participation in both Instant Kiwi and non-casino EGMs was amongst 18-24 year olds. Overall, 60% of 18-24 year olds had participated in any gambling activity in the previous year, which was slightly lower than all older age groups (Ministry of Health, 2009). In terms of problem gambling, rates were lower amongst the 15-24 year age group (0.3%), compared to their older counterparts. The authors of the report concluded that participation by youth (defined as 15-17 years) in all forms of gambling except for Instant Kiwi was low – with problem gambling rates also low in this age group (0.4% compared to 1.7% of the total adult population) (Ministry of Health, 2009). It was noted, however, that the research did not investigate participation in

informal gambling activities – such as playing cards with friends – something that young people may participate in (Ministry of Health, 2009).

More recent research from New Zealand found that whilst gambling was a widespread activity undertaken by young people (around one third had gambled by the age of ten), it was generally of low importance to them. In addition, similar to youth in other countries, they preferred to gamble on Lottery products and ‘informal’ modes of gambling (Rossen, 2008).

2.2.1.2 Australia

Adolescent problem gambling rates have been reported as being between 3-4% in Australia (Delfabbro et al., 2005, Moore and Ohtsuka, 1997, Delfabbro and Thrupp, 2003). Whilst this is two times the level of adult problem gamblers in the country (Delfabbro et al., 2005), it is lower than that reported in other nations such as Canada (Delfabbro et al., 2005). Participation in gambling by youth has also been identified as being lower than the rates identified in international studies (Jackson et al., 2008). Delfabbro and colleagues (2005) suggest that this may be due to the more limited access to gambling for Australian youth, given that many of the activities are restricted to venues such as casinos and hotels. Others have commented that further research examining gambling rates amongst young people is required, given the variation in levels of participation evident in Australian-based research (Jackson et al., 2008).

2.2.1.3 US and Canada

Rates of problem/pathological gambling among North American youth (aged 13 to 20 years) have been estimated at between 4.4% and 7.4% (Shaffer and Hall, 1996). Similarly, an analysis of eight research studies undertaken by Gupta, Derevensky and colleagues in Canada, identified prevalence rates as between 3.4% and 6.7% of young people (Derevensky et al., 2003).

A review of the incidence of youth gambling in the United States and Canada between 1984 and 1999 identified that there was a 'substantial increase' in the number of young people reporting last year gambling behaviour, as well as an increase in the proportion who experienced serious problems related to their gambling (Jacobs, 2000). For example, in the US between 1984 and 1988, the mean level of participation in last year gambling by school age students was 45% (range: 20-86%); during the period 1989-1999 this increased to 66% (range: 52-71%) (Jacobs, 2000). A more recent telephone survey with a representative sample of US residents aged 14-21 years (n=2,274 respondents) identified that around two thirds (68%) had gambled in the previous year, and that 11% had done so more than two times per week. The prevalence of problem gambling in the overall sample was 2.1% (Welte et al., 2008).

Recent research from Canada identified that more than 3 in 5 (61%) Canadian youth had gambled in the past year and that, compared to adults, there were higher rates of past year low-risk, moderate-risk, and problem gambling amongst this population group (Huang and Boyer, 2007). This study also identified differences between males and females, with the level of young women non-gamblers being significantly higher than that of males (43% compared with 35%). Adolescent females also had significantly lower prevalence of moderate-risk or problem gambling, compared to their male counterparts (Huang and Boyer, 2007).

2.2.1.4 United Kingdom

The latest British gambling prevalence study was undertaken in 2010, and includes a sample of 16-24 year old young adults (Wardle et al., 2011). Findings reveal gambling prevalence rates in this age group (68%) were broadly similar to those identified in 1999, and that the National Lottery Draw, scratchcards, and slot machines were the most popular activities for younger gamblers. The authors note that whilst those aged 16-24 had a lower overall gambling prevalence rate compared to older age groups, they did have the second highest mean score with regard to annual gambling activities undertaken (2.3 compared to 2.5 for those aged 25-34

years). Moreover, younger adults aged 16-24 had the highest rates of low risk and moderate risk gambling, and were second only to those aged 25-34 in relation to problem gambling rates (which were reported as 1.9%) (Wardle et al., 2011).

Another recent study involving younger British youth (12-15 years) identified that 21% had gambled in the last week, and 2% were estimated to have a gambling problem. These results show a decrease in both rates of gambling and problem gambling compared with previous studies undertaken between 2005 and 2008 (Ipsos MORI, 2009).

2.2.1.5 Demographic Correlates

Prevalence of problem gambling amongst youth from different ethnic groups has not been widely investigated (Blinn-Pike et al., 2010). In their recent review of the literature, Blinn-Pike et al highlighted that few studies either reported the ethnic composition of their samples and/or made ethnic-based comparisons within the data (Blinn-Pike et al., 2010). Of the studies identified, they note surprise that, given the increase in the number of gambling venues on North American reservations, only three explored differences between American Indian and non-Indian adolescents (Blinn-Pike et al., 2010). Others have asserted that whilst some research has identified higher rates of problem gambling amongst young people from minority ethnic communities, this finding is not universal (Welte et al., 2008).

Within New Zealand, recent research found that significantly greater proportions of Pacific students were experiencing gambling problems, compared with their New Zealand European peers (Rossen, 2008). There has been limited research which has focussed on Asian peoples and gambling in this country, although it has been reported that this population – including international students – may be at greater risk of developing gambling-related problems (Bellringer et al., 2003).

A study from the US found that 'Blacks', 'Asians' and 'Mixed/Unknown' were less likely to have gambled than 'whites' (with 'Asians' reporting the lowest gambling involvement). 'Blacks' and 'American Indians' were more likely to gamble more frequently than 'Whites', although there were no differences between all the ethnic groups in terms of levels of 'at risk/problem' or 'problem gambling' (Welte et al., 2008). Similarly, another US study reported lower rates of gambling frequency amongst Asian American and Caucasian students (Stinchfield, 2000). It has been reported that amongst Native American samples, rates of youth problem and pathological gambling are generally higher than the general population (McGowan et al., 2000).

Research from the UK has found no significant difference in the prevalence of problem gambling across different ethnic groups (Fisher, 1999, Ipsos MORI, 2009), although a recent British study of 12-15 year old school children identified that whilst rates of gambling amongst Asian children were no higher than those from other ethnic backgrounds, they were more likely to be problem gamblers (Ipsos MORI, 2009).

In contrast, high rates of frequent and problem gambling amongst young people from indigenous backgrounds were reported in an Australian study (Delfabbro et al., 2005). Whilst the authors note the need for further research in this area, they hypothesise that the findings may be indicative of the links between ethnicity and economic status, and subsequent involvement in gambling behaviour due to poverty and unemployment (Delfabbro et al., 2005). Others have identified the relationship between increased gambling rates and socio-economic status of young people from minority ethnic groups (Zitzow, 1996). The need for further research into differences in gambling behaviour between various ethnic groups has been identified (Stinchfield, 2000) particularly given the potential differing cultural meaning ascribed to the behaviour (Stinchfield, 2000) and the potential for socio economic status to act as a confounding factor (Welte et al., 2008).

Gender differences are evident in the research. Of note, male youth are more likely than their female counterparts to engage in gambling, a finding that is consistently reported across different countries (Huang and Boyer, 2007, Delfabbro et al., 2005, Blinn-Pike et al., 2010, Stinchfield, 2000, Turchi and Derevensky, 2006, Ste-Marie et al., 2002, Hardoon et al., 2002, Jacobs, 2000). Males have also been identified as both gambling more frequently (Delfabbro et al., 2005, Gupta and Derevensky, 1998b, Gupta and Derevensky, 1998a, Hardoon et al., 2002, Jacobs, 2000) and on a wider range of activities (Delfabbro et al., 2005, Jacobs, 2000). In addition, there have been differences reported with regard to attitudes towards gambling, with females significantly more likely to perceive gambling as a risky behaviour without economic benefits (Splevins et al., 2010). In line with this, (older) male adolescent gamblers have been identified as being more likely than their female peers to subscribe to the view that ‘some people have skills or special approaches that can improve their chances of winning at gambling’ (Rossen et al., 2009). Although the evidence is sometimes contradictory, further gender related differences have been found with regard to preferred mode of gambling. Males, for example, are more likely to prefer informal gambling activities such as card games and betting with friends (Wallisch, 1996, Stinchfield, 2000), while females tend to prefer lotteries, card games, EGMs bingo and horse racing (Wallisch, 1996, Gupta and Derevensky, 1998a, Stinchfield, 2000). Research has also identified males being more attracted to sports betting than females (Gupta and Derevensky, 1998a, Jacobs, 2000).

2.2.2 Attitudes towards gambling

A number of studies have explored young people’s motivations for gambling (Splevins et al., 2010, Hardoon, 2004, Valentine, 2008, Moodie and Finnigan, 2006, Rossen, 2008, Gupta and Derevensky, 1998a). A recent review of the literature suggested that young people participate in gambling for entertainment, to win money, because of the sensation of winning and the thrill of the game, or as a means to escape from stress and other problems (Valentine, 2008). A study

from Scotland involving school students aged 11-16 years found that the most frequently reported reasons for gambling was to win money, followed by fun, excitement, boredom and risk taking (Moodie and Finnigan, 2006). Gambling may also be undertaken to avoid problems (Hardoon, 2004, Gupta and Derevensky, 1998a) or as a way of escaping depression or anxiety (Moodie and Finnigan, 2006, Gupta and Derevensky, 1998a). In New Zealand, Rossen found similar motivations for gambling, with students indicating that their main reasons for participating were enjoyment (61% of the sample), to win money (58%), for excitement (34%), to relieve boredom (27%) and for a challenge (24%) (Rossen, 2008). Splevins and colleagues (2010)⁷ identified differences between different types of gamblers in relation to their motivations for gambling, with problem gamblers more likely to take part than non-problem gamblers to win money, or because they liked the challenge/risk (Splevins et al., 2010).

Various forms of gambling may be perceived in different ways by young people (Moodie and Finnigan, 2006, Splevins et al., 2010). For example, the National Lottery and scratchcards were not considered forms of gambling by around one third of young people (gamblers and non-gamblers) who were surveyed in Scotland (Moodie and Finnigan, 2006). Different modes may also be linked with requiring different skill levels (Rossen et al., 2009, Splevins et al., 2010). A study of youth gamblers in New Zealand found that casino table games and internet gambling were viewed as involving a level of skill, whereas lottery products, bets with friends/family, housie/bingo, gaming/casino evenings, and telephone text games were not perceived by as many young people to be skill-based activities (Rossen et al., 2009).

Differences have also been identified between problem and non-problem adolescent gamblers in relation to their beliefs about the level of skill involved in gambling (Splevins et al., 2010, Rossen et al., 2009). For example, a survey of secondary school students identified that problem gamblers were more likely to display an optimistic attitude towards gambling as a

⁷ The limitations of this study need to be acknowledged, including that it involved a small sample of problem gamblers drawn from a private school; thus generalisability to other populations is limited (Splevins et al, 2010).

means of generating income (Splevins et al., 2010). Overall, youth who perceive gambling as a skill-based activity – and who believe that they are ‘good’ at it – are more likely to gamble, to gamble heavily, and to be a problem gambler (Derevensky et al., 1996, Gupta and Derevensky, 1998a). In addition, they are more likely to gamble on the mode that they link with having a skill-based component (Griffiths, 1995, Carroll and Huxley, 1994, Rossen, 2008).

Research from New Zealand investigated young people’s attitudes towards gambling, and found that they were slightly more likely to think of disadvantages rather than advantages for the community from raising money through gambling, and generally viewed the activity as doing ‘more harm than good’ (Rossen et al., 2009). Despite this, the vast majority of gambling activities were viewed as having a social component by around half the sample, in that they offered people ‘the opportunity for a good night or day out’ (Rossen et al., 2009).

2.2.3 Patterns of behaviour

Similar to adult problem gamblers, adolescent problem gamblers tend to play several games on a regular basis, although they may have their ‘favourite’ games (Fisher, 1999). They also spend significantly more money and time on the activity than their non-problem gambling peers (Fisher, 1999, Moodie and Finnigan, 2006, Jacobs, 2000). It has been suggested that gambling problems amongst youth may ‘wax and wane’ over time (Winters et al., 2002, Petry et al., 2009, Slutske et al., 2003) and resolve naturally (Slutske et al., 2003), although others have argued that there is a lack of empirical evidence to support this claim (Derevensky et al., 2003).

2.2.3.1 Young people and different gambling formats

Youth gamblers engage in a range of gambling activities, from informal modes such as betting amongst friends (Wallisch, 1996, Stinchfield, 2000, Turner et al., 2008) through to more formal activities such as fruit machines and lottery based products (Rossen et al., 2009, Fisher, 1999, Ipsos MORI, 2009, Stinchfield, 2001, Shaffer, 2003, Felsher et al., 2003, Department of Internal

Affairs, 2008). Research has shown that access to this latter type of gambling remains accessible to young people, despite age-related restrictions (Rossen et al., 2009, Griffiths and Wood, 2007, Fisher, 1999).

Involvement in different gambling activities has been shown to differ, depending on a young person's relationship with gambling (Delfabbro et al., 2005, Jacobs, 2000). For example, researchers in Australia found that problem gamblers were significantly more likely to be involved with card games, racing, and sports betting, but not with scratchcards, lotteries or bingo. It was also reported that problem gamblers participated in a wider range of gambling activities (Delfabbro et al., 2005). Findings from a British survey indicate that youth gamblers were similar to the general population sample in that they comprised a large group of broadly similar gamblers who gamble across a range of activities – with a smaller subset involved in more technical forms of gambling such as spread betting, online betting and betting exchanges. However, the researchers concluded that adolescent gamblers were more likely to bet privately and gamble on slot machines, due to the accessibility of these types of gambling (Williams et al., 2008). Research also suggests that gambling behaviour may also change as young people progress developmentally (Rossen et al., 2009), with lottery products and EGMs becoming more attractive to older youth (Stinchfield, 2000, Winters et al., 1995, Rossen et al., 2009).

Fruit machines have been identified as a popular form of gambling for some young people in the UK (Fisher, 1999, Moodie and Finnigan, 2006, Huxley and Carroll, 1992). A large survey found that three quarters of 12-15 year olds had played these machines at least once, and that more was spent on them than any other gambling activities undertaken by the young people (Fisher, 1999). Moreover, a survey of school pupils aged 11-16 years in Scotland found that fruit machines were by far the most popular form of gambling amongst all types of gamblers (non-problem, at-risk and problem) (Moodie and Finnigan, 2006). A study from New Zealand found that young frequent gamblers tended to play EGMs and housie, and highlighted concern around

the level of involvement of the youngest age group in EGMs, given the mode's links to problem and pathological gambling (Department of Internal Affairs, 1995).

Across different countries, it has been reported that *scratch tickets* are a popular gambling activity amongst young people (Ólason et al., 2006, Jackson et al., 2008, Delfabbro et al., 2005, Department of Internal Affairs, 2008, Wood and Griffiths, 1998). This may be due to their easy accessibility (Griffiths, 2000) and the fact that they are often purchased by parents and given to their children (Felsher et al., 2003, Wood and Griffiths, 1998). *Lottery tickets* have also been identified as being commonly bought by parents on behalf of their child (Fisher, 1999, Splevins et al., 2010, Wood and Griffiths, 1998), with gambling on the Lottery one of the most common forms of gambling undertaken by young people (Jacobs, 2000, Wardle et al., 2011, Felsher et al., 2004a, Felsher et al., 2004b, Gupta and Derevensky, 1998a, Department of Internal Affairs, 2008). The most recent British Gambling Prevalence Survey found that 42% of young people aged 16-24 years had participated in the National Lottery Draw in the last year (Wardle et al., 2011) and a review of research from Canada and the US found that lottery games were favoured by young people (Jacobs, 2000). Jacobs (2000) also notes that there was an increase in the number of young people gambling following the introduction of state or provincial lotteries into an area.

Playing gambling games on the Internet – without any financial outlay – has been shown to be common amongst young people (Ólason et al., 2006, Griffiths and Parke, 2010, Griffiths and Wood, 2007, Hardoon et al., 2002), with a recent study identifying that of the 8% of the young people aged 12-15 years who had played a National Lottery game on the Internet, around one third had also played the 'free' games on offer (Griffiths and Wood, 2007). Indeed, young people have been identified as being particularly vulnerable to remote gambling opportunities (Griffiths et al., 2008), not least because of their familiarity and skill in using and accessing new media (Griffiths and Parke, 2010). There are differences, however, evident in the literature with regard

to young people's participation in *on-line gambling*, with reportage of past year rates varying somewhat (Griffiths and Parke, 2010). Secondary analysis of data from a recent British survey reveal that prevalence of Internet gambling was highest amongst those in the 16-34 years age range, with 9% of 16-24 year olds having gambled on-line in the past year (Griffiths et al., 2008). In contrast, Internet gambling was the least popular form of gambling amongst school students in an Australian study (only 5% of the sample had ever participated in this activity) (Delfabbro et al., 2005) and a recent study of 12-15 year olds from the UK found that only one percent of the sample had gambled with money online in the past week (Ipsos MORI, 2009). This was despite nearly all respondents (96%) reporting that they had used the Internet in the past seven days (Ipsos MORI, 2009). Research from New Zealand has also indicated that Internet-based gambling is not widely undertaken by young people, due to a lack of interest or because it was considered a waste of time/money (Department of Internal Affairs, 2008), although a survey of school students found that 8.8% of students who had gambled in the past had gambled over the Internet (Rossen, 2008). A recent review of adolescent gambling on the Internet concluded that despite the variations in participation rates reported, a small but important minority of adolescents do take part in this mode of gambling (Griffiths and Parke, 2010).

2.2.3.2 Social context of gambling

The social context of gambling was investigated as part of a study conducted in Australia. Respondents were asked to indicate the circumstances in which they gambled, with a summary of the results displayed in Table 2.

Table 2: The social context of gambling

	N	Alone <i>n (%)</i>	With parents <i>n (%)</i>	With siblings <i>n (%)</i>	With other relatives <i>n (%)</i>	With friends <i>n (%)</i>
Card games	418	55 (13.2)	28 (6.7)	46 (11.0)	33 (7.9)	150 (35.9)
Poker/EGMs	172	67 (39.0)	32 (18.6)	6 (3.5)	10 (5.8)	45 (26.2)
Racing	318	59 (18.6)	150 (47.2)	12 (3.8)	20 (6.3)	33 (10.4)
Sports betting	272	59 (21.7)	70 (25.7)	20 (7.4)	22 (8.1)	66 (24.3)
Lotteries	250	63 (25.2)	138 (55.2)	10 (4.0)	14 (5.6)	12 (4.8)
Scratchies	382	92 (24.1)	184 (48.2)	19 (5.0)	31(8.1)	18 (4.7)
Internet	114	79 (69.3)	11 (9.6)	4 (3.5)	1 (0.9)	13 (11.4)

As can be observed from Table 2, the results indicate that the social contexts vary across the different forms of gambling. For example, whilst card games are more likely to be undertaken with friends, Internet gambling and playing poker/gaming machines were predominantly a solo activity. Moreover, Lotteries, scratchies and racing were commonly undertaken with parents (Delfabbro et al., 2005). This latter finding is in keeping with other research which has highlighted the role of parents in facilitating young people's access to gambling activities (Griffiths and Parke, 2010).

2.2.4 Risk factors

Risk factors may be described as criteria or characteristics associated with an individual that make it more likely that they will develop a problematic behaviour (Mrazek and Haggerty, 1994). A review of research in the socio-cultural domain of gaming and gambling identified that correlation research in relation to adolescent gambling is at an early stage of development (McGowan et al., 2000). Others have highlighted the need for ongoing work in this area to help prevent problem gambling amongst youth, and to ensure that prevalence research does not dominate the field (Derevensky et al., 2003). Rossen (2008) also notes that in the literature contributing factors (i.e. risks) are often not distinguished from outcomes related to problematic gambling behaviour. She cites criminal behaviour (i.e. stealing) as an example of this, in that it is

both a potential negative outcome of gambling, whilst also seen to be a risk factor and thus included within many of the problem gambling screens (Rossen, 2008).

In spite of these limitations, the literature consistently suggests that adolescent problem gamblers have been shown to have an array of pre-existing problems (Gupta and Derevensky, 2000, Hardoon et al., 2002), with gambling often undertaken as an attempt to manage or resolve these underlying issues (Gupta and Derevensky, 2000, Ste-Marie et al., 2002). Many of the risk factors associated with gambling may be observed in other potentially harmful youth behaviours, such as substance misuse (Shead et al., 2010, Derevensky et al., 2003). It has also been highlighted that the risk factors for problem gambling differ between males and females (Jackson et al., 2008, Moore and Ohtsuka, 1997, Gupta and Derevensky, 1998b, Stinchfield, 2000). Research involving school students in Australia, for example, found that the key predictors for greater gambling involvement for males were other antisocial and risk-taking behaviours; for females, they were dissatisfaction with peers and school connectedness (Jackson et al., 2008).

Based upon research which was conducted in England and Wales, involving a sample of nearly 10,000 young people aged 12-15 years, the following table lists a range of risk factors which were described as being useful predictors of adolescent problem gambling (Fisher, 1999).

Table 3: Predictors of youth problem gambling

<ol style="list-style-type: none">1. Living at the seaside2. Being male3. Feels bad about amount of alcohol drunk4. Has a parent who gambles "too much"5. Has a parent who gambled on fruit machines last week6. Has a parent who gambled on National Lottery scratchcards last week7. Has parents who approve or don't mind if their child gambles8. Has misused dinner money (past year)9. Has stolen from family (past year)10. Has stolen from outside the family (past year)
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As can be observed in Table 3 above, several of the risk factors are concerned with parental gambling behaviour and attitudes. Other research has identified anxiety and risk propensity, being male, academic difficulties, and knowing a significant other (including a sibling or friend) with a substance use problem, as being key predictors of both at-risk and probable pathological gambling (Dickson et al., 2008). Hardoon and colleagues (2002) identified a set of predictor variables which they claimed led to problem gambling; these included having family problems, conduct problems, being addicted to drugs or alcohol, and being male. A summary of the key risk factors for problem gambling amongst youth, as identified as part of this review, is presented below.

- *Gender*: evidence suggests that male youth are more likely than females both to gamble – and to develop problematic gambling behaviours (Rossen, 2008, Huang and Boyer, 2007, Delfabbro et al., 2005, Moodie and Finnigan, 2006, Jackson et al., 2008, Jacobs, 2000, Hardoon et al., 2002). A study from Canada found that, amongst last year adolescent gamblers, young men were three times as likely as their female counterparts to be either problem or moderate-risk gamblers (Huang and Boyer, 2007). Other research has reported males being five times more likely to be classified as PPGs (Hardoon et al., 2002).
- *Parental involvement in gambling behaviour* (Shead et al., 2010, Delfabbro et al., 2005, Williams et al., 2008, Fisher, 1999, Turchi and Derevensky, 2006, Buchta, 1995, Hardoon and Derevensky, 2002, Darbyshire et al., 2001b, Vachon et al., 2004, Moodie and Finnigan, 2006, Rossen, 2008). Research from the UK identified a range of factors relating to parental behaviour that increased the odds of a child becoming a problematic gambler. These included having a parent who: gambles too much; approves or does not mind if their child gambles; has gambled on fruit machines during the past week; and, has gambled on National Lottery scratchcards during the past week (Fisher, 1999). Other research has identified that the frequency of gambling amongst young people is linked to parental gambling frequency – and that the severity of gambling problems are related to the father's

severity of gambling (Vachon et al., 2004). Overall, the research indicates that the children of problematic gamblers are 2-4 times more likely than the children of non-gamblers, to develop gambling-related problems themselves (Dowling et al., 2010).

- *Early onset of gambling* (Volberg et al., 2001, McGowan et al., 2000, Rossen, 2008, Wallisch, 1996, Huxley and Carroll, 1992). People who start gambling at an earlier stage in their life are more likely to develop (more severe) gambling problems. For example, research from Sweden identified that whilst the mean age of gambling initiation for non-problem gamblers was 20 years, for problem gamblers this was significantly younger, at 15.6 years (Volberg et al., 2001).
- *The age of the gambler* (Ste-Marie et al., 2002, Dickson et al., 2003, Stinchfield, 2000). Amongst adolescent male gamblers, for example, it has been shown that the severity of problem gambling-related behaviours increases with age (Ste-Marie et al., 2002).
- *Personality factors* (e.g. anxiety, risk propensity) (Ste-Marie et al., 2002, Dickson et al., 2008, Dickson et al., 2003, Nower, 2001, Moodie and Finnigan, 2006, Gupta and Derevensky, 1997). A survey of high school students identified that PPGs indicated the highest levels of anxiety and social stress, and the researchers concluded that there was preliminary support for the premise that young people engage in gambling behaviours as a means of self-medication in order to alleviate anxiety resulting from negative life events (Ste-Marie et al., 2002). Other research has reported a link between gambling and impulsivity (Moodie and Finnigan, 2006), and participating in gambling as a means of escaping anxiety (Moodie and Finnigan, 2006).
- *Emotional/mental state*: depression and suicide attempts have been found to co-exist with adolescent gambling (Gupta and Derevensky, 1998b, Ladouceur et al., 1994, Lesieur et al., 1991, Wallisch, 1993), and youth gamblers have been found to have lower self esteem (Gupta and Derevensky, 1998b) and higher rates of depression (Gupta and Derevensky, 1998a). A study from Canada found that a significantly greater proportion of PPGs were

assessed as having social, emotional and behaviour problems at clinical levels (Hardoon et al., 2002).

- *School-related problems*: a relationship between poor academic performance and other school problems, and youth problem gambling has been widely identified in the literature (Dickson et al., 2008, Rossen, 2008, Dickson et al., 2003, Ladouceur et al., 1999, Lesieur and Klein, 1987, Hardoon, 2004). Research undertaken in Canada found that both PPGs and at-risk gamblers were significantly less likely than non-gamblers and social gamblers to report being highly connected to their school (Dickson et al., 2008).
- *Substance use* (Moodie and Finnigan, 2006, Hardoon, 2004, Stinchfield, 2000, Dickson et al., 2003, Dickson et al., 2008, Fisher, 1999, Rossen, 2008, Griffiths and Wood, 2000). One of the strongest correlates for gambling amongst public school students in America (including both males and females) was alcohol use (Stinchfield, 2000). Having friends with substance use problems is also correlated with youth problem gambling (Dickson et al., 2008, Hardoon et al., 2002), as is having a family member with a drug and/or alcohol problem (Hardoon et al., 2002).
- *Anti-social and criminal behaviour* have been identified as a risk factor for youth (Stinchfield, 2000, Griffiths and Wood, 2000, Winters et al., 1993, Gupta and Derevensky, 1998a, Shead et al., 2010) and include, for example, a history of 'delinquency' (Griffiths and Wood, 2000, Winters et al., 1993).
- *Accessibility to gambling*: at a community level, accessibility of gambling opportunities is a clear risk factor (Hardoon and Derevensky, 2002, Brezing et al., 2010, Shead et al., 2010, Felsher et al., 2004b, Jacobs, 2000) although the research is inconclusive in relation to how this impacts on rates of gambling (Shead et al., 2010).
- *Attitudes towards gambling*: research has identified that particular attitudes towards gambling may increase a young person's likelihood of developing problematic gambling behaviour (Rossen, 2008, Shead et al., 2010, Moore and Ohtsuka, 1999, Delfabbro et al.,

2006, Wallisch, 1996, Derevensky and Gupta, 2004). This may include a lack of understanding of the risks associated with the behaviour, and a belief of some level of control over the outcomes (Delfabbro et al., 2006, Wallisch, 1996). In her study of secondary school students in New Zealand, for example, Rossen (2008) found that those with a more liberal attitude towards gambling were more likely to participate in gambling activities – and those participants who thought that performance on EGMs could be improved with practice, or rated themselves as better at gambling than others, were at greater risk of gambling problematically.

As can be observed above, the majority of research to date has focused on demographic and behavioural correlates of youth gambling, with limited analysis of the attitudinal characteristics of problem gamblers (Shead et al., 2010). Given links between problem gambling and positive attitudes towards gambling (Wallisch, 1996) the importance of investigating how gambling-related thoughts develop has been highlighted (Shead et al., 2010). In particular, this is seen to have the potential to improve prevention efforts which seek to challenge these attitudes before they become fully embedded (Shead et al., 2010).

2.2.5 Protective factors

Despite the presence of known risk factors, it is interesting to note that not all young people experience gambling-related or other problems in their lives (Vitaro et al., 2008, Lussier et al., 2007). Vitaro and colleagues (2008) for example reported that whilst some youth with gambling parents experienced severe adjustment problems, other young people did not (although the study did not explore potential moderators in this regard). Others have highlighted that in spite of a number of risk factors being present, some youth do not develop problematic gambling behaviour (Lussier et al., 2007); this, therefore, raises issues around what factors may protect young people against this happening. Protective factors for youth problem gambling have been described as those which are associated with less dysfunction, work to minimise the effects of

the behaviour, or prevent the occurrence of the risk factor (Dickson et al., 2003). More simply, they may also be described as features which decrease an individual's likelihood of developing problematic gambling behaviour (Dickson et al., 2003).

Despite evidence of some recent research being undertaken on this topic (Dickson, 2006, Dickson et al., 2008, Rossen, 2008, Dickson et al., 2003), there have been few studies which have investigated protective factors for youth with regard to problem gambling (Dickson et al., 2003, Brezing et al., 2010, Lussier et al., 2007, Rossen, 2008, Shead et al., 2010). In the absence of gambling-specific data, it has been hypothesised that protective factors which have been identified in other youth problem behaviours (e.g. substance misuse) are also likely to have application to the youth gambling arena (Dickson et al., 2002, Brezing et al., 2010).

A study which explored how protective factors increase resilience in relation to problem gambling identified that family cohesion and school connectedness played an important role (Dickson et al., 2003). For example, at-risk and PPGs were substantially less likely than social and non-gamblers to report being highly connected to their school. Moreover, PPGs reported significantly greater disengagement from their families and were more likely to be classified as disengaged compared to other adolescents: 11.1% of PPGs reported being connected to families, compared with 21.8% of at-risk gamblers, 28.7% of social gamblers, and 34.2% of non-gamblers (Dickson et al., 2003).

Similarly, Rossen's (2008) research identified that high levels of attachment, trust and communication with parents were protective factors in relation to whether or not young people gambled. Findings in relation to problem gambling specifically found that students who had higher levels of attachment and trust in parents and peers, and had a higher level of communication with their mother, were less likely to experience problems. Of note, the research revealed that social connectedness to maternal and teacher figures acted in a protective manner, even when other substantial risk factors were present (Rossen, 2008). Lussier et al

(2007) found that poor 'social bonding' was the strongest predictor of problem gambling (out of seven risk and protection domains) and, like previous research, identified family bonding and school bonding as being key protective factors. Others have identified the importance of healthy and meaningful relationships in protecting young people from problem gambling (Dickson et al., 2008), and research from Canada found that strong academic achievement may potentially act as a protective factor (Hardoon et al., 2002).

Researchers from Australia explored the protective factors which mitigate the transmission of parental gambling problems to children, and identified that there is a limited research in this field (Dowling et al., 2010). In keeping with broader protective factors, they did highlight that family cohesion and school connectedness (along with female gender) played a role in protecting young people (Dowling et al., 2010).

In considering future research in this area, it has been highlighted that the study of protective factors need to be conducted in the presence of risk (Dickson et al., 2003), particularly given the sometimes unclear relationship between protective and risk factors (e.g. whether it is the absence of risk or the presence of protective factors which has the greatest influence in terms of the subsequent development of problematic gambling) (Dickson et al., 2008).

2.2.6 Impacts of problematic gambling for youth

The social and other costs of problem gambling experienced by young people have been widely reported in the literature (Fisher, 1999). Indeed, research from Sweden found that whilst young people were less likely to gamble (and spent less money than adults) they were more likely to experience gambling related problems (Volberg et al., 2001). A summary of the key harms related to youth gambling identified within this review is provided below.

Young gamblers often engage in other addictive behaviours, such as alcohol and other substance use, smoking etc. (Hardoon and Derevensky, 2002, Blinn-Pike et al., 2010, Ólason et

al., 2006, Fisher, 1999, Splevins et al., 2010, Dickson et al., 2003). Research from Canada found that youth with serious gambling problems also had more substance abuse problems, with the risk for these increasing with gambling severity (Dickson et al., 2003). Involvement in Internet-based gambling by young people may carry additional health risks given that online gamblers are more likely to smoke cigarettes compared with non-Internet gamblers (Griffiths and Wood, 2007). Results from a British study indicated that online gamblers were also more likely than non-Internet gamblers to drink alcohol heavily in the preceding week (Griffiths and Wood, 2007). Beyond this, there is a lack of research on the relationship between adolescent problem gambling and physical health (Valentine, 2008).

Problem gambling may negatively impact young people's *mental health* (Valentine, 2008, Gupta and Derevensky, 1998b, Gupta and Derevensky, 2000). An exploration of the profile of adolescent gamblers seeking treatment identified that approximately 30% of clients met the criteria for clinical depression upon intake (Gupta and Derevensky, 2000). The direction of the relationship between gambling and depression has, however, been highlighted as an important issue to consider, given that it is not always known whether gambling has led people to a depressive state or acted as a driver for the initial development of the gambling behaviour (Gupta and Derevensky, 1998b).

Delinquency and crime has been identified as a potential negative impact of problem gambling (Gupta and Derevensky, 1998a, Haroon and Derevensky, 2002, Blinn-Pike et al., 2010, Clark and Walker, 2009, Gupta and Derevensky, 2000, Fisher, 1999), although it has been asserted that the evidence for this relationship is less clear than other negative behaviours (Valentine, 2008). A study involving 6145 young adults⁸ in the US identified links between gambling and criminal activity, particularly specific types of gambling such as cards, sports betting and horse racing; the research did not identify a relationship between lotto or casino game players and

⁸ This included young adults aged 18-27 years, with the average age of respondents 22 years.

increased likelihood of committing a crime (Clark and Walker, 2009). Research which explored young people and fruit machine use found that some had stolen in order to pay for their gambling (Huxley and Carroll, 1992), and a study involving 12-15 year olds found that nearly half had stolen from their family as a means of funding their gambling behaviour (Fisher, 1999).

Disruption to family and other relationships as a result of gambling has been reported in the literature (Hardoon and Derevensky, 2002, Blinn-Pike et al., 2010, Fisher, 1999, Splevins et al., 2010, Hardoon et al., 2002). Friendships and other relationships with non-gambling peers may be replaced by gambling-related associates (Gupta and Derevensky, 2000, Blinn-Pike et al., 2010). As with other addictive behaviours, when a young person's gambling behaviour intensifies or becomes problematic, they may become increasingly socially isolated (Hardoon et al., 2002).

A correlation between *school difficulties* (e.g. truancy, reduced academic performance etc.) and problem gambling has been identified (Gupta and Derevensky, 1998a, Hardoon and Derevensky, 2002, Blinn-Pike et al., 2010, Gupta and Derevensky, 2000, Splevins et al., 2010, Dickson et al., 2008, Huxley and Carroll, 1992, Lesieur et al., 1991), with adolescent gamblers missing school in order to participate in selected activities (Huxley and Carroll, 1992) or lacking in concentration due to their preoccupation with the behaviour (Gupta and Derevensky, 1998a, Gupta and Derevensky, 2000).

Young people may be negatively impacted *financially* as a result of their gambling behaviour (Fisher, 1999, Huxley and Carroll, 1992, Gupta and Derevensky, 2000, Focal Research Consultants, 2008). A survey of 12-15 year olds identified that around one third of problem gamblers had sold possessions to gamble or pay gambling debts and borrowed to gamble (more than once or twice) (Fisher, 1999), and research amongst adolescents seeking treatment for their gambling found that most clients are facing serious financial difficulties, including large debts (Gupta and Derevensky, 2000).

2.2.7 Familial gambling

The links between familial gambling – particularly that involving parents – and the development of adolescent problem gambling have been discussed in the literature (Delfabbro et al., 2005, Williams et al., 2008, Dowling et al., 2010). Of note, young problematic gamblers widely report that one or more of their parents gamble (Darbyshire et al., 2001b, Vachon et al., 2004, Moodie and Finnigan, 2006, Rossen, 2008, Shead et al., 2010, Delfabbro et al., 2005). A study from the UK identified that adolescent problem gamblers were three times more likely than their non-problem gambling peers to report that they thought their parents gambled ‘too much’. They were also more likely to report that their parents approved or did not mind someone their age participating in gambling activities such as the National Lottery Draw, scratchcards or fruit machines (Fisher, 1999). An Australian study found that problem gamblers were significantly more likely than non-problem gamblers to report that they had someone close to them with a gambling problem, with 90% of problem gamblers in the sample claiming that their parents gambled (Delfabbro et al., 2005).

In a survey of school pupils in Scotland, parents were cited as the first person(s) that they had ever gambled with by a quarter of the sample, and in terms of ongoing gambling behaviour around one third reported that they gambled with their parents (Moodie and Finnigan, 2006). Interestingly, however, the researchers note that parents are just one group that gamblers may learn from, and highlight that friends may have the greater impact – given that they are the people most often gambled with, and who are considered a bigger influence (Moodie and Finnigan, 2006).

The literature also suggests that parental approval or tolerance of young people’s gambling behaviour facilitates access to gambling activities (Ladouceur et al., 1999, Rigbye, 2010, Fisher, 1999, Ipsos MORI, 2009). For example, research undertaken in Canada with young people aged 10-18 years found that parental knowledge of their child’s lottery playing was

commonplace – 84% of adolescents who reported purchasing any form of lottery ticket claimed that their parents were aware of the fact, and 94% stated that they were not afraid of getting caught (Felsher et al., 2003). Moreover, three out of four lottery players reported that their parents had purchased scratch tickets for them. The researchers identified that an important factor in the initiation and ongoing involvement in the lottery for female adolescents was parental participation in the activity (Felsher et al., 2003).

It is interesting to note that the results of a British survey indicate that parents may be less likely to discuss gambling with their children, compared with other potentially risky behaviours such as smoking and drinking (Ipsos MORI, 2009). Whilst this finding is based on children's perceptions of their parents' likely behaviour, it is supported by other research with parents which identified that only 5% of the sample would attempt to prevent their child gambling (Ladouceur et al., 1998).

2.2.7.1 Impacts of parental gambling on children and young people

Compared with research into the impacts of other addictive behaviours such as problematic alcohol use, there are limited data on how the children of problem gamblers are affected by their parents' behaviour (Vitaro et al., 2008, Jacobs et al., 1989, Darbyshire et al., 2001b, Dowling et al., 2010, Darbyshire et al., 2001a). This is despite a not insignificant number of children who grow up in a problem gambling family. For example, it has been estimated that around 174,000 children living in Australia may be affected (Darbyshire et al., 2001b). Others have estimated that between five and seven people are negatively affected by each problem gambler (Adams et al., 2004), with some extending this figure up to 17 (Lesieur, 1984).

Whilst there may be a somewhat small body of literature in this area, the research is clear in that the health and wellbeing of the children of problem gamblers is likely to be harmed due to their parents' behaviour (Darbyshire et al., 2001b, Jacobs et al., 1989, Darbyshire et al., 2001a, Vitaro et al., 2008, Abbott et al., 1995). A review of the literature on children who grow up in

problem gambling families identified that they may be 'severely and negatively' affected, and that the impacts of gambling on children mirror those that have been identified in relation to parental drug or alcohol use (Darbyshire et al., 2001a). The authors also highlight that due to the increasing involvement of women in gambling it is likely that there will be an increase in the number of children affected as a result (Darbyshire et al., 2001a).

A wide range of social and health problems have been identified (Darbyshire et al., 2001a, Abbott et al., 1995), including financial impacts (Abbott et al., 1995, Darbyshire et al., 2001b) and exposure to ineffective or inconsistent parenting (Vitaro et al., 2008, Darbyshire et al., 2001b, Abbott et al., 1995). The physical health of children may also be negatively affected (Dowling et al., 2010, Abbott et al., 1995) and includes involvement with 'health-threatening behaviour' (e.g. drug use) (Jacobs et al., 1989, Abbott et al., 1995). A review of the literature on this topic identified that physical health complaints of the children of problem gamblers included asthma, allergies, chronic headaches, and chronic gastrointestinal problems (Dowling et al., 2010). As discussed in a previous section, the children of gamblers are more likely to develop gambling problems themselves (Darbyshire et al., 2001b, Vachon et al., 2004, Moodie and Finnigan, 2006, Dowling et al., 2010, Abbott et al., 1995), with robust evidence that they are 2-4 times more likely than the children of non-problem gamblers to do so (Dowling et al., 2010). Conflict and a breakdown in relations may also be an outcome of parental gambling (Jacobs et al., 1989, Darbyshire et al., 2001b, Rossen et al., 2009), with the children of gamblers reporting twice the incidence of 'broken homes' (e.g. via divorce, separation, or the death of a parent) (Jacobs et al., 1989).

Links between parental gambling and youth mental health issues have been identified (Jacobs et al., 1989, Vitaro et al., 2008, Darbyshire et al., 2001a, Darbyshire et al., 2001b), including an increased risk of suicide (Jacobs et al., 1989) and depressive feelings and moods (Jacobs et al., 1989, Vitaro et al., 2008). In a study which investigated the experiences of adolescents with a

problem gambling parent, it was found that these young people were at greater risk than their classmates of psychosocial risk indicators (e.g. nearly half of the children of problem gamblers rated their overall quality of life as poorer than most, compared with 27% of their peers who reported no parental problem gambling) and incidence of anxiety, depressive mood and suicide risk (Jacobs et al., 1989). Of note, young people in the study who had one or more parents who gambled problematically reported nearly twice the incidence of suicide attempts. In considering these findings, it is worth highlighting that parents with gambling problems were also reported as having a number of 'companion' issues, including alcohol and other drug addiction, and over-eating behaviour. Thus, it is not possible to separate out the impact of the gambling activity from the effects of other problematic behaviour (e.g. that which was caused by alcoholism or drug use) (Jacobs et al., 1989), an issue that has been highlighted as requiring further investigation (Dowling et al., 2010). This limitation was also acknowledged by Vitaro and colleagues (2008) who sought to compare the depressive symptoms and conduct/anti-sociality problems in offspring of problem gamblers with children of parents without gambling problems – whilst also controlling for socio-demographic factors and other addictions or mental health problems in parents. The research found that children of problem gamblers were more likely to develop depressive symptoms and conduct problems than children with non-addicted parents, and that these continued (and sometimes increased) into young adulthood. Moreover, it was identified that ineffective parenting was responsible for the association between parental problem gambling and subsequent conduct/anti-sociality problems experienced by their children (Vitaro et al., 2008).

A qualitative study undertaken in Australia sought to gain a deeper understanding of the experiences of young people living in a family where a parent or caregiver had a serious gambling problem (Darbyshire et al., 2001b). Findings revealed a strong sense of loss experienced by the children – including both physical loss (e.g. a parent being unavailable due to leaving the home to go gambling) and existential loss (e.g. changing from a previously caring

parent to someone with little time for their children). In addition, the research identified that children had lost trust in their parent due to their unreliable and deceptive behaviour, and experienced more material losses (e.g. financial, loss of the family home). In terms of future behaviour, the young people in the study either claimed they would never gamble or, if they did, they would know when to stop (Darbyshire et al., 2001b). As the researchers note, this is interesting given the evidence which would suggest otherwise; notably, that the children of problem gamblers are at risk of developing their own gambling-related problems (Dowling et al., 2010, Gupta and Derevensky, 1997, Vitaro et al., 2008, Abbott et al., 1995, Dickson et al., 2002, Lesieur and Klein, 1987).

There were limited data identified within this review which explored the impact of maternal versus paternal gambling. One study highlighted concern around the increasing number of women developing gambling problems, given that they continue to be the primary caregiver within the family (Darbyshire et al., 2001b). The authors also noted some differences in the nature and extent of loss experienced by children, depending on whether it was their mother or their father with the gambling problem (Darbyshire et al., 2001b). As highlighted previously, the severity and frequency of the father's gambling problem was more closely linked to the young person's subsequent gambling (Vachon et al., 2004). Indeed, a literature review undertaken in Australia found that paternal gambling increases the risk of the child going on to develop problematic gambling behaviour more than maternal problem gambling (Dowling et al., 2010).

2.2.8 Treatment for youth problem gambling

It is beyond the scope of this review to describe and critique all of the different treatment options on offer to adolescent problem gamblers. At a broad level, however, the types of treatment available to young people internationally, include counselling, psychotherapy, cognitive behavioural therapy (CBT), advisory services, residential care and pharmacotherapy (Griffiths, 2008, Griffiths, 2007). More recently, the Internet is being utilised as a medium for counselling

and treatment with youth (Monaghan and Wood, 2010, Griffiths, 2007), as well as prevention and harm reduction work (Korn et al., 2006). This and other 'distant' modes such as websites and help lines for accessing information, have been highlighted as potentially more attractive to youth, although there are a lack of effectiveness data to support this claim (Griffiths, 2007). Recently, it has also been claimed that there have been no published studies of research evaluating the effectiveness of on-line interventions for youth problem gamblers (Monaghan and Wood, 2010), although some work has been undertaken in assessing the appropriateness and utility of a multimedia gambling website targeting youth (Korn et al., 2006).

Brezing and colleagues (2010) highlight that whilst evidence-based treatments for problem gambling have been reported, these have mostly been evaluated with adult problem gamblers, and few studies have involved youth⁹. Gupta and Derevensky (2000) also highlight the gap in the literature regarding treatment of youth gamblers, and record their surprise at the limited attention that this – or the traits of those seeking help – has received. They suggest that this may be due to a number of reasons, including the lack of treatment programmes which focus on youth problem gambling specifically, the limited number of young people who seek help for their gambling, as well as a lack of a unified treatment approach for young people (Gupta and Derevensky, 2000).

Whilst there is a lack of research on young people and help-seeking behaviours in relation to problem gambling (Splevins et al., 2010, Petry et al., 2009, Gupta and Derevensky, 2000), it is widely acknowledged that only a small proportion of adolescent gamblers present for treatment for their problematic gambling (Gupta and Derevensky, 2000, Splevins et al., 2010, Blinn-Pike et al., 2010, Chevalier and Griffiths, 2004, Monaghan and Wood, 2010, Derevensky et al., 2003), and that they face greater barriers in accessing treatment compared with adults (Derevensky et al., 2003). This includes, for example, a lack of recognition that the behaviour is problematic

⁹ See Brezing et al (2010) and Gupta and Derevensky (2000) for further discussion of the current evidence in youth problem gambling treatment.

(Splevins et al., 2010, Monaghan and Wood, 2010, Chevalier and Griffiths, 2004, Derevensky et al., 2003). Other barriers may be a fear of being identified, guilt, negative perceptions of therapy per se, and a belief that self-control as a means of moderating gambling behaviour is possible (Gupta and Derevensky, 2000). Moreover, compared with the availability of treatment for adult gamblers – and treatment for other youth addictions – there are far fewer treatment services geared specifically to the needs of problematic adolescent gamblers (Gupta and Derevensky, 2000, Moodie and Finnigan, 2006, Derevensky et al., 2003). Others have suggested that younger people may not seek treatment (or recognise their problem) due to not facing severe consequences of problematic gambling such as loss of a home or employment, because of their young age (Monaghan and Wood, 2010); there is also a possibility that they are ‘bailed out’ by their parents and thus never reach the stage of seeking external assistance or support (Griffiths, 2002). Although only speculative, Chevalier and Griffiths (2004) also suggest that some young people do not attend gambling treatment due to having committed suicide, or because it is a stigmatising action.

Table 4 details the profile of adolescent gamblers seeking treatment from the McGill University Research and Treatment Clinic in Canada (Gupta and Derevensky, 2000). When this profile was published in 2000 the authors reported that they had worked with 36 youth aged between 14-21 years over a five year period. All but one of these individuals was male. As evident in the following table, gamblers accessing help displayed a number of the risk factors typically associated with adolescent gambling (e.g. suffering from anxiety or depression) and were experiencing fairly significant harms (e.g. financial difficulties and relationship problems) as a result of their gambling.

Table 4: A profile of adolescent gamblers seeking treatment from the McGill University Research and Treatment Clinic

1. Overt signs of anxiety and/or attention deficit disorder.
2. Around one third of adolescents meet the criteria for clinical depression when they enter treatment (and a further 20% develop depression symptoms upon stopping gambling).
3. The majority exhibit risk-taking behaviour.
4. A breakdown in familial and other relationships is commonplace. Adolescent gamblers seeking treatment typically have lost contact with non-gambling peers and associate with fellow gamblers only.
5. Gambling activities which are most problematic include sports lottery tickets and sports betting, video lottery terminals and casino playing.
6. Most are facing serious financial difficulties, including large debts.
7. Academic failure and job losses are common.
8. Involvement in criminal activities outside the home is widespread, and many young people have stolen from within their own residences.

It is important to note that young people may turn to sources other than formal treatment agencies when seeking help (Splevins et al., 2010, Delfabbro et al., 2005). Research conducted in Australia identified that there were significant differences between problem and non-problem gamblers in terms of where they would access help if one of their peers had a gambling problem (Splevins et al., 2010). Whilst both groups reported parents, friends, and counsellors as their top choices, non-problem gamblers were significantly more likely to turn to their parents for help. In consideration of their own behaviour, significantly more non-problem gamblers claimed that they would try and access help if they had a gambling problem. In indicating who they would seek assistance from, problem gamblers cited (in order of preference): friends and parents, siblings, helplines, counsellors and relatives (Splevins et al., 2010). The importance of informed and educated frontline health and education professionals who may come into contact with youth problem gamblers (e.g. teachers and GPs) has also been highlighted (Rigbye, 2010). This is not only so that they may provide information themselves, but are also able to refer on young people to appropriate services if necessary (Rigbye, 2010).

2.2.9 Best practice and characteristics of youth specific interventions and prevention programmes

A recent study from the UK which explored youth (problem) gambling, and examined education and prevention approaches for this target audience, highlighted that growing concern around problem gambling in recent years has seen a wide range of initiatives put in place to address the problem (Rigbye, 2010). However, these have not always been supported by gambling-specific empirical evidence, not least because of the lack of availability of ‘best practice’ guidelines in this field (Marotta and Hynes, 2003, Griffiths, 2008, Rigbye, 2010, Derevensky et al., 2002) and/or the few published evaluations of youth gambling prevention or intervention programmes available (Blinn-Pike et al., 2010, Rigbye, 2010, Williams et al., 2010). Blinn-Pike and colleagues, in their review of adolescent gambling research, identified only three such evaluations¹⁰ – and recommended that more work is required in this area (Blinn-Pike et al., 2010).

Much of the prevention work that has been undertaken with youth has been within the school setting (Blinn-Pike et al., 2010, Williams et al., 2010). Williams and colleagues (2010) describe such programmes as existing on a continuum, with single-session presentations and videos, plays, interactive CDs and DVDs (often developed and delivered by government or addiction agencies) sitting at one end – and more extensive multi-session programmes delivered over a longer period at the other. Brezing and colleagues (2010) highlight prevention work at McGill University, which has adopted a risk-protective factor model, and involves multimedia prevention programmes delivered to elementary school students. Another school-based prevention programme in Canada has shown promising results in terms of improved knowledge about

¹⁰ These were all school-based initiatives: one involved a video and lecture presentations; another comprised of three 75-minute sessions which were followed up six months later; and, the third was a 45-minute programme consisting of a lecture, discussion, and activities. Evaluations of the initiatives showed mixed results (see Blinn-Pike et al (2010) for a further discussion of these).

gambling, as well as decreased gambling frequency – and decreased rates of problem gambling – amongst young people in the intervention group (Williams et al., 2010).

As a consequence of the lack of gambling-specific data, evaluations of efficacy in other fields (e.g. substance misuse) have often been drawn on (Rigbye, 2010, Marotta and Hynes, 2003, Brezing et al., 2010); a strategy that has been considered appropriate given the common elements between gambling and other risky behaviours such as alcohol and drug use (Rigbye, 2010, Derevensky and Gupta, 2004, Dickson et al., 2002, Brezing et al., 2010). Derevensky and Gupta (2004) for example, suggest that adoption of a harm-reduction approach – as utilised in the field of alcohol and other drug use – may be appropriate for prevention of youth gambling problems. Dickson et al (2002) also propose a conceptual framework for problem gambling prevention initiatives which draws on the common elements of prevention work undertaken in the tobacco, alcohol and other drug use fields. In applying learning from substance misuse prevention work, however, it is important to acknowledge the lack of review-level evidence within these other fields, such as the effectiveness of alcohol misuse interventions (Mulvihill et al., 2005, Foxcroft et al., 1997). Blinn-Pike et al (2000) also highlight that the framework developed by Dickson and colleagues (2002) has not yet been widely applied.

Similarly, this review found limited evidence of best practice information in relation to the provision of interventions and programmes designed to prevent or address problem gambling amongst youth. Thus, the wider literature in the mental health and substance misuse fields have been drawn on, and the key best practice characteristics of interventions targeting youth are summarised in the following pages.

2.2.9.1 Best practice in the youth substance misuse field

Within the field of alcohol and drug prevention, programmes which recognise the ‘reality’ of youth substance use, and concentrate on reducing potential harm are more likely to be successful than those which focus on abstinence alone (CAMH, 1999). Interactive and peer-led

programmes have also been shown to be effective in relation to reducing alcohol consumption amongst young people (Cuijpers, 2002, Ranzetta et al., 2003). Moreover, the addition of 'life skills' components to education programmes may strengthen their effects (Cuijpers, 2002).

A review of the literature undertaken to identify the key principles of effective substance use problem prevention programmes for youth found that such programmes address protective and risk factors and resiliency, seek comprehensiveness, and ensure sufficient programme duration and intensity (Roberts et al., 2001). In addition, programmes should be based on accurate information, set clear and realistic goals, monitor and evaluate performance, and ensure programme sustainability is considered from the outset. As has been highlighted in other 'best practice' guidance (CAMH, 1999, Ranzetta et al., 2003), the involvement of young people in programme design and implementation is important, alongside an understanding of their psychosocial development and adolescent perceptions of substance use. Finally, the authors highlight the importance of an effective process – in terms of the development of credible messages, knowledge and skill development in an interactive fashion, and appropriate teacher training and characteristics (Roberts et al., 2001).

A review of different education and prevention programmes within the substance misuse field identified a number of implications for the delivery of interventions for young people (CAMH, 1999). These included:

1. The goals of any alcohol and drug prevention programme for youth should be realistic;
2. Alcohol and drug education programmes should be based on practical educational principles (not ideology) and should be delivered at an age-appropriate level, from kindergarten through to the final year of high school;
3. Alcohol and drug prevention programmes should be comprehensive and include different components (such as media campaigns, family education, etc.) that complement each other;
4. Young people should be directly involved in the planning and implementation of programmes;
5. Policy initiatives have a role to play in influencing substance use, and reducing harm, and should be combined with other approaches;
6. Zero tolerance approaches do not work and may increase the risk of serious problems;

7. Alcohol and drug education programmes should be evaluated in order to determine what works and does not work; and,
8. Adults (including parents, service providers, educators and policy makers) should be informed about drug education and need to be aware of trends and use amongst young people.

It should be noted that the involvement of young people will be maximised when: young people are valued; the diversity of young people is recognised; their involvement is supported by sufficient resources, including time money and organisational systems; and, processes which evaluate and improve young people's involvement are included/introduced (Ranzetta et al., 2003).

2.2.9.2 Best practice in the youth mental health field

Within the field of mental health promotion, the Centre for Addiction and Mental Health (CAMH) has developed best practice guidelines when working with children and youth¹¹. These were developed from a critical analysis of the literature in the field, and are based on mental health promotion principles. The table on the following page contains the 10 guidelines which define best practices for mental health promotion interventions.

Table 5: Best practice guidelines for mental health promotion interventions

- | |
|--|
| <ol style="list-style-type: none"> 1. Address and modify risk and protective factors that indicate possible mental health concerns. 2. Intervene in multiple settings, with a focus on schools. 3. Focus on skill building, empowerment, self-efficacy and individual resilience, and respect. 4. Train non-professionals to establish caring and trusting relationships. 5. Involve multiple stakeholders. 6. Provide comprehensive support systems that focus on peer and parent-child relations, and academic performance. 7. Adopt multiple interventions. 8. Address opportunities for organizational change, policy development and advocacy. 9. Demonstrate a long-term commitment to program planning, development and evaluation. 10. Ensure that information and services provided are culturally appropriate, equitable and holistic. |
|--|

The CAMH notes that the above guidelines will not be applicable in all contexts, and require tailoring to individual circumstances.

¹¹ See: http://www.camh.net/About_CAMH/Health_Promotion/Community_Health_Promotion/Best_Practice_MHYouth/index.html

2.2.9.3 Public health and awareness campaigns

There has been limited evaluation of the impact of gambling and problem gambling information and awareness campaigns for youth (Rigbye, 2010, Griffiths, 2008) although, as noted previously, some evaluative work has been undertaken with school-based presentations (Rigbye, 2010). Whilst not aimed at youth specifically, an evaluation of a public awareness advertising campaign in the US which sought to inform residents of the signs of problem gambling and the type of help available, found that it had very limited impact (although it was acknowledged that the campaign was a 'one time effort' as opposed to a sustained programme) (Najavits et al., 2003). In New Zealand, adolescents were found to have greater awareness of advertising for gambling activities/venues compared to advertising concerned with the potential harms from gambling (Rossen et al., 2009). It has been suggested that such campaigns have limited impact unless people are specifically requested to attend to the information (Griffiths, 2008, Najavits et al., 2003) or they have a particular interest in the subject matter (Najavits et al., 2003).

As has been found in relation to drug education initiatives (Roberts et al., 2001, Foxcroft et al., 1997) some evaluations of gambling campaigns have omitted to explore the relationship between an increase in knowledge and actual behavioural change (Rigbye, 2010). The importance of ensuring that public health / public awareness initiatives do not increase youth interest in the activity and/or make it seem more attractive or desirable has also been highlighted (Rigbye, 2010), as has been found in some drug education work which has been shown to increase the drinking behaviour of young people (Mulvihill et al., 2005, Foxcroft et al., 1997).

2.3 Summary of the youth (problem) gambling literature

A summary of the current evidence regarding youth problem gambling was developed by Blinn-Pike et al (2010)¹². This highlighted that adolescent gambling is an international problem and that: (a) rates of problem gambling amongst adolescents are higher than adults, they move quickly from social to problem gamblers, and they are not likely to access treatment; (b) adolescent problem gamblers begin gambling at younger ages and young males gamble more than their female counterparts; (c) adolescent problem gamblers dissociate more frequently while gambling than adolescents who gamble infrequently, and score higher on excitability, extroversion and anxiety and lower on conformity and self-discipline; (d) adolescent problem gamblers have poor coping skills, are greater risk-takers, have lower self-esteem and higher rates of depression compared to other adolescents, and those aged 14-17 years are at greater risk for suicide ideation and suicide attempts; (e) adolescent problem gamblers are at greater risk for other addictions; and, (f) adolescent problem gamblers are more likely to have disrupted family and other relationships, to display poor academic performance, and to be involved in delinquency and crime than their non gambling and non-problem gambling peers (Blinn-Pike et al., 2010).

Another recent review of the literature identified a range of gaps within the current body of knowledge regarding youth gambling, and recommended that further research be undertaken in the following areas (Valentine, 2008):

- Parental attitudes towards underage gambling and the role of parental approval in relation to 'responsible play'
- Young women and problem gambling
- Gambling within minority ethnic communities
- The effect of advertising/promotion of gambling on gambling participation
- Longitudinal research to explore how gambling behaviour changes with age
- The impact of technology on young people's participation in gambling
- The effects of regulatory policy on young people

¹² This was adapted from a list of 14 summary statements initially developed by Gupta and Derevensky (2000).

- The effectiveness of preventative strategies
- Young gamblers help-seeking strategies, including the barriers which prevent some young people accessing help.

Other researchers have argued the need for further research on Internet gambling (Shead et al., 2010) and risk and protective factors for youth (Derevensky et al., 2003, Shead et al., 2010), including an examination of beliefs and attitudes that contribute to the development of problem gambling amongst youth (Shead et al., 2010).

3. PHASE TWO - REVIEW OF AVAILABLE DATASETS FOR RELEVANCE TO YOUTH GAMBLING

Phase Two consisted of a scoping exercise to determine the relevance of existing datasets, such as the dataset pertaining to the Youth'07 study carried out by researchers at the University of Auckland, with regard to their potential for a secondary analysis to inform on levels, patterns and trends of youth gambling in New Zealand, including the identification of risk and resiliency factors.

3.1 Methodology and Methods

Two main methods were employed to identify existing research databases of relevance to this phase of the research project:

- Review of New Zealand based peer reviewed and grey literature identified in Phase One (see Chapter 2 for methodological details relating to this review process);
- Searches of relevant New Zealand based websites, including key Government departments (e.g. Ministry of Health, Department of Internal Affairs, Health Sponsorship Council), Research Units (e.g. those based within tertiary institutions), and relevant NGOs, (e.g. PGFNZ, The Salvation Army); and,
- A web-based search using Google. Key search terms / words that were utilised were consistent with those used in Phase One and included forms of youth, adolescent, gambling, gaming etc.

All relevant reports and related information were scanned to determine their relevance to the current project, and when necessary, details were sought regarding existing gambling datasets.

3.2 Results

Table 6 summarises key findings of the scoping exercise and provides details on the research projects (with potential existing databases) that were most pertinent to the current project (NB: Table 6 does not provide an exhaustive review/summary of gambling related projects - only those with potential applicability to youth gambling issues have been listed). Details include the provider/author of each research project, project title, project details (scope, focus etc), and comments/conclusion regarding relevance to the current research project.

Table 6: Summary of dataset review

Provider / Author, Project Title and Project Details	Comments / conclusion
<p>Provider / Author: Adolescent Health Research Group, University of Auckland</p> <p>Project Title: Youth'07 - The Second National Health and Wellbeing Survey of New Zealand Secondary School Students</p> <p>Project Details: The Youth2000 surveys aim to provide representative information on the health and wellbeing of young people attending New Zealand secondary schools. For the Youth'07 survey (a follow-up to the initial survey in 2000), 96 randomly selected schools and 9,107 randomly selected students agreed to take part. Youth'07 gathered data on the following gambling related issues/variables:</p> <ul style="list-style-type: none"> - Gambled over past year; - Modes gambled on in past year; - Frequency of gambling in 4 weeks prior to survey; - Money spent gambling in typical week; - Time spent gambling on a typical day; and, - Reasons for gambling. <p>In addition to demographic information, Youth'07 also gathered data on a wide range of non-gambling variables (youth health and wellbeing & contextual) that may be relevant as risk/protective factors. These include:</p> <ul style="list-style-type: none"> - Alcohol and other drug use (cigarettes, marijuana, other and multiple drugs); 	<p>Of the research projects / datasets scanned as part of the current project, Youth07 appears to offer a source of data on youth gambling that is largely unanalysed. Key features include:</p> <ul style="list-style-type: none"> - A large sample size (N=9107) which is representative of NZ secondary school students; - Data relating to various aspects of youth gambling behaviour; - Data relating to a wide range of other youth health and wellbeing variables: AoD, emotional health etc (i.e. potential risk and protective factors); and, - Data relating to a wide range of contextual variables: home/school/ neighbourhood environments (i.e. potential risk and protective factors). <p><i>Conclusions / Recommendations:</i></p>

<ul style="list-style-type: none"> - Home environment – social connectedness and relationships with parent(s), violence; - School environment – social connectedness and relationships with school/teachers, truancy, disciplinary actions, bullying; - Neighbourhood environment – social connectedness and relationships with friends and other adults (non-parental etc), religious/spiritual beliefs, involvement in non-school activities (groups), risk-taking behaviours, availability of activities within neighbourhood; and, - Emotional Health – level of happiness with life, emotional well-being, depression/self-harm/suicide. 	<ul style="list-style-type: none"> - UniServices pursue access to and analysis of selected Youth'07 variables (detailed opposite). - UniServices and MoH consider the variables detailed opposite and agree upon their inclusion/exclusion in analysis plan.
<p>Provider / Author: Fiona Rossen, Centre for Gambling Studies, University of Auckland</p> <p>Project Title: Adolescent Gambling in New Zealand: An Exploration of Protective and Risk Factors (PhD Thesis)</p> <p>Project Details: This thesis explored the relevance of gambling and problem gambling for New Zealand adolescents. A questionnaire consisting of both standardised and non-standardised items was administered to a random sample of more than 2000 secondary school students in the Upper North Island. Investigated topics included the role of gambling in adolescent life, the prevalence of adolescent problem gambling, and associated risk factors, and the role of protective factors - particularly social connectedness:</p> <ul style="list-style-type: none"> - This research demonstrates that gambling is part of youth culture in New Zealand. It provides the first body of data detailing the practices, beliefs, and other factors associated with adolescent gambling behaviour within New Zealand. - The findings indicate that choices around gambling are strongly influenced by contextual factors and that young New Zealander's participate in a wide variety of gambling modes. While most gamble safely, approximately four percent were observed to satisfy the problem gambling criteria. - Social connectedness was strongly correlated to problem gambling behaviour and the research points towards the investigation of protective factors, resiliency, and strengths-based strategies in the future. 	<p>While there is potential for further analyses of data from this study to be carried out, extensive analysis has already been completed.</p>
<p>Provider / Author: Auckland University of Technology</p> <p>Project Title: Pacific Islands Families Longitudinal Study (PIFS)</p> <p>Project Details: The Pacific Islands Families Study is following a cohort of Pacific children (N=1398) and their families. The cohort was drawn from Middlemore Hospital in South Auckland from 15 March to 17 December 2000 and is made up of respondents from a community population. Data collection is ongoing and the study has followed individuals and families prospectively over several time/measurement points, including: six weeks after the child's birth; 12 months; 24 months; 4 years; 6 years; & 9 years. Data is currently being collected for the 11 year measurement point.</p> <p>At the time of this report, gambling related data had been gathered with regard to parents and 9 year olds.</p>	<p><i>n/a</i> - at the time of this report, data from <i>the PIFS study</i> was not able to add to current knowledge on youth gambling / limited data suitable for further analysis regarding youth gambling at present. However, data from the <i>PIFS study</i> will provide useful information in the future on gambling levels, familial context, patterns / trends, and risk / resiliency factors.</p>

<p>Provider / Author: University of Auckland</p> <p>Project Title: Growing Up in New Zealand</p> <p>Project Details: Growing Up in New Zealand is a longitudinal study of New Zealand-born children, led by the University of Auckland, to follow a group of 7,000 children from before they are born until they become adults (about 20 years old). Data collection began in 2009 and the next data collection phase is scheduled for April 2011 (by which time the children will be 2 years old). Data collection will then be scheduled for every 12-18 months. Children are scheduled to first be asked questions when they are around 6 years old.</p>	<p><i>n/a</i> - at present, data from the <i>Growing up in NZ study</i> is not able to add to current knowledge on youth gambling / no data suitable for further analysis regarding youth gambling at present. However, data from the <i>Growing up in NZ study</i> may provide useful data in the future on gambling levels, patterns/trends, or risk and resiliency factors.</p>
<p>Provider / Author: Massey University (SHORE)</p> <p>Project Title: Assessment of the Social Impacts of Gambling in New Zealand (2008)</p> <p>Project Details: SHORE's Assessment of the Social Impacts of Gambling in New Zealand, entailed a telephone survey (CATI) of 7010 respondents, aged 15-80 years living in private residential dwellings (NB: NO indication/breakdown of sample for those aged 15-17). An analysis of results by youth age group (15-17 years) has been reported (see p 40-41 of report).</p> <ul style="list-style-type: none"> - Difficult to ascertain from report a detailed scope of questionnaire (copy not provided in report). Data was gathered in relation to: Participation in gambling; Volume of time participating in gambling; Gambling losses; Loss to income ratio; Categorisation by gambling levels; Quality of life domains; Perceived impact of gambling on domains of life; Gambling by others; Perceived impacts of gambling by others on domains of life; Illegal activity; Perceived impact of gambling on illegal activity; Ethnicity; Education. - No data gathered on potential risk and protective factors that are non-gambling specific (e.g. social support systems etc). <p>NB: SHORE also completed a pilot or pre-cursor study in 2006: Socio-Economic Impacts of Gambling: Developing a methodology for assessing the socio-economic impacts of gambling in New Zealand</p>	<p><i>n/a</i> – analyses of youth data from this study has already been completed</p>
<p>Provider / Author: Auckland University of Technology</p> <p>Project Title: Barriers to Help Seeking Behaviours</p> <p>Project Details: <i>n/a</i></p>	<p><i>n/a</i> – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Auckland University of Technology</p> <p>Project Title: Formative Investigation between gambling (including PG) and Crime in NZ</p> <p>Project Details: <i>n/a</i></p>	<p><i>n/a</i> – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Auckland University of Technology</p> <p>Project Title: Screening and Assessment Project</p> <p>Project Details: <i>n/a</i></p>	<p><i>n/a</i> – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>

<p>Provider / Author: The University of Auckland</p> <p>Project Title: Effectiveness of Intervention Services for Problem Gambling</p> <p>Project Details: n/a</p>	<p>n/a – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Research New Zealand</p> <p>Project Title: Research into Problem Gambling Approaches</p> <p>Project Details: n/a</p>	<p>n/a – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Research New Zealand</p> <p>Project Title: Problem Gambling Strategic Outcomes Framework And Monitoring And Evaluation Framework Projects</p> <p>Project Details: n/a</p>	<p>n/a – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Te Runanga O Kirikirioa Charitable Trust</p> <p>Project Title: The Impacts of Gambling (including PG) on Māori Communities</p> <p>Project Details: n/a</p>	<p>n/a – no data suitable for further analysis regarding youth gambling (a very small amount of qualitative data relating to youth gambling was gathered)</p>
<p>Provider / Author: Auckland University of Technology</p> <p>Project Title: A formative investigation into the effectiveness of gambling venue exclusion processes in New Zealand</p> <p>Project Details: n/a</p>	<p>n/a – no youth data gathered / no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Health Sponsorship Council</p> <p>Project Title: 2006/07 Gaming and Betting Activities Survey (GBAS)</p> <p>Project Details: The GBAS was a nationwide survey of New Zealand adult and youth. A total of 1,973 face to face interviews were conducted in peoples' homes. The survey sample was a nationwide, multi-stage, random probability sample of adults aged 18 years and over. A sample of 15-17 year olds was also obtained by sampling young people who lived in the same households as the adult participants.</p> <ul style="list-style-type: none"> - NB: A secondary analysis of the GBAS youth data was completed in 2009 by Rossen, Tse & Vaidya (University of Auckland), as part of a MOH funded researcher initiated project - "A secondary analysis of two Data subsets, Youth and Asian, from the 2006/07 Gaming and Betting Activities Survey". 	<p>n/a - secondary analyses of youth data from GBAS has already been carried out</p>
<p>Provider / Author: Ministry of Health</p> <p>Project Title: A Focus on Problem Gambling: Results of the 2006/07 New Zealand Health Survey (NZHS)</p> <p>Project Details: A survey with target population of non-institutionalised people aged 15 years and over living in permanent private dwellings. Data was collected from 4921 children (aged from birth to 14 years) and 12,488 adults (aged 15 years and over):</p>	<p>n/a - analyses of youth data from NZHS has been completed</p>

<ul style="list-style-type: none"> - Gambling information gathered on: past 12 month participation; participation according to gambling mode; problem gambling for those aged 15 and over (CPGI); and effects of other persons' gambling (by mode). No data gathered in NZHS on 'social' variables that could be protective in nature for youth PG (e.g. social support etc). - Extensive analysis has already been conducted on gambling items (participation; modes; PG etc). - Most results have been presented according to youth age brackets - e.g. 15-17 years; 18-24 years: gambling last 12 months; modes of gambling (p 30-34); problem gambling (p 48); experienced problems due to someone else's gambling (p 79). - Some estimates have been based on legal age limits (see p 32), no information gathered on informal modes (bets with friends etc). - NB: Similar report published on 2002/03 NZ Health Survey. 	
<p>Provider / Author: University of Otago</p> <p>Project Title: The Dunedin Multidisciplinary Health and Development Study</p> <p>Project Details: Longitudinal study being run by the Dunedin Multidisciplinary Health and Development Research Unit. Original data was collected from a cohort of people born in Dunedin's Queen Mary's Hospital in 1972/73. The study cohort is currently 38 years of age. Assessment of gambling was first included in Phase 32 (32 years of age, 2003-2005); does not appear to have been included in the subsequent/current phase (Phase 38, 38 years of age, 2010-2012). An offshoot study (Next Generation Study) is currently inviting children (aged 15 or 16) of the original participants to undergo assessment; gambling is one of the behaviours scheduled to be assessed in this phase (Phase 38, 2010-2012).</p>	<p>n/a – no data suitable for further analysis regarding youth gambling at present. However, the <i>Next Generation Study</i> may provide useful gambling data in the future.</p>
<p>Provider / Author: University of Otago - Christchurch</p> <p>Project Title: Christchurch Health and Development Study</p> <p>Project Details: A longitudinal study of 1,265 children born in the Christchurch (New Zealand) urban region during mid 1977. No indication that gambling has been included as a research topic.</p>	<p>n/a – no data suitable for further analysis regarding youth gambling</p>
<p>Provider / Author: Massey University</p> <p>Project Title: Best Outcomes for Māori , Te Hoe Nuku Roa</p> <p>Project Details: A longitudinal study of Māori households with a focus on cultural, economic and personal factors. Began in July 1994, with 700 Māori households and more than 1600 individuals. No indication that gambling has been included as a research topic.</p>	<p>n/a – no data suitable for further analysis regarding youth gambling</p>

<p>Provider / Author: Victoria University</p> <p>Project Title: Youth Connectedness Project</p> <p>Project Details: A mixed-method, cross-lagged longitudinal research project that is being run by the Roy McKenzie Centre. The project has a focus on connectedness and followed approximately 2000 young people in three cohorts (aged 10, 12 and 14) for three years. Data collection began in 2006 and has now been completed. Gambling was not included as a research topic.</p>	<p>n/a – no data suitable for further analysis regarding youth gambling</p>
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3.3 Conclusions

As outlined in Table 6, the *Youth'07 - The Second National Health and Wellbeing Survey of New Zealand Secondary School Students* study was identified as the dataset with the most potential for a secondary analysis to inform on levels, patterns and trends of youth gambling in New Zealand. In addition to being nationally representative of secondary school students, a significant advantage of the *Youth'07* dataset is the diverse range of information pertaining to health and wellbeing issues (e.g. depression, AoD, social connectedness, emotional health etc). In conjunction with the gambling data, this information was identified as being most able to contribute to the identification of risk and resiliency factors for youth gambling.

4. PHASE THREE - SECONDARY ANALYSIS OF YOUTH DATA FROM AN EXISTING DATASET

As outlined in Chapter 3, the scoping exercise (Phase Two) identified the *Youth'07 - The Second National Health and Wellbeing Survey of New Zealand Secondary School Students* study as having the dataset with the most potential for a secondary analysis to inform on levels, patterns and trends of youth gambling in New Zealand, including the identification of risk and resiliency factors. Following agreement from the MoH to focus on the *Youth'07* dataset, access to the dataset was pursued.

4.1 Methodology and Methods

A Data Access Request (DAP) was made to the University of Auckland's Adolescent Health Research Group (AHRG) in line with their Data Access Policy. Details regarding this process can be found on the Youth2000 website: <http://www.youth2000.ac.nz/need-more-information-info-for-researchers/accessing-the-data-1156.htm>.

4.1.1 Recruitment & Sample, Data Collection Procedures & Instruments - An Overview of Youth07 Methodology

The Youth'07 survey was carried out between March and October 2007. A total of 96 randomly selected secondary schools (84% of schools invited to participate) from throughout New Zealand took part and data was collected from 9,107 randomly selected students (74% of students invited to participate). The final sample represents 3.4% of the total 2007 New Zealand secondary school role.

The survey was administered via internet tablets (hand held computers) which allowed the questionnaire to be presented in an audio-visual format. A total of 622 questions were included, although most students did not answer the full number of questions due to the questionnaires branching design (i.e. students only answered questions that were relevant to them). In addition

to demographics, data was gathered in relation to a broad range of health and wellbeing topics, including: alcohol and other drug use, gambling, injuries, sexual health issues, mental health, nutrition and exercise, and health care access. Data was also gathered in relation to a number of factors known to influence positive outcomes for young people. These included relationships and connectedness within family, school and community environments.

A full discussion of the Youth'07 methodology can be found in the Youth'07 Technical Report (Adolescent Health Research Group, 2008) which can be downloaded from <http://www.youth2000.ac.nz/publications/reports-1142.htm>.

4.1.2 Data Analysis and Interpreting the Results

All statistical analyses reported in this section of the report (Chapter 4) were carried out using SAS software (version 9.1.2) (SAS Institute Inc., 2004). Prevalence estimates and 95% confidence intervals were calculated and reported for the prevalence of gambling related behaviours (i.e. gambled in the last year, modes of gambling, frequency of gambling, money spent on gambling, time spent on gambling, reasons for gambling) for the whole population and important subgroups where numbers permitted (by age, gender, ethnicity, socioeconomic background). Prevalence estimates and 95% CI have been presented in relation to the entire sample (i.e. as a proportion of all students who took part in the survey) as well as in relation to those students who had gambled in the past 12 months (i.e. as a proportion of 'gamblers'). Logistic regression models were used to investigate associations between gambling behaviour and demographics; a P-value of .05 was utilised as a measure of statistical significance for all statistical tests. All analyses have accounted for the sample design and clustering effects within schools.

4.1.3 Interpreting the Results

A number of parameters are detailed when reporting the statistics in this section of the report. In the tables for each item, we report 'N', which refers to the total number of students who

answered that particular question in the survey. Each table then provides weighted percentages (%) and the number of students reporting each response category ('n'). We have also reported 95% Confidence Intervals ('95% CI'). These confidence intervals provide an indication of the precision of the percentage results by providing an interval in which we are relatively sure that the true value lies (i.e. we are 95% confident that the actual prevalence for that response/category lies between the two values provided). A wide confidence interval indicates more uncertainty in the percentage results than a small interval. Significant associations (as measured by logistic regressions) have also been highlighted in the relevant sections of text and tables of the report.

4.2 Results

The results in this chapter have been reported under the following headings: The participants; Gambling behaviour over the last year; Frequency of gambling; Money spent on gambling; Time spent on gambling; Modes of gambling; and, Reasons for gambling.

4.2.1 The Participants

As part of the Youth'07 questionnaire, all students were asked the question "In the last year have you ever gambled or bet money on things like Lotto, Instant Kiwi, Pokies etc, or bet money with friends?" Of the 9,107 students who took part in Youth'07, a total of 8,391 students responded to this question. Approximately one-quarter (26.7%) of these students indicated that they had engaged in some form of gambling in the last year.

4.2.2 Gambling Behaviour over the Last Year

As outlined in Table 7, some differences were observed in the prevalence of gambling over the past year according to gender and age.

A significant association was observed between sex (male/female) and gambling status with a higher proportion of males (31.3%) than females (21.5%) having gambled over the past year. As

might be expected, there was also a significant association between age and gambling status, with a general trend for the proportion of students reporting gambling to increase with age; from 24.9% of those aged '13 or less' to 31.9% of those aged '17 or older'.

No significant associations were observed between gambling status and ethnicity; approximately one quarter of students from each ethnic group had gambled over the past year.

Table 7: Prevalence of gambling in the last year by demographics

		Gambled in the last year	
		n	% (95% CI)
Total (N=8,391)		2,234	26.7 25.4 - 28.1
By Sex *	Male	1,395	31.3 29.4 - 33.1
	Female	839	21.5 19.9 - 23.1
By Age *	13 or less	418	24.9 22.6 - 27.3
	14	454	23.7 21.5 - 25.8
	15	478	26.2 24.0 - 28.4
	16	459	28.5 25.9 - 31.1
	17 or older	425	31.9 28.9 - 34.9
By Ethnicity	European	1,264	28.1 26.4 - 29.8
	Māori	389	25.6 22.9 - 28.3
	Pacific	181	23.1 19.4 - 26.8
	Asian	267	25.0 23.0 - 27.0
	Other	132	27.0 22.7 - 31.4

* Indicates a significant association ($p \leq 0.05$) between the demographic variable and having gambled in the past year.

Gambling status was also significantly associated with level of deprivation. As outlined in Table 8, there was a general trend for greater participation in gambling as the level of deprivation decreased: a greater proportion of students living in a neighbourhood with low levels of

deprivation (28.2%) had gambled over the last year, in comparison to students living in neighbourhoods with high levels of deprivation (23.3%).

No differences were observed according to geography: equal proportions of students living in urban and rural areas had gambled over the past year.

Table 8: Prevalence of gambling in the last year by neighbourhood characteristics

		Gambled in the last year	
		n	% (95% CI)
By Deprivation Level (NZDep2006) *	Low	868	28.2 26.3 - 30.1
	Medium	879	27.5 25.4 - 29.6
	High	469	23.3 21.3 - 25.4
By Geography	Urban	1,853	26.7 25.4 - 28.0
	Rural	363	27.0 23.7 - 30.4

* Indicates a significant association ($p \leq 0.05$) between the demographic variable and having gambled in the past year.

4.2.3 Frequency of Gambling

Students that indicated that they had gambled in the last year, were also asked the question “During the last four weeks, about how often did you gamble?” A total of 2,223 students answered this question, with 594 indicating that they had gambled at least once within the past four weeks. This equates to 7.1% of the entire sample and 26.7% of those who were classified as ‘gamblers’ (i.e. they had gambled over the past year). Table 9 provides further details.

Gender was significantly associated with frequency of gambling: a greater proportion of males (9.6%) than females (4.3%) indicated that they had gambled in the past four weeks. Age was also significantly associated, with an overall trend that as age increased, so too did the proportions of students who had gambled in the previous four weeks. The proportion of students who had gambled within this period ranged from 10.6% for those in the oldest age bracket (17 or older) to 5.4% for those in the youngest age bracket (aged 13 or less).

Ethnicity was significantly associated with recent gambling, with the proportions of students who had gambled in the past four weeks ranging from 4.9% for Asian students to 7.9% for European students.

Table 9: Prevalence of gambling in the past 4 weeks by demographics (of Total Sample and Gamblers Only)

		Students who have gambled in the past 4 weeks		
		n	Of total sample ¹³	Of gamblers only ¹⁴
			% (95% CI)	% (95% CI)
Total (N=2,223)		594	7.1 6.3 - 7.9	26.7 24.4 - 29.1
By Sex *	Male	425	9.6 8.5 - 10.7	30.7 28.0 - 33.4
	Female	169	4.3 3.6 - 5.0	20.1 17.2 - 23.0
By Age *	13 or less	90	5.4 4.2 - 6.6	21.8 17.6 - 26.1
	14	104	5.4 4.4 - 6.4	23.1 19.6 - 26.7
	15	133	7.3 5.9 - 8.6	27.7 23.1 - 32.4
	16	126	7.9 6.2 - 9.6	27.6 22.7 - 32.5
	17 or older	141	10.6 8.4 - 12.8	33.1 27.7 - 38.6
By Ethnicity *	European	354	7.9 6.8 - 9.0	28.2 25.3 - 31.0
	Māori	113	7.4 6.0 - 8.8	29.1 24.7 - 33.4
	Pacific	41	5.2 2.9 - 7.5	22.7 14.6 - 30.7
	Asian	52	4.9 3.5 - 6.3	19.6 14.0 - 25.1
	Other	34	6.9 4.9 - 8.9	26.5 19.4 - 33.7

* Indicates a significant association ($p \leq 0.05$) between the demographic variable and having gambled in the past four weeks.

¹³ The figures reported in this column represent proportions in relation to the entire sample (i.e. 'gamblers' and 'non-gamblers'). This categorisation will be utilised for further tables throughout the report.

¹⁴ The figures reported in this column represent proportions in relation to those students who indicated that they had gambled in the last year (i.e. 'gamblers'). This categorisation will be utilised for further tables throughout the report.

As illustrated in Table 10, no significant differences were observed in gambling involvement over the past four weeks according to neighbourhood characteristics; comparable proportions of students had gambled in the past four weeks, regardless of neighbourhood deprivation level and urban/rural status.

Table 10: Prevalence of gambling in the past 4 weeks by neighbourhood characteristics (of Total Sample and Gamblers Only)

		Students who have gambled in the past 4 weeks		
		n	Of total sample	Of gamblers only
			% (95% CI)	% (95% CI)
By Deprivation Level (NZDep2006)	Low	236	7.7 6.4 - 9.0	27.4 23.6 - 31.2
	Medium	226	7.1 5.9 - 8.2	25.9 22.6 - 29.1
	High	130	6.4 5.1 - 7.8	27.6 23.3 - 31.9
By Geography	Urban	496	7.2 6.3 - 8.0	26.9 24.3 - 29.5
	Rural	96	7.1 5.3 - 8.9	26.5 21.1 - 31.9

4.2.4 Money Spent on Gambling

Students who had gambled over the past year were asked a question regarding the amount of money they would typically spend on gambling: “How much money would you usually spend each week on bets or gambling?” In total, 2,238 participants answered this question, with 111 students indicating that they spend \$20 or more on gambling in a typical week. This equates to 1.1% of the total sample and 5.0% of those classified as gamblers.

As illustrated in Table 11, no differences in weekly expenditure were observed according to age, with less than one and a half percent of students in each age bracket spending \$20 or more on gambling in a typical week. Male students were significantly more likely than their female counterparts to report spending \$20 or more on gambling in a typical week.

Ethnicity was significantly correlated with weekly expenditure. Compared to European students (0.7%) greater proportion of both Māori (2.2%) and Pacific (2.8%) students indicated that they spend \$20 or more on gambling in a typical week.

Table 11: Money spent gambling in a typical week by demographics (of Total Sample and Gamblers Only)

		Spent \$20 or more on gambling in a typical week		
		n	Of total sample	Of gamblers only
			% (95% CI)	% (95% CI)
Total (N=2,238)		111	1.3 1.1 - 1.6	5.0 4.0 - 6.0
By Sex *	Male	93	2.1 1.6 - 2.5	6.6 5.2 - 8.1
	Female	18	0.5 0.2 - 0.7	2.2 1.1 - 3.2
By Age	13 or less	23	1.4 0.8 - 2.0	5.5 3.0 - 8.0
	14	24	1.2 0.8 - 1.7	5.3 3.3 - 7.2
	15	28	1.5 0.9 - 2.1	5.9 3.6 - 8.1
	16	18	1.1 0.5 - 1.7	3.9 1.8 - 6.0
	17 or older	18	1.4 0.8 - 1.9	4.2 2.5 - 6.0
By Ethnicity *	European	33	0.7 0.5 - 1.0	2.6 1.8 - 3.4
	Māori	34	2.2 1.5 - 3.0	8.7 6.0 - 11.4
	Pacific	22	2.8 1.6 - 4.0	12.1 7.2 - 17.0
	Asian	15	1.4 0.7 - 2.1	5.6 2.7 - 8.4
	Other	7	1.4 0.3 - 2.6	5.5 1.3 - 9.6

* Indicates a significant association ($p \leq 0.05$) between the demographic variable and having spent \$20 or more on gambling in a typical week.

No significant associations were found between the amount of money spent on gambling and neighbourhood characteristics. See Table 12 for further details.

Table 12: Money spent gambling in a typical week by neighbourhood characteristics (of Total Sample and Gamblers Only)

		Spent \$20 or more on gambling in a typical week		
		n	Of total sample	Of gamblers only
			% (95% CI)	% (95% CI)
By Deprivation Level (NZDep2006)	Low	25	0.8 0.5 - 1.1	2.9 1.9 - 3.9
	Medium	44	1.4 0.9 - 1.9	5.1 3.4 - 6.7
	High	40	2.0 1.4 - 2.5	8.4 5.9 - 10.8
By Geography	Urban	96	1.4 1.1 - 1.7	5.2 4.1 - 6.3
	Rural	13	0.9 0.4 - 1.4	3.5 1.6 - 5.4

4.2.5 Time Spent on Gambling

In total, 2,233 students answered the question “How much time a day would you usually spend each day on bets or gambling?” As illustrated in Table 13, approximately 100 students (1.2% of the total sample; 4.5% of those who had gambled in the past year) indicated that in a typical week they would spend 30 minutes or more a day gambling.

There were no significant differences observed between age and the amount of time spent gambling. However, gender was significantly associated with the amount of time spent gambling, with a greater proportion of males (1.9%) indicating that they spent 30 minutes a day or more on gambling activities than females (0.4%). This finding is consistent with the gender difference found with regard to the amount of money spent on gambling (Section 4.2.4).

A significant association was observed between Ethnicity and the amount of time spent gambling. European students were the least likely to spend more than 30 minutes a day on

gambling activities. Neighbourhood deprivation was not significantly associated with the amount of time that students reported gambling.

Table 13: Time spent gambling per day by demographics and neighbourhood characteristics (of Total Sample and Gamblers Only)

		Spent 30 minutes a day or more on gambling in a typical week		
		n	Of total sample	Of gamblers only
			% (95% CI)	% (95% CI)
Total (N=2,233)		99	1.2 0.9 - 1.5	4.5 3.4 - 5.5
By Sex *	Male	83	1.9 1.4 - 2.3	6.0 4.4 - 7.5
	Female	16	0.4 0.2 - 0.6	1.9 1.0 - 2.9
By Age	13 or less	19	1.1 0.6 - 1.7	4.5 2.3 - 6.8
	14	29	1.5 1.0 - 2.1	6.5 4.2 - 8.8
	15	23	1.3 0.7 - 1.8	4.8 2.6 - 7.0
	16	11	0.7 0.3 - 1.1	2.4 1.0 - 3.8
	17 or older	17	1.3 0.7 - 1.9	4.0 2.1 - 5.9
By Ethnicity *	European	26	0.6 0.3 - 0.8	2.1 1.2 - 2.9
	Māori	35	2.3 1.6 - 3.1	9.0 6.0 - 12.0
	Pacific	18	2.3 1.2 - 3.4	10.0 5.1 - 14.9
	Asian	15	1.4 0.4 - 2.4	5.6 1.8 - 9.5
	Other	5**	1.0 0.0 - 2.1	3.9 0.1 - 7.7
By Deprivation Level (NZDep2006)	Low	23	0.8 0.4 - 1.1	2.7 1.4 - 3.9
	Medium	35	1.1 0.7 - 1.6	4.0 2.4 - 5.6
	High	39	1.9 1.4 - 2.5	8.3 5.8 - 10.8

* Indicates a significant association ($p \leq 0.05$) between the demographic variable and having spent 30 minutes a day or more on gambling in a typical week.

** Treat with caution due to small cell size.

4.2.6 Modes of Gambling

Just over two thousand students (2,222) completed the question 'In the last year have you gambled or bet money on any of these? (you can choose as many as you need)'. Table 14 lists the gambling modes that were available as response options and provides overall rates of participation for mode, along with a breakdown of participation by sex and age. Ethnicity, deprivation level and geographical category were not included in this set of analyses due to small numbers.

The most 'popular' modes (i.e. those that were endorsed the most) included bets with friends, instant kiwi, cards or coins, and Lotto (including Strike, Powerball etc).

While significance testing was not undertaken for these items, the 95% confidence intervals indicate that greater proportions of male than female students had gambled on the following six modes: pub or club EGMs; casino EGMs or tables; internet gambling; bets with friends; 0900 phone games; and cards/coins. Instant Kiwi was the only mode on which a greater proportion of females than males had gambled on in the past year (54.7% and 38.7% respectively).

There was a general trend for the proportions of students gambling on the following modes to increase with age: Instant Kiwi, Lotto (including Strike and Powerball etc), TAB betting, and Pub or club EGMs.

Table 14: Modes of gambling in the past year by demographics and neighbourhood characteristics* (N=2,222)

	Total		By Sex		By Age				
			Male	Female	≤ 13	14	15	16	≥ 17
	n	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Bets with friends	1,363	61.4 59.3 - 63.5	65.1 62.6 - 67.6	55.2 52.1 - 58.4	64.9 60.5 - 69.4	61.0 55.7 - 66.4	60.6 55.8 - 65.4	64.6 60.0 - 69.2	55.7 50.3 - 61.2
Instant Kiwi (scratchies)	995	44.7 41.6 - 47.9	38.7 35.2 - 42.3	54.7 50.9 - 58.5	38.1 33.5 - 42.8	40.7 35.6 - 45.9	44.0 38.9 - 49.1	47.8 42.6 - 53.0	52.9 46.7 - 59.1
Cards or coins	502	22.7 20.9 - 24.5	27.5 25.0 - 29.9	14.7 12.3 - 17.1	22.1 17.8 - 26.4	24.1 19.9 - 28.4	25.6 21.6 - 29.6	19.2 16.0 - 22.3	22.2 17.5 - 26.9
Lotto (including Strike, Powerball etc)	458	20.7 18.8 - 22.6	19.7 17.2 - 22.2	22.3 19.3 - 25.4	13.6 10.0 - 17.1	15.1 10.6 - 19.5	22.7 18.6 - 26.8	21.3 17.4 - 25.3	30.7 26.4 - 35.0
TAB betting	256	11.5 9.8 - 13.2	12.7 10.6 - 14.8	9.6 7.2 - 12.0	8.5 5.9 - 11.1	10.1 7.2 - 13.1	13.4 9.7 - 17.1	9.7 6.4 - 12.9	15.8 12.3 - 19.4
Other	240	10.8 9.5 - 12.2	12.1 10.2 - 13.9	8.8 7.0 - 10.5	12.9 9.7 - 16.0	13.6 9.9 - 17.3	11.9 9.1 - 14.8	7.7 5.1 - 10.3	8.0 5.6 - 10.5
Pub or Club EGMs	161	7.2 6.0 - 8.5	8.7 7.0 - 10.3	4.8 3.5 - 6.1	5.6 3.1 - 8.0	6.7 4.1 - 9.4	4.8 2.7 - 6.9	7.5 5.1 - 9.8	11.7 8.4 - 15.1
Internet	120	5.4 4.4 - 6.4	7.1 5.6 - 8.6	2.6 1.6 - 3.5	5.7 3.5 - 7.9	6.0 3.7 - 8.4	5.9 3.6 - 8.2	4.4 2.5 - 6.2	5.0 2.6 - 7.4
Bingo or Housie	108	4.8 3.6 - 6.0	5.5 4.1 - 7.0	3.6 2.0 - 5.2	6.3 4.1 - 8.5	5.7 3.0 - 8.3	5.9 3.7 - 8.1	2.9 1.3 - 4.4	3.3 1.4 - 5.2
Casino EGMs or tables	82	3.7 2.9 - 4.5	4.7 3.5 - 5.9	2.1 1.3 - 2.8	2.9 1.3 - 4.5	3.1 1.4 - 4.9	3.8 1.7 - 6.0	3.1 1.6 - 4.5	5.7 3.6 - 7.8
0900 Phone games	54	2.4 1.7 - 3.1	3.3 2.2 - 4.3	1.0 0.4 - 1.7	4.0 2.3 - 5.7	2.9 1.2 - 4.6	2.3 0.9 - 3.7	0.9 0.0 - 1.7	2.1 0.7 - 3.5

* Among students who gambled in the past year. Students could choose more than one mode / response option.

4.2.7 Reasons for Gambling

A question was also included to elicit the reasons behind students' gambling behaviour: 'Why do you gamble or bet money? (you can choose as many as you need)'. This was a multiple response item, with students being able to choose as many of the response options as they wanted (see Table 15 for response options and detailed distributions). A total of 2,196 students responded to this question, with the two most frequently cited reasons for gambling being 'to

have fun' (66.5%) and 'to win money' (53.0%). The least endorsed reasons included 'because I am short of money' (4.0%), 'to forget about things' (3.7%), 'to feel better about myself' (2.9%), and 'because I can't stop' (1.6%).

Table 15 provides overall rates of reasons for gambling, along with a breakdown of participation by sex and age. As with the breakdown of reasons for gambling, ethnicity, deprivation level and geographical category were not included in this set of analyses due to small numbers. Significance testing was also not undertaken for these items.

However, the 95% confidence intervals indicate that greater proportions of males than females endorsed the following reasons for gambling: 'to have fun'; 'for a challenge'; and, 'to relax'.

There was also a general trend for the proportion of students indicating that they gamble 'to forget about things' to decrease with age (i.e. greater proportions of younger students than older students said they gamble for this reason). Table 15 provides detailed response distributions for each of the reasons for students' gambling by demographics and neighbourhood characteristics.

Table 15: Reasons for gambling by demographics and neighbourhood characteristics* (N=2,196)

	Total		By Sex		By Age				
			Male	Female	≤ 13	14	15	16	≥ 17
	n	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
To have fun	1,458	66.5 64.3 - 68.6	70.1 67.6 - 72.5	60.5 57.2 - 63.8	60.1 55.2 - 65.0	64.0 60.2 - 67.7	70.1 65.9 - 74.4	69.2 64.6 - 73.8	68.1 63.3 - 72.8
To win money	1,162	53.0 50.9 - 55.1	54.2 51.4 - 56.9	51.0 48.2 - 53.7	49.3 44.6 - 53.9	53.1 48.2 - 58.1	53.5 49.0 - 58.0	54.1 50.0 - 58.2	54.5 49.4 - 59.7
For a challenge	538	24.5 22.2 - 26.9	27.9 25.3 - 30.4	19.0 16.2 - 21.7	25.2 20.6 - 29.7	22.0 17.8 - 26.3	25.8 21.7 - 29.9	25.1 20.6 - 29.7	24.5 20.1 - 29.0
Because I am bored	472	21.4 19.2 - 23.5	20.4 17.8 - 22.9	23.1 19.8 - 26.4	22.8 18.3 - 27.2	23.8 18.8 - 28.8	23.1 18.8 - 27.3	18.7 15.6 - 21.8	18.5 15.0 - 22.1
To get a buzz	261	11.9 10.4 - 13.3	13.2 11.4 - 15.0	9.7 7.4 - 12.1	13.2 9.3 - 17.1	11.6 8.4 - 14.9	8.9 6.1 - 11.8	11.0 8.3 - 13.6	15.2 11.3 - 19.1
To relax	131	6.0 4.8 - 7.1	7.8 6.3 - 9.3	2.9 1.8 - 4.1	7.5 4.8 - 10.2	5.7 3.5 - 7.9	6.2 4.1 - 8.3	4.2 2.0 - 6.5	6.4 3.8 - 9.0
Because my friends do	122	5.6 4.6 - 6.6	6.2 4.9 - 7.5	4.5 3.0 - 6.0	6.2 3.7 - 8.7	6.1 3.9 - 8.4	4.5 2.6 - 6.3	5.5 3.3 - 7.8	5.6 3.4 - 7.7
Because my family does	101	4.6 3.6 - 5.6	3.7 2.5 - 5.0	6.1 4.6 - 7.5	4.0 2.2 - 5.8	7.1 4.6 - 9.6	4.4 2.4 - 6.5	3.1 1.1 - 5.1	4.5 2.5 - 6.5
Because I am short of money	88	4.0 3.1 - 4.8	4.5 3.3 - 5.6	3.2 2.0 - 4.3	5.4 3.4 - 7.5	4.1 2.3 - 5.9	4.7 2.8 - 6.6	2.4 1.1 - 3.6	3.3 1.4 - 5.2
To forget about things	82	3.7 2.9 - 4.5	4.2 3.1 - 5.4	2.8 1.7 - 4.0	6.0 3.9 - 8.2	5.2 3.1 - 7.4	3.4 1.7 - 5.1	2.0 0.5 - 3.5	2.1 0.8 - 3.5
To feel better about myself	65	2.9 2.2 - 3.7	3.6 2.5 - 4.6	1.9 0.9 - 2.9	3.8 1.9 - 5.7	3.9 1.8 - 5.9	3.2 1.5 - 4.9	1.5 0.3 - 2.8	2.4 1.0 - 3.7
Because I can't stop	35	1.6 1.0 - 2.1	1.9 1.1 - 2.7	1.0 0.3 - 1.7	2.3 0.7 - 3.8	2.3 0.9 - 3.8	1.5 0.2 - 2.7	1.1**	0.7**

* Among students who gambled in the past year. Students could choose more than one response option.

** NB: The estimates in these cells are based on very small numbers – treat with caution.

5. DEFINING AN UNDERLYING CONSTRUCT OF GAMBLING BEHAVIOUR

Problem gambling behaviours have long been conceptualised as a continuum from less to more severe behaviours that can impact negatively on a person's life and psychosocial functioning. Historically, social scientists have used a battery of questions and scales to assess the degree of problem gambling behaviours. Until recently the formations of these scales have relied on reliability measures that assume questionnaire items are equivalent. More recently item response theory has been used to determine how items relate to the underlying construct of interest and allows researchers to ascertain how well individual items are able to discriminate between high and low levels of the underlying continuum. Modelling the probability of gambling behaviours along a latent dimension of 'less unhealthy' to 'more unhealthy' gambling behaviours, allows the development of a framework for evaluating which behaviours are more severe. Furthermore, the association between population demographics and variables that may fulfil risk and protective functions can be explored in relation to this underlying continuum.

5.1 Aims & Objectives

This phase of the analysis had the following three aims:

- To explore the existence of an underlying latent construct of gambling behaviour - i.e. an underlying latent continuum of gambling behaviours from 'less unhealthy' to 'more unhealthy'; and,
- To identify 'red flags', or concerning gambling behaviours, that increase an adolescents' risk of poor health outcomes.

5.2 Methods

5.2.1 Sample

As with the analyses outlined in Chapter 4, the investigations reported in this chapter were carried out with data collected as part of the Youth'07 study. A summary of the Youth'07 methodology and methods (including the sampling frame, data collection procedures and instruments) can also be found in Chapter 4 of this report. Only students who had gambled in the past year were included in this set of analyses.

5.2.2 Measures

Demographic variables included age, sex, and ethnicity; all of which were self-reported. All students who participated in Youth'07 were asked the question "In the last year have you ever gambled or bet money on things like Lotto, Instant Kiwi, Pokies etc, or bet money with friends?" Students who responded affirmatively were then asked a set of four questions to determine the extent of their gambling behaviour over the past year. These items asked about the frequency of gambling, the amount of time and money spent gambling, and their reasons for gambling.

'Unhealthy' gambling has been consistently associated with: a) higher levels of engagement with gambling; and, b) 'escapism' being a primary motivation for engaging with gambling activities. As such, seven gambling items were included in this set of analysis. Three items indicated higher levels of engagement in past-year involvement in gambling: gambling several times a week / most days; spending 1 or more hours per day gambling; and, spending \$20 or more a week on gambling. The remaining four related to reasons for gambling that centred on escapism: to relax; to feel better about myself; to forget about things; and, because I can't stop.

The WHO-Five Wellbeing Index (Bech et al., 2003) was used to assess students' wellbeing.

This Index is made up of five items that use a six point Likert scale, from 'at no time' (0) to 'all of

the time' (6). Three underlying constructs are measured: positive mood, vitality, and general interests. Response scores were summed to provide an overall score, with higher scores indicating greater wellbeing.

Depression was measured by the Reynolds Adolescent Depression Scale – short form (RADS) (Norris, 2007). This scale consists of ten items, each of which has four response options: 'almost never', 'hardly ever', 'sometimes', and 'most of the time'. The overall score provides an indication of affective status, with higher scores being an indicator of greater depressive symptomatology.

5.2.3 Data Analysis

In accordance with the research aims for this section of the report and the branching nature of the Youth'07 questionnaire, only students who had gambled within the past 12 months (N=2,234) were included in this set of analyses. Students who had gambled in the past year were significantly more likely to be male than female, from older age groups, and from neighbourhoods with low levels of deprivation. No differences were observed according to ethnicity or rural/urban category.

Factor analysis (FA), item response theory (IRT), and multiple indicators-multiple causes (MIMIC) analyses were undertaken using Mplus (Muthen and Muthen, 1998-2007). Factor analysis was used to assess dimensionality and the number of underlying factors. The relationship between participants responses to each item and their level on the underlying latent gambling continuum were examined using two-parameter logistic item-response theory models. Item characteristic curves (ICC) illustrated these relationships, which were characterised by item severity and discrimination parameters. Item severity provides an indication of the position of the item characteristic curve in relation to the latent continuum: higher severity values indicate that an item is associated with a higher severity of gambling behaviour (i.e. unhealthy gambling

behaviour). Discrimination parameters provide an indication of the accuracy or precision of each item in distinguishing between those participants with levels of the latent continuum above and those participants with levels below the item's severity. A low discrimination estimate indicates that an item is unrelated to the underlying construct or that the item is poorly defined.

MIMIC analyses were used to examine the relationship between demographic variables and the underlying continuum of problem gambling behaviours and predictors of unhealthy gambling behaviour.

DIF (Differential Item Functioning) by demographic variables (age, sex, ethnicity) was used to examine differences in how demographic groups respond to individual questions, independent of the underlying problem gambling continuum. The presence of DIF would indicate measurement non-equivalence or item response bias across groups.

All analyses accounted for the clustering of students within the same school and the unequal probability of selection.

5.3 Results

5.3.1 Underlying Latent Construct of Gambling Behaviours (Factor Analysis)

Exploratory factor analysis (EFA) was used to assess the dimensionality of the seven gambling behaviour items. The scree plot of the eigenvalues (5.301 0.838 0.294) and the ratio of the first to the second eigenvalue ($5.301/0.838 = 6.326$) suggest the presence of a single dominant factor underlying the seven gambling items. This one-factor model demonstrated excellent fit indices (CFI=0.982, TLI=0.973, RMSEA=0.047), and provided evidence of unidimensionality of the seven variables, meaning that it was suitable for IRT modelling. See Table 16 for details on item factor loadings, discrimination and severity parameters.

This factor is conceptualised as an underlying continuum of ‘unhealthy’ gambling behaviours and is consistent with motivations/reasons for gambling (centred on escapism and/or loss of control) and higher levels of expenditure (time, money and frequency) that previous research has consistently identified as indicators of unhealthy levels of gambling.

Table 16: Exploratory Factor Analysis of Gambling Behaviour Continuum

	Prevalence (%)	Factor loadings	Item discrimination		Item severity	
			Estimate	SE	Estimate	SE
I gamble to relax	6.0	0.848	1.603	0.133	1.841	0.068
I gamble to feel better about myself	2.9	0.981	5.044	1.913	1.928	0.060
I gamble to forget about things	3.7	0.914	2.246	0.256	1.954	0.073
I gamble because I can't stop	1.6	0.885	1.902	0.295	2.431	0.116
Gamble 'several times a week' or 'most days'	2.6	0.806	1.361	0.206	2.412	0.159
Spend \$20 or more per week on gambling	5.0	0.789	1.284	0.123	2.101	0.100
Spend 1 or more hours per day gambling	3.1	0.866	1.730	0.240	2.189	0.101

5.3.2 Identifying the Red Flags of Gambling Behaviour (Item Response Theory Model)

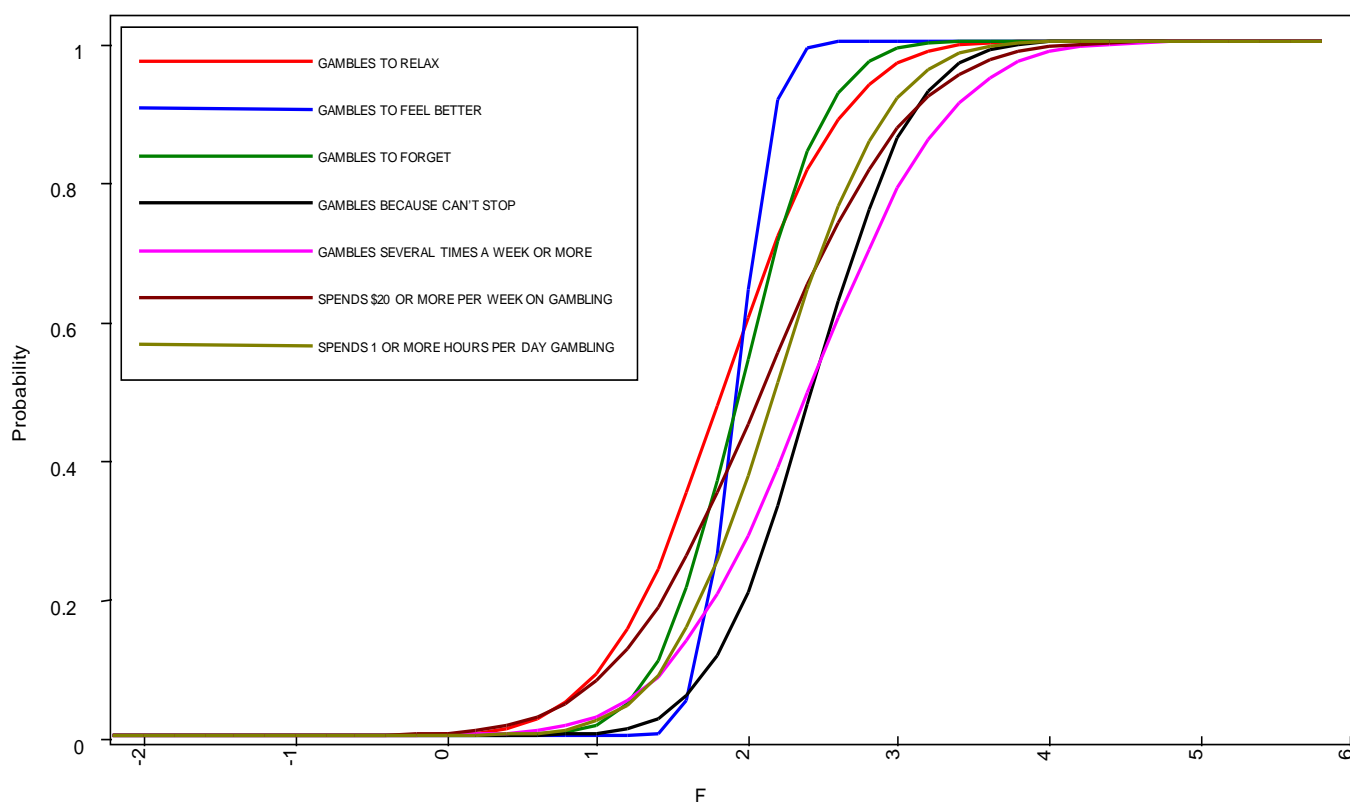
As indicated by the steep lines in Figure 1, the gambling items all exhibited good to high discriminative power (range 1.284 – 5.044) in distinguishing along the gambling continuum, from healthy to unhealthy behaviour.

With regard to individual discriminative power, the amount of money spent on gambling had the lowest item discrimination (1.284; note the least steep slope), meaning that it was least able to accurately discriminate students along the continuum of gambling behaviour. Gambling ‘to feel better about myself’ was the item with the highest discrimination (5.044, note the steepest slope

in Figure 1) and was most able to accurately discriminate students along the gambling continuum.

Item severity ranged between 1.841 ('gambling to relax') and 2.431 ('gamble because I can't stop') (see Table 16). 'Gambling to relax', 'gambling to feel better about myself', and 'gambling to forget about things' had the lowest item severities; these items may act as 'red flags' or early indicators that gambling behaviour is moving towards unhealthy levels.

Figure 1: Item Response Curve



5.3.3 Validating the Underlying Latent Gambling Dimension

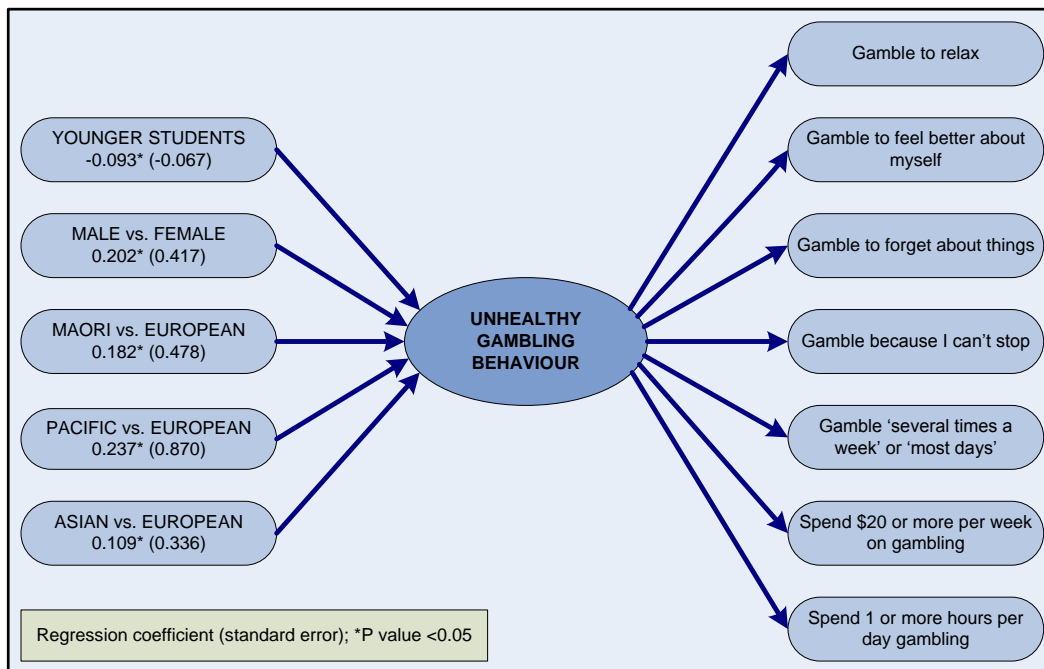
Standardised measures of depression (RADS) and wellbeing (WHO-Five Wellbeing Index) were used to validate the underlying latent gambling dimension; gambling behaviour was significantly correlated with both measures. 'More unhealthy' gambling behaviour was positively associated

with depression and negatively associated with wellbeing: students with ‘more unhealthy’ gambling behaviour had significantly higher depression scores ($r = 0.162$, $p < 0.000$) and significantly lower wellbeing scores ($r = -0.113$, $p < 0.000$) than students who were gambling at ‘less unhealthy’ levels.

5.3.4 MIMIC Modelling and Differential Item Functioning

MIMIC modelling was carried out to determine if there were significant direct effects between demographic variables (age, sex, and ethnicity) and the gambling items; i.e. whether any of the demographic subgroups were at increased or decreased risk of unhealthy gambling behaviours. The MIMIC model fit the data very well (CFI=0.979, TLI=0.973, RMSEA=0.030) and the following were associated with higher levels of unhealthy gambling behaviour: students in younger age groups, being male, and being Non-European. Differential Item Functioning (DIF) demonstrated item equivalence for the seven gambling items across the age, gender and ethnic groups of students.

Figure 2: MIMIC Model of Unhealthy Gambling Behaviour[‡]



[‡] Relates to students who have gambled in the past 12 months (N=2,234)

6. RISK AND PROTECTIVE FACTORS FOR GAMBLING BEHAVIOUR

Following the analyses in Chapter 5 to determine an underlying latent construct of gambling behaviour through item response theory, associations by population demographics and variables that may fulfil risk and protective functions were explored. Methods and results relating to this set of analyses are outlined in the current chapter.

6.1 Aims and Objectives

This phase of the analysis aims to explore and identify associations between gambling behaviour (as measured by the previously determined underlying latent construct of gambling behaviour), demographic variables, and variables that fulfil risk or protective functions.

6.2 Methods

6.2.1 Sample

As with the analyses carried out in Chapter 5, only students who had gambled in the past year were included in this set of analyses.

6.2.2 Measures

Measures relating to demographic variables, depression, and all of the gambling related items included in this set of analyses have been outlined previously (see Chapters 4 and 5).

Use of alcohol was assessed by a number of questions in Youth'07. Students who indicated that they had drunk alcohol at least once in their lifetime were also asked the question "During the past 4 weeks, about how often did you drink alcohol?" Responses to this item enabled identification of students who drink alcohol on a weekly basis, a measure that was included in this set of analyses.

Three measures of social connectedness were also included in this analysis; connectedness to family, friends, and school.

6.2.3 Data Analysis

This set of analysis entailed two steps:

- A *bivariate analysis* examined associations between the latent gambling continuum and variables; and,
- A *multivariate analysis* assessed associations between the latent gambling continuum, demographic variables, and the variables identified in the bivariate analyses as being significant.

The bivariate analyses were carried out using SAS software (version 9.1.2) (SAS Institute Inc., 2004) and the multivariate was completed in Mplus (Muthen and Muthen, 1998-2007). Each of these steps and the results are outlined in the following section.

6.3 Results

The bivariate analysis resulted in a preliminary set of ten variables (see Table 17 for details) that were associated with increased risk / higher scores on the gambling continuum (i.e. 'more unhealthy' gambling behaviour). Table 17 provides the mean scores on the gambling continuum for students who answered to yes to each of the risk variables. For instance, it can be seen that students who usually earn more than \$100 a week had a mean score on the gambling continuum of 0.05 (95% CI 0.03 – 0.06) compared with a mean score of 0.02 (95% CI 0.02 – 0.03) for those who did not.

Table 17: Bivariate Analysis – Variables Associated with Higher Scores on the Gambling Continuum

ITEM		N	Mean (95% CI)		
TOTAL		2233	0.04 0.03 - 0.04		
ITEM / VARIABLE ASSOCIATED WITH INCREASED RISK OF PROBELM GAMBLING		YES		NO	
		n	Mean Score on Gambling Continuum (95% CI)	n	Mean Score on Gambling Continuum (95% CI)
Usually earns \$100 or more per week		500	0.05 0.03 - 0.06	1054	0.02 0.02 - 0.03
Gamble because:	My friends gamble	122	0.22 0.17 - 0.28	2077	0.02 0.02 - 0.03
	My family gamble	101	0.23 0.17 - 0.3	2098	0.03 0.02 - 0.03
Have gambled on:	Bingo	107	0.19 0.13 - 0.25	2126	0.03 0.02 - 0.03
	Pub/club EGMs	159	0.12 0.09 - 0.169	2074	0.03 0.02 - 0.03
	Casino (EGMs or tables)	81	0.25 0.18 - 0.32	2152	0.03 0.02 - 0.03
	Internet	122	0.21 0.16 - 0.27	2111	0.02 0.02 - 0.03
	Phone	55	0.35 0.24 - 0.45	2178	0.03 0.02 - 0.03
Satisfied depression criteria		247	0.05 0.03 - 0.07	1940	0.03 0.02 - 0.04
Drinks alcohol on a weekly basis		529	0.06 0.05 - 0.08	1671	0.02 0.02 - 0.03

The bivariate analysis revealed a preliminary set of three domains that were negatively associated with scores on the gambling continuum, i.e. they were protective with regard to unhealthy gambling behaviour: connectedness to family ($r = -0.091$, $n = 2,233$, $p < .0001$); connectedness to friends ($r = -0.201$, $n = 2,230$, $p < .0001$), and connectedness to school ($r = -0.107$, $n = 2,233$, $p < .0001$). In essence, as levels of connectedness in each of these domains

increased, the mean score on the gambling continuum decreased (i.e. indicative of healthier gambling behaviour).

The final step of this investigation was a multivariate analysis between the latent gambling continuum, demographic variables, and all of the variables identified in the bivariate steps as risk / protective (outlined above). This analysis aimed to determine if those variables identified as fulfilling risk / protective functions (as identified in the bivariate steps outlined above) would continue to maintain these functions in the presence of each other.

The only variable to maintain its protective status was school connectedness ($b^*=-0.132$, $p=0.018$).

Variables that continued to be significantly associated with increased risk included: being of Pacific ethnicity ($b^*=0.129$, $p=0.01$), being of Asian ethnicity ($b^*=0.121$, $p=0.05$), earning more than \$100 per week ($b^*=0.116$, $p=0.03$), being male ($b^*=0.213$, $p=0.002$), and gambling because friends ($b^*=0.190$, $p=0.000$) and family ($b^*=0.169$, $p=0.000$) gamble.

Even when all of the above variables are controlled for, gambling at a casino (on EGMs or tables) and gambling over the internet were still significantly associated with an increased risk of unhealthy gambling behaviour (i.e. greater mean scores on the gambling continuum): casino gambling $b^*=0.128$, $p=0.005$; internet gambling $b^*=0.147$, $p=0.001$.

7. PHASE FOUR - KEY INFORMANT INTERVIEWS

The third phase of this research project was a series of interviews with key informants in the addiction, mental health/youth specialist and/or problem gambling sectors who are currently providing services to young people. This chapter outlines the methods that were employed and the findings that arose from these interviews.

7.1 Aims and Objectives

The overall objective of this phase of the research was to explore and identify key components of likely best practice approaches for providing problem gambling services to young people, through a series of 3-5 key informant interviews.

7.2 Methods

This section provides details relating to the research method, including: an overview of the recruitment process and resulting sample; data collection; ethics and informed consent; and, data analysis.

7.2.1 Recruitment & Sample

Participants were recruited using purposive sampling techniques: potential key stakeholders (individuals and organisations) were identified through discussions with the project's advisors, a representative from the Ministry of Health, and the research team's own professional contacts within the gambling and alcohol and other drugs (AOD) fields. Snowballing techniques were also employed; some participants identified other professionals (including those within their own organisation) as potential interviewees.

The contract relating to this phase of the research specified that interviews be carried out with 3-5 key informants. In total, 11 people participated in this stage of the research, including three

who were interviewed individually and eight who were interviewed in a group setting (four people from the same organisation in each). Research participants were drawn from a range of organisations; including youth specialist and generic services, as well as mainstream vs. those with a specific cultural focus. Some were working within the AOD sector, and others were employed within a specialist problem gambling organisation. All organisations and participants had some involvement and/or knowledge of working with young people.

7.2.2 Data Collection

A combination of face-to-face, semi-structured interviews and focus groups were conducted. An interview schedule was developed by the research team to act as a guide for the data collection, which was informed by the aims and objectives for the project, and the literature review (Phase 1). The draft questions were reviewed by the research project's advisors and feedback was also sought from the project funder (Ministry of Health). Consistent with a semi-structured approach, the final schedule (see Appendix A) was not a definitive set of questions, but rather acted as a guide for each of the interviews/groups.

Interviews/groups were carried out between the 21st of March and 9th of May 2011 at a time and place of convenience for participants, and took approximately one hour to complete. The study followed the principles of informed consent (procedures relating to ethical approval are outlined in a later section) and interviews were recorded with the consent of participants.

7.2.3 Data Analysis

Each of the interviews/group discussions were transcribed verbatim. Members of the research team independently analysed the transcripts through multiple readings and compiled an overview of the key themes arising from the interviews. This analysis was conducted using a general inductive approach (Thomas, 2003) which enables the identification of themes, clusters

and categories relevant to the research objectives. As part of this process, the research team met and discussed their analyses and interpretations of the data, and noted the presence of common/recurring themes and/or disparities. At the end of this phase of analysis, the research team identified a final set of themes.

7.2.4 Ethical Approval

Ethics approval for this phase of the research was gained from the University of Auckland Human Participants Ethics Committee (UAHPEC) (Reference 2010 / 604). The study followed the processes of informed consent; prior to the interview, all participants received information on the study via a written Participant Information Sheet (see Appendix B) and a verbal description from the researcher. Once the participants had read the information sheet and had an opportunity to ask any questions regarding the study and their involvement, they were required to sign a Consent Form (see Appendix B) before the interview/group discussion commenced.

7.2.5 Research Advisors

This phase of the study was guided by two research advisors with extensive expertise in the fields of problem gambling, youth health and wellbeing, and the treatment of addiction and other youth health issues, and qualitative research methodologies. Their advice was sought throughout the course of the research project, on issues such as data collection measures and procedures, and the interpretation and contextualisation of the resulting data.

7.3 Results

This section outlines the results from the interviews. A description of the key findings is provided below, under the following headings: general perceptions of youth gambling and problem gambling (including youth gambling and service provision in New Zealand); and, best practice

approaches for the provision of problem gambling services to young people (including education and public health campaigns).

7.3.1 General perceptions of youth gambling and problem gambling

Research participants had varying levels of knowledge of – and exposure to – youth gambling within their roles. Whilst for some it was a particular area of specialism, for others it was an issue that they had somewhat limited knowledge of. Those who were less informed regarding youth gambling, however, either had expertise in other youth addictions or were working in a youth-centric role.

Interviews explored key informants' general perceptions of youth gambling, particularly its point of difference from adult gambling, and other youth risky behaviours such as alcohol and drug use. It was acknowledged that patterns of adolescent gambling generally differed from those of adults, including that young people were likely to be attracted to different gambling modes. This included betting with objects (such as items of clothing) rather than money, or betting amongst friends on games (e.g. pool). It was believed that gambling may be episodic or time-limited behaviour for some youth, which was influenced by external events. One participant, for example, spoke about rates of youth gambling having increased during the Soccer World Cup, due to young people's interest in the sport. Another interviewee commented that adolescents may fulfil the criteria for problem gambling during short periods only.

The links between gambling and playing free games on-line was raised in the research, an issue that has been identified in the literature (Griffiths and Wood, 2007, Ipsos MORI, 2009). This included the fact that young people's initial involvement with skill-based activities played on the Internet may lead to on-line gambling (e.g. via 'pop up' invitations that appear on screen, free "demos", etc.). One participant highlighted the risk of young people unintentionally moving into

gambling activities whilst perceiving them to be skill-based games, and another commented on the extent of access to this mode of gambling:

Yeah, I mean I'm not seeing any sort of, from New Zealand, any sort of particularly concrete data, but I think... I think online gaming is sort of a type of gambling of its own really, in a sense that it can be done any time of day or night, you don't even have to leave the house to do it. So even if the rates of incidents aren't as high they may be particularly problematic. [Interview 5]

A key issue identified in the research related to how youth (problem) gambling was perceived, by young people themselves, as well as other influences such as parents, other adults, and even schools. Some key informants asserted that young people may not have an awareness of what problematic gambling is, and/or may not realise that the difficulties they are facing are related to their gambling behaviour. One participant stated that *"they only know that I lost money"* and do not necessarily make wider connections to what is going on. The impact of this was viewed as being similar to the alcohol and drug field, in that it may prevent young people accessing help or support:

They don't think it's a problem. I suspect that, I think lots of young people gamble. In terms of fulfilling criteria for problem gambling I suspect they do for brief periods of time but then, so if you, you know they might fulfil the criteria for a couple of months over the course of this year but then that might disappear and, you know. So I think probably the barriers are their own perception of the problem, it's similar to alcohol and drug in that they don't actually see it as a problem. [Interview 3; participant 3]

Compared with alcohol and other drug use, however, it was believed that youth gambling was a more *"hidden"* activity with one interviewee suggesting that the behaviour may be easier to hide (in contrast to the more overt nature of being under the influence of a mind-altering substance). The different way that youth gambling was perceived by adults, both in relation to adult gambling as well as other youth behaviours such as substance use was also highlighted. This included, for example, a belief that it was not possible for young people to become problem gamblers:

But often as I said it's adults who don't understand what youth gambling is and how it could be different and what to look for and, or even just ignoring the fact that because somebody is younger than they still could have a problem with gambling, they think, "I don't think that could happen here." [Interview 2; participant 3]

Moreover, it was stated that a perception existed that young people's involvement in the activity was likely to be less harmful than problematic substance use – and was therefore less of a concern to parents:

...One of the things with gambling in youth is that often, certainly research has shown this, and I think just working with clients has shown this, that parents will say, "Well I know he's gambling but thank goodness he's not on alcohol or using drugs." So it's as though gambling isn't really an issue, so parents look at that differently sometimes than they do alcohol and drug issues. [Interview 2; participant 3]

One interviewee highlighted that it had been difficult to engage with schools in the delivery of problem gambling prevention or education work, due to the lack of acknowledgement of gambling as a potentially serious problem for youth.

7.3.1.1 Youth gambling in New Zealand

Key informants reported that youth in New Zealand may be exposed to gambling activities via a number of different routes, with parallels drawn with the alcohol field, where social environments and familial influences are seen to play a key role in shaping young people's behaviour. Indeed, the role of the family in relation to youth gambling was seen to be central, and included young people observing their parents and other relatives participating in gambling activities – often within the family home:

Garage is like a main place to party, so everything happens in the garage. And young people are watching their parents and aunties and uncles come over and they're playing housie, or poker, or those kind of games in the garage. And so when the adults go on it's the youth's turn and they sort like role model what their parents are doing just with their own friends. [Interview 1]

And then you get the rural Māori kids, especially up in Kaipara, and they see all their parents playing Texas Hold 'em, they're raised amongst it. It's no different than alcohol, the child usually receives their first drink from their parent. [Interview 2; participant 4]

The links between external gambling venues and family events was also discussed. One interviewee spoke about the targeting of families by Casinos who provide cheap meals as a way of introducing gambling to wider family networks, including exposure to the environment to those

in younger age groups. It was highlighted that such promotional activities were sometimes geared towards specific cultures:

And we were talking to, as a Pacific sector in problem gambling that down Sky City they use lots of advertising around, you know, Pacific people are really drawn to food and get bulk for less kind of thing. And so they have those buffets down there, they target it for Pasifika Island buffet, you know, come and get it. Because the buffet is just next door to the gaming floor, so they're very clever that way. [Interview 1]

Exposure at a community level was discussed in the research, particularly in relation to fundraising schemes that have a betting component. This included within schools, where “*scratchies*” were utilised in such a capacity, as well as church-based activities undertaken to generate funds. Of note, some participants spoke about this being a common occurrence within Pacific communities:

Gambling at church is the norm, usually bingo. There's enough Pacific churches that have been bought on Lotto money, things like that. [Interview 2; participant 4]

Other community influences identified in the research included the media (e.g. Lotto advertising on television, “*hip hop*” music videos which promote gambling) and internet-based strategies. One participant, for example, highlighted that characters in role-playing games may ‘invite’ players to take part in Poker games (for money) and another spoke about on-line activities where young people can “*build their own casino*”.

The cultural aspects of youth gambling in New Zealand were discussed in the research by some participants, although these were not explored in depth. Issues raised related to adolescent problematic gamblers from different cultures facing specific challenges in relation to their gambling. For example, some key informants spoke about Asian international students and the vulnerable situation they sometimes found themselves in, in relation to being in a foreign country without family or other support, and often with access to high levels of disposable funds. For Pacific youth, issues of shame and guilt around gambling, and not being able to meet expected financial contributions to family members, were spoken about.

7.3.1.2 Prevalence of youth gambling in New Zealand

When considering youth gambling in this country, it was acknowledged that there was a lack of data, particularly regarding the size and nature of the problem. Despite this, there was a general perception that youth problem gambling was possibly not a significant issue in New Zealand, with one participant of the view that prevalence estimates may be inflated, due to being based on international predictions:

I've seen presentations and seen a lot of information that would suggest that the prevalence of gambling in youth is a lot higher than it would appear to be. And I think we do thorough assessments in this service, and the young people that we see are going to be more at risk of gambling problems because they've already got substance use problems. But we still don't see very much at all. [Interview 3; Participant 3]

Other participants spoke about the fact that gambling was typically a more solo activity and therefore less appealing to adolescents. This, along with difficulties in accessing gambling venues when underage and a lack of disposable income, were believed to act as potential protective factors against some young people developing problematic gambling behaviour.

Given the lack of New Zealand-specific prevalence data, the evidence for youth gambling not being a major issue in this country was seen to be the generally low numbers of young people accessing help in relation to their gambling behaviour. Indeed some interviewees, working in both problem gambling and/or youth specialist organisations (including AOD services) reported that they did not see many young people presenting to services with concerns about their gambling behaviour:

So I asked a lot of youth workers did they, ever see a problem, has it been a problem for young people? And, none of them sort of identified gambling as a problem. And I'm pretty, I mean some of it could be that they're not seeing it, but most of them are pretty, a lot of them are close, in terms of relationships with young people. [Interview 3; participant 1]

It is important to note, however, that interviewees acknowledged that a lack of numbers alone did not necessarily indicate the absence of a problem. Some spoke about the fact that young people's problem gambling may not be being identified due to screening procedures not being

undertaken (with one interviewee acknowledging that it did not always happen) and/or a lack of effectiveness in current screening tools in identifying the behaviour. It was highlighted, for example, that the questions asked may not reflect how young people themselves conceptualise the behaviour, and/or the language they use to describe it:

Researcher: So what do you ask them? [referring to screening questions]

Participant: Do you gamble? I mean, you have to spell it out for young people as well, because buying a Lotto ticket isn't gambling in their minds, or playing scratchies or even pokies might not be, they don't think of gambling that way. [Interview 3; Participant 4]

But if you just sit down with young people they will tell you, "Oh yeah I was binge drinking in the weekend, I got a few pills from my friends, or a few joints." They're really open like that, but when it comes to gambling they don't really hear until you explore, "Okay so when you guys were drinking with your friends in the garage, what were you guys doing?" "Oh we were playing poker, card games, or whatever." And I say, "Oh did you gamble any money, or did you play with money?" They say, "Yeah we always play with money." But they don't see that as gambling. [Interview 1]

It was also acknowledged that gambling may be a more hidden issue for young people, who may present to services in relation to other problems they are experiencing (e.g. related to their alcohol and drug use, relationship issues, etc.). As discussed previously, this may be – in part – due to a lack of recognition that they have a problem and/or because gambling is an easier activity to hide:

Gambling's more hidden, they don't want to talk about it, they won't front up and say, "I gamble this much, or I go to the casino, or TAB, whatever," you've got to have to dig it out of them. [Interview 1]

One participant compared the hidden nature of youth gambling to that of depression, which was viewed as having become far more visible and acceptable in society due to recent high profile social marketing campaigns:

I think just, I think just because it hasn't been out there as an issue for as long, and it hasn't gotten public attention that AOD has and so that's kind of an acceptable thing. But this we don't, and we don't have a face for it, you know, depression now has, what's his name? Researcher: John Kirwin? That's him, yes. And we don't have anybody like that who makes it okay to front up and talk about having a problem with gambling. It just hasn't become quite as acceptable yet. [Interview 2; participant 3]

Others highlighted a sense of in accessing support for gambling as potentially impacting on the apparently low level of presentations to services. One interviewee felt that this was a reflection of New Zealand culture, where seeking assistance in relation to mental health issues was often viewed as a weakness, and/or not encouraged. It was also believed that youth gambling may be seen to be more shameful than other addictions, given its lower profile in society:

With addictions there's kind of a pecking order of addictions, and because AOD that's been an acceptable issue to have for quite a long time, it's in media, it's books, it's films, things like that, it's not really the case with problem gambling. And because people aren't dealing with something as, with substance, well with a substance, they think, "Well how can I be in trouble with this, how did this get to be a problem?" [Interview 2; participant 3]

The medicalised nature of service delivery was also felt to increase stigma for young people, given that services were generally delivered in settings that were less integrated into young people's lives:

So the, one of the key things around diminishing stigma needs to be the shape of our services. And no doubt I have a bias to that, in that if you medicalise service provision you increase the barriers to getting help. If you can have access to services alongside where young people are, so within schools, within communities, then you're providing a doorway as part of their world, rather than somewhere where you have to go which is distinctly different from day-to-day life and there's something wrong with you. [Interview 4]

7.3.1.3 Current service provision for youth problem gamblers in New Zealand

When discussing current service provision (i.e. clinically based problem gambling interventions or treatments) for youth problematic gamblers in New Zealand, there was a general view that limited options existed for young people seeking help. In terms of youth-specific services, research participants acknowledged the work of organisations such as the Youth Gambling Helpline, TUPU, and other general (youth) addiction services (where it was believed that, whilst not the focus of service provision, youth gambling may be addressed). One interviewee commented that "*there's next to nothing*" due to the majority of services in the field being geared towards adult populations, and another highlighted that most work was focussed "*at the bottom*

of the cliff". It was also reported that there was a lack of options for young people wanting support in relation to parental gambling.

One interviewee commented that whilst some services did exist, they may not necessarily be widely known about, either by young people or those in a position to refer them:

But I would suspect that were someone to go to like a school counsellor or a university counsellor, they may not know of any specific youth services to send them to. And whether that's a lack of publicity or a lack, or just a lack of the services themselves, I'm not really sure. [Interview 5]

In considering the standard of current service provision for young people, a research participant highlighted that services in New Zealand were not always evaluated, and thus their overall effectiveness (particularly with regard to working with young people) was not necessarily known. They acknowledged that within their own organisation, for example, evaluative procedures were focused on whether or not administrative and documentation processes were being carried out correctly – rather than whether the work was making an impact for their clients.

Whilst it was outside the scope of this study to investigate views on whether more services were required to address youth gambling within New Zealand, in the course of exploring best practice approaches for providing services to young people, some comments were made about this. In particular, questions were raised about the need for additional services, given the (assumed) low number of adolescent problem gamblers within New Zealand. Thus, a key theme that was identified was the need to work within existing structures and/or alongside current service providers. This was not only due to practical considerations (e.g. the limited resources available), but also a response to the perceived current silo-based approach to youth service delivery. These, and other issues, are discussed in the following sections.

7.3.2 Best practice approaches for the provision of problem gambling services to young people

Interviews explored key informants' views on what they considered to be best practice approaches for the delivery of problem gambling services to young people. As discussed earlier in the report, the sample consisted of individuals working in the gambling field, as well as those working with young people in relation to other mental health, youth development or addiction issues, and thus the views and opinions expressed draw on their experiences in these areas.

In considering best practice models of working with adolescent problem gamblers, the paucity of New Zealand-specific information in this field was highlighted, alongside the lack of international examples of effective interventions with youth. One research participant spoke about a school-based programme being undertaken in Canada, and another discussed the delivery of technology-based services to youth clients. It was acknowledged, however, that even when work was considered to be of a high standard, it did not necessarily attract significant numbers of youth gamblers:

But I think as far as attracting youth, I don't think, but I don't think that's just us in New Zealand, I think that's a worldwide issue. Because McGill University has had a youth programme for years and it's really well done but they don't attract that many youth either. But again I think part of that comes down to, well do you expect them to come into the office there and sit there. I think you've got to offer it differently. [Interview 2; Participant 3]

7.3.2.1 Structure and positioning of youth services

In considering best practice, a key issue raised in the research was the positioning of youth gambling services relative to other service provision for adolescents. Some interviewees felt strongly that existing youth services (e.g. those focussed on health or other issues) were organised in a fragmented fashion. In particular, it was noted that the delivery of these was via a number of distinct "*silos*", with one interviewee highlighting that they were configured around

single issues and often “*symptom-based*”. This was considered problematic due to a perception that it did not reflect how young people experience health and other social issues (i.e. that they are unlikely to occur in isolation), and was felt to create additional barriers (e.g. knowing where and how to access help) and to contribute to the stigma they may experience when seeking support:

So young people that I’ve worked with and we work with are multifaceted with their issues, they’re not cleanly divided into the various issues or symptoms that we deal with. And yet the landscape that we create as far as service provision is incredibly either centred around the funding stream from government. Centred around the profession, or centred around the issue. [Interview 4]

Another participant questioned the logic of developing new services when current service provision in other areas of youth health was not adequately resourced:

And if you were going to invest money in treatment services, i.e. counsellors, then setting up youth gambling services, you know, when we haven’t got youth addiction services in general throughout the country would be stupid. And that, so what we would need, what we’d want is to focus on developing good youth addiction services across the board and to have gambling as part of their mandate. [Interview 3; Participant 3]

As evident in the above extract, some participants viewed best practice as working with current youth initiatives, and within existing health service structures, particularly given the commonalities across treatment philosophies of different services (e.g. within the AOD sector). One participant suggested, for example, that this could include ensuring that GPs’ ability to work with young people was strengthened. The reported benefits of such an approach were cost and resource savings, as well as improved access for young people given a more familiar and stream-lined approach to service delivery:

So at the moment we’re an alcohol and drug service, but if we were defined as an addiction service to include gambling problems as part of our core business, that would be a way more cost effective and useful way to spend that money. [Interview 3; participant 3]

And there’s, so there’s the symptom of the gambling, the symptom, there’s the one around depression, there’s the one around youth depression. If we now had one around youth gambling, we just create this siloed, and they can never be in every community. They can only ever be in one or two places trying to provide, and then what it does from a

service provision basis is creates another entity that you have to relate to, another process to manage. [Interview 4]

The concept of a 'one-stop-shop' model of service delivery was put forward by some key informants as an effective way of working with adolescents, with one key informant making comparisons with the Whānau Ora concept. This was visualised by interviewees as gambling services being provided alongside a range of other health (and social) services, including education and family-based initiatives:

And it would be a mixture, when I say one stop health it'd be a mixture of health, social services and education. I think those silos that we continue to work in, you know, and imagine that they went in and it was like the YMCA, but the whole family felt comfortable going and there was something for everyone to do at whatever level they were. [Interview 2; participant 4]

It would be nice if it was just a one stop shop that a young person can just come and see a doctor and all the other things are attended to. Because it doesn't help when you send them around, they just lose interest and they won't come back. [Interview 1]

As highlighted above, there were a number of advantages associated with such an approach, including the opportunity to provide a range of services in a single setting, thus reducing the need for young people to travel to different service providers. The ability to assess young people in relation to issues other than gambling was also considered advantageous, given the expectation that young people would probably not be experiencing gambling harms in isolation:

The more I read and think about things, I just think some day it's going to seem ludicrous to us that we have segmented things into these different pieces and that we think it's this novel.... Because when people come to us with gambling problems, whether they're youth or adults, they just don't come with just that one problem as everybody will know, it's with a range of issues. And so it does take working with all the things that are going on in that person's life. [Interview 2; participant 3]

A young person is not just going to come with one thing – they're going to come with many things from sexual health, to AOD, to relationship issues, to abuse. [Interview 1].

Extending the model to include family-based work, and recreational activities was also viewed by some participants as important and potentially beneficial to young people.

Whilst some key informants fully embraced such an approach, there were some limitations noted regarding the 'one-stop-shop' model. More specifically, issues were raised regarding its

effectiveness in relation to addressing addiction problems within such a setting. An interviewee, for example, highlighted that such a model was usually primary care based, and thus not necessarily geared up to manage the range of complex issues that young people with addiction-related problems may present with. Consequently, it was felt that addictions problems may not be adequately addressed (and/or identified) in such a setting and/or would result in young people being referred to specialist services in any case. This individual supported the current model of general addictions services for youth, with AOD offerings extended to include problematic gambling:

I think if you were putting gambling counsellors in mental health services or in youth health services, they'll just be swallowed up and they're not supported and it's unlikely to, if you want results you want people with addiction to actually get treatment, but it's not going to happen that way. You might, it might tick boxes and look good, but it's not going to actually work. Whereas gambling I think wouldn't be swallowed up in specialist addiction services, because it's basic core business. [Interview 3; participant 3]

Other limitations of such an approach were felt to be the challenge of managing service providers working within different frameworks, the low profile that gambling may receive in such a setting, and the lack of mobility with regard to service delivery. In particular, one interviewee expressed concern around the potential for gambling/addiction staff to receive inadequate supervision, and to be required to undertake tasks outside of their primary role. It should be noted that, despite these perceived limitations, other key informants expressed broad support for the 'one-stop-shop' model.

7.3.2.2 By youth...for youth

Regardless of what form a youth gambling service takes, there was strong support for this to have an overt youth focus. This included ensuring that services were "*youth-centric*" and not simply an adjunct to, or merged into, existing adult services. The benefits of linking in with existing organisations which are already engaging with youth (e.g. Scouts, YMCA, Youthline) or youth health centres were highlighted:

...somewhere where people feel that it's okay to be here and it's okay to get some support from here. And I think the fact those youth health centres are specifically for youth is a really strong point, you're not just going there to sit in a little youth corner of the big room, you're really there as a place that they know the issues you're dealing with, sex and drugs and money and, whatever the need is. [Interview 5]

A key aspect of a 'by youth, for youth' approach included ensuring that young people were involved in the initial planning/set-up of services, with one interviewee suggesting that a service development process could partner up with existing initiatives such as Youth Health Councils and Students Against Drunk Driving (SADD). The importance of youth involvement in the on-going delivery and development of any youth gambling service, including the staffing of the service, was also emphasised:

So it would be good if a service could be catered for young people, delivered by young people for young people, professional young people, qualified young people, where young people feel safe to go, for all young people. [Interview 1]

It was believed that a youth focus should be reflected in the venue where any services are delivered, including ensuring that it is a place that is not stigmatising for young people to visit. One participant suggested that linking into existing youth services and/or activities that young people are already attending (e.g. at a Youthtown venue) may be advantageous. Overall, there was a strong sense that it would need to be a place that was attractive to youth:

And we need a place where youth feel okay about going there, they feel like, "Oh yeah I want to go there." Not, "Do I have to go there?" Like, "It sucks being over there," that kind of stuff. So it's having a place where they're invited, they know it's their place, they know that people there they trust, not going to judge them or go and tell on them that kind of stuff. [Interview 1]

In developing a youth-focussed venue, a research participant cautioned against the creation of youth centres which become "*ghettoised*", in that they may be dominated by particular sub-groups of adolescents, thereby alienating other young people from the space. It was suggested that community centres that are "*youth centric*", but not separate from the broader community, and offer a range of activities for young people, may work to avoid this:

If you ask young people they don't actually ask to be removed from community, they want to actually be more part of the community, they want to get out into the world. So you

need to create in the continuum of services community based services. That community based service model could include a GP in it, but it could also equally include dance and music and activities. [Interview 4]

Ensuring that information and activities undertaken are developmentally appropriate was highlighted as an issue. One interviewee commented that targeting older youth was the optimum approach given younger adolescents' ability to accommodate this, in contrast to their older peers who would be less willing to "*dumb down*". Another key informant felt that 13-25 years was an appropriate age range for general health promotion work, but that it was better to segment young people with regard to specialist treatment:

My feeling actually is that it would be great to have, and this is for substance use services as well, it would be great to have service for younger adolescence, say twelve to fifteen or something. And then to be able to have services for young adults as well. Because the problems are different for a twenty year old than for a thirteen year old, whether you're talking about problematic substance use or problem gambling or, and I just suppose that I assume that a thirteen year old is much less likely to have problem gambling than a nineteen or twenty year old. [Interview 3; participant 4]

7.3.2.3 Family inclusive

The need to ensure that service provision for youth incorporates working with family members was highlighted by research participants. This was in recognition of the perceived limitations of working with individuals in isolation from their social and other networks. In particular, it was noted that whilst adolescent problematic gamblers may work to resolve their own issues, returning to an unhealthy family environment may present subsequent difficulties in maintaining a gambling-free lifestyle:

You've got to work with the family because if you work with the individual then it's not going to change the system that the person is living in. [Interview 2; participant 2]

Another facet of inclusive family practice discussed in the research included working towards strengthening and reconnecting family members who may have been negatively impacted by someone else's gambling, although it was highlighted by one interviewee that young people needed to have a choice in this regard:

And also I think inclusive of families, I know that young people have a choice whether to have families or not involved, but I think working towards bringing the family back together. Because at the end of the day, and I understand that some families just can't do that because they're so broken up already.... Because at the end of the day that young person is still going to be connected to the family, if not living, still living with them when they leave, but they're born into that culture, into that family so they have to have that connection somehow, so there needs to be work in that area too. [Interview 1]

The need to engage families on a long term basis was also noted as an important consideration, if interventions are to be effective:

And if they don't have a whānau then we actually find the support people that will still remain. And we're talking working with them not just for six weeks, if we're really going to make changes in their lives as a community and there's a bunch of us, we're talking about working with these families for a year. [Interview 2; participant 4]

7.3.2.4 Staffing

As noted previously, interviewees discussed the importance of ensuring that gambling services targeting adolescents are staffed by young people themselves. Such a requirement should not be equated with a belief that all staff delivering gambling services to adolescents need to be young themselves. Whilst there was a general expectation that some of the staff would reflect the age range of the target client group, the need for practitioners from older age groups was also discussed. It was believed that such individuals would have important contributions to make given their older age and life experience, including the potential to act as mentors to young people accessing the service:

Well I think there'd need to be some older mentors there as well that just have life experience as well. You've got to have the flavour of the young so that people feel at home, but at the same time the archetype of the older person or whatever who can give sage advice is a useful one. [Interview 2; participant 2]

Regardless of age, it was considered important that staff understand and are able to engage with young people. This includes practitioners that youth are able to relate to, who are able to identify with the target audience, and have the ability to inspire other young people. One participant highlighted that this included being able to *“really talk to them”* and to advocate on

their behalf. Others emphasised the need for staff to have an understanding of youth culture and knowledge of emerging youth trends.

Yeah for [ethnicity] youth, or youth in general, they have their own sort of world view and culture. So you've got to connect with them on that level and by using, what I mean by that is using their language to, like for them gambling doesn't mean gambling. You know, the gaming, it's more like playing games, like clocking games and things like that. So you've got to use the kind of language and also have knowledge on modern technology of what they're doing. Like they're doing, are they playing pokies, are they playing Farmville, are they playing all these Play Stations and that kind of stuff. [Interview 1]

A participant who spoke about the ethnicity of staff highlighted that their ability to connect with young people was more important than their ethnic or cultural background, although it was considered important that people from a range of backgrounds were employed:

And the workers could be, the work force could be a mixture of cultures, because a lot of the research that's been done... she did a scoping exercise of young people, they said they don't want an ethnic specific service, they'll go where all the other young people are going. But it's just who's delivering, who's offering those services matters, because if they don't have that connection with them, if it's not meeting what their needs are they're not going to go. [Interview 1]

In terms of specific skill sets, key informants felt that there were a number of core competencies in working with young people that were shared across different fields and disciplines; thus, multi-disciplinary teams were considered more important than a specialised youth gambling workforce.

Because the whole issue of engagement with young people, assessment of young people, assessing risks with young people, seeing the strengths with young people, of being able to facilitate a programme of young people, of linking the families with young people, of linking with other services, is the same. [Interview 4]

Skills in mentoring and coaching were also felt to be important by one key informant. At a broader level, issues were raised regarding other frontline staff working with young people in a range of settings (e.g. doctors and school-based staff) and the need to ensure they are well informed and able to identify problematic behaviour when appropriate:

And there's a continuum from actually the sports coaches, and just understanding from a first aid basis to, what to look for. Right through to the GPs, to the school nurses, public health nurses, groups like ourselves, frontline youth workers. So part of workforce development, and again don't set up a whole new institute, go through ones that are

already doing training, making sure that that stuff's in there, making sure that it's relevant information. So there's a lot of work about how do you build the infrastructure rather than how do you create an infrastructure. [Interview 4]

7.3.2.5 Service delivery

Findings from key informant interviews suggest that best practice with young people in this field should include a range of delivery methods, with a particular focus on the use of technology. This includes Internet-based services (e.g. social networking tools) as well as the use of mobile phone technology (e.g. for text-based counselling/brief interventions). This was considered appropriate given young people's level of comfort with, and widespread use of, new technologies – and, as highlighted by some participants, acknowledged young people's different approach to communication:

I think the phone can do some incredibly powerful counselling work. But I also think that for young people being able to simply send off a text to get some information or to flick of an email to read when you get home that night is really important, because it's not quite as confrontational. And I think picking up the phone for young people can be quite a scary thing. [Interview 5]

I think it's about youth engagement too, but they have a different form of communication, you know. [Name of organisation] does a lot of texting, Internet, and I know when I was working with students, particularly the [ethnicity] students, it was a lot easier especially with language barriers, 'cause they would text in English and then they would get something back, even in emails, and so distance counselling was very popular. Also that, you know, in the world that they were raised in of consumerism, of different families, especially internationally social locations and that, that they've learned to communicate differently with less engagement. [Interview 2; participant 4]

Such an approach, alongside phone-based services, was considered important because of the degree of anonymity it can provide young people in accessing help and support in relation to their gambling. Indeed, it was acknowledged by one participant that young people may not want to *“front up to a bricks and mortar place”*, due the sense of shame associated with the behaviour. The ability of distance-based services to reach a geographically dispersed audience in a cost-effective way was also highlighted:

What I would suggest is a public health approach in terms of quit, similar to kind of Quit Line really as kind of promotion and at the end of that, and this way you could cover the whole of New Zealand. If you had an interactive Internet kind of service where people, and then people could access individual help via that through email, text, phone or whatever, that would be probably the most cost effective way to reach these people who aren't that visible. [Interview 3; participant 3]

It is important to note, however, that offering young people a range of options in accessing help was considered important, including more 'traditional' approaches. One interviewee who worked within a problem gambling service, for example, reported that mobile phone ownership was much lower amongst some young people living in communities such as South Auckland. Another spoke about providing young people with the opportunity to access services alongside friends or family members.

The importance of flexibility of access – as a means of addressing potential barriers – was apparent, with key informants highlighting the need for weekend and afterhours services, a drop-in system, and a service with no cost attached. The concept of satellite locations throughout regions where youth are located (e.g. at home or school) and the need for mobile services was also discussed. This appeared to relate to a need to ensure that young people who were unable (or unwilling) to travel to a service (often those most in need of help or support) were not disadvantaged in anyway. Moreover, the benefits of staff gaining greater insights into the family and social environment via such visits was recognised:

And I guess our service is mobile, so the one-stop shop thing, if we're, if there was a good one-stop shop in Auckland we would go and see the kids there, because we're mobile, we see them at school or at home or wherever they want to be seen. But what we find for addiction problems, and gambling is likely to be the same, is that young people, a lot of them aren't resourced to get to the mental health service or an addiction service or a one-stop shop anyway. And so you need to have the capacity to go and see them, whether they might be. [Interview 3; participant 3]

It was felt that the promotion of a gambling service should be undertaken in a positive way “so *people feel okay about going*”, and should draw on via a range of media, be linked into other youth services and websites, as well as relying on 'word of mouth' information being shared within adolescent networks.

7.3.2.6 Evaluation of service effectiveness

Some research participants believed that current services are not always rigorously evaluated, and that there is a lack of information in the problem gambling field regarding effective practice. In considering what is important in terms of monitoring and evaluation it was highlighted by one participant that a continuum of approaches may be appropriate, including tools which focussed on customer satisfaction, reflective practice, and identification of outcomes for young people. They also discussed “*connectivity*” as an indicator of success with regard to youth-based work. Another participant highlighted that youth advisors in a governance role could play an important function in eliciting feedback from youth with regard to service delivery; others spoke about the importance of involving youth generally in any evaluative work. One interviewee indicated that youth accessing gambling-related (or broader youth health) services on an on-going basis should be viewed as a positive outcome, particularly given the potential for youth leadership to be developed as a result of this:

And also looking at access rates, but also are they coming back regularly? ‘Cause I think that’s a good thing, I mean other people might think, “Oh well they’re relapsing why they’re coming back, or,” but I think that should be encouraged that they just keep on coming back. It’s not like you get your treatment that’s it, you know, you stay in touch, you come back, because then you can grow leadership out of those young people and they might help the next lot of youth coming through. [Interview 1]

A research participant who was working within a well-established youth service discussed their interest in narrative (rather than quantitative) approaches to evaluation:

I’m much more interested in the narrative approach to evaluation than a quantitative approach, because it is the stories of people that actually make the work. And if you can capture the stories you’ll know if there are themes and you will know if things are happening, and you will know if people have actually got onto a journey which is better for them. [Interview 4]

7.3.2.7 Education and public health campaigns

Key informants discussed the need to educate young people regarding problematic gambling. This was considered important to ensure that they are informed and able to recognise potential problematic behaviour - including their own as well as that of family members or friends. One interviewee also spoke about the role that education has to play in terms of bringing the problem out into the open and working to overcome some of the stigma associated with it. In considering the types of information that could comprise an education campaign, a number of suggestions were made, including:

- Motivations for gambling
- Odds/probability of winning.
- Difference between gaming and gambling.
- Definition of problem gambling and associated symptoms.
- The range of services available to problem gamblers.
- Familial gambling – signs to watch out for, how to access help in relation to someone else's gambling, keeping safe when family are gambling.
- How to help friends with a problem.
- Alternative ways to fundraise (i.e. without relying on gambling-based activities).
- How to survive financially without resorting to crime and/or gambling.

Schools, and school staff such as guidance counsellors, were considered key stakeholders in addressing gambling issues, not only in terms of being able to refer students with a gambling problem on to specialist services, but also as a setting for education and prevention work. Indeed key informants spoke about the need for problem gambling education within schools, alongside information on other health behaviours (such as alcohol use, smoking, etc.). One research participant felt that this needed to be introduced at a young age (kindergarten):

It's just like how they teach them to cross the road and be safe and not, you know, stranger danger and all that kind of, they need to do the same for addictions, alcohol and drugs and other drugs and problem gambling. And it needs to start when they're young, so when they become older they've got choices. [Interview 1]

As highlighted above, integrating it with other health and wider social programmes (e.g. lifestyle issues, keeping healthy, etc.) was considered an appropriate approach. For one participant, this

was due to their experience of having undertaken previous education work with young people, which they felt had been less successful due to its focus on problem gambling. As evident in the interview extract below, because young people did not perceive gambling as relevant to their personal situation, a shift to a broader focus had been more effective:

We've been going to [name removed] school to do an education programme. At the beginning we talk about problem gambling and then people do not have an interest in listening to it because majority of them they aren't problem gambling. But in the whole school they know who is going to gamble, they always point the finger to whoever...So in the end we have to change our, our workshop title...So that we give them some tips about how to learn [language] and then talk about you have to study hard but you have to play hard during holidays. In that way we can inform them the information we want to give to them, for example, what is gambling and the legal age of gambling in New Zealand...Yeah talk about the topic that interests them, [and] we can plan in some information, gambling information there. [Interview 2; participant 1]

In terms of public health campaigns, the importance of a “*youth-friendly*” delivery was emphasised, with parallels drawn with previous Smoke-free initiatives which had utilised youth role models. Other public health programmes were also discussed, including “*the John Kirwin depression ads*”, and the Lowdown (youth depression) website. Such approaches were considered effective due to their attempts to normalise the behaviour and the opportunity for young people to access support in an anonymous fashion (i.e. via a website or by phone).

The potential for youth to make changes to the culture of gambling within their own communities was also highlighted in the research. One participant, for example spoke about Pacific youth working with their local churches to develop alternate fund-raising activities which are not gambling-based. Another spoke about the CAYAD¹⁵ programme – and expressed a wish that there was an equivalent initiative for youth in the gambling field.

¹⁵ Community Action Youth and Drugs (CAYAD) is a national prevention project that aims to reduce the harm to young people and families/whānau from illicit drugs.

7.4 Summary of findings from key informant interviews

Despite potential widespread exposure to gambling with New Zealand, and a lack of available prevalence data, there was a general perception that gambling was not a significant problem for youth in this country, as evidenced by the lack of presentations to treatment and other health services (although it was recognised that young people may face barriers in accessing help in this regard). Moreover, current service provision was seen to be geared towards adult problem gamblers. Youth gambling behaviour was seen to differ from that of adults, and was viewed as episodic by some; gambling on-line was highlighted as an area of concern. A lack of recognition of problematic gambling behaviour by both youth and adults was felt to create barriers for young people accessing help.

The lack of national and international examples of best practice models of working with adolescent gamblers was highlighted by key informants. In considering key components for youth problem gambling services, there was a clear preference for working alongside existing providers and structures as a means of: addressing the current silo-based approach to service delivery; streamlining young people's access to services; and, to ensure that resources are distributed in a cost-effective manner. A one-stop-shop model of service delivery was put forward as an effective way of working young people, with gambling services provided alongside other (family-inclusive) health and social services (although the limitations of such an approach were also noted).

A 'by youth, for youth' philosophy was considered best practice, with services provided in a youth-centric environment. The involvement of young people in the planning and delivery of services (including taking on staffing and governance roles) was deemed important – as was a mix of older and younger staff able to engage, and identify with, the target audience. Core competencies for staff were seen as similar to those in other youth-related fields. Key informants

reported that a range of delivery methods should be offered to youth, including phone-based, on-line, mobile and drop-in services. Other key stakeholders considered important in addressing problem gambling, included schools, churches, GPs and youth organisations. A need for further education of youth was highlighted (e.g. on potential risks, help-seeking advice, etc.), and included targeting young children in schools.

8. DISCUSSION

The project outlined in this report aimed to explore youth participation in gambling and the impacts of problem gambling on young people in New Zealand. It also sought to explore and identify key components of likely best practice approaches for providing problem gambling services to young people.

The project entailed four phases, including a scoping exercise (see Phase Two, Chapter 3) to determine the relevance of existing datasets with regard to their potential for a secondary analysis to inform on levels, patterns and trends of youth gambling in New Zealand, including the identification of risk and resiliency factors. This phase identified the Youth'07 database as the most suitable for a secondary analysis (see Phase Three, Chapters 4, 5 and 6). This quantitative phase was complemented by a series of key informant interviews (see Phase Four, Chapter 7). All three phases were informed by a review of the national and international literature on gambling and problem gambling for young people (see Phase One, Chapter 2).

8.6 Youth Involvement in Gambling

The secondary analysis of the Youth'07 dataset revealed that approximately one-quarter of participating students had gambled in the past year. This proportion contrasts somewhat to those found in other national and international research, which tend to find that at-least two-thirds of young people have gambled in the last year (Delfabbro et al., 2005, Ste-Marie et al., 2006, Huang and Boyer, 2007, Welte et al., 2008, Ólason et al., 2006, Gupta and Derevensky, 1998a, Splevins et al., 2010, Poulin, 2000, Rossen, 2008). This discrepancy may be due to the wording of the initial screening question in the Youth'07 survey; while a few prompts/examples of gambling are included in the question, it relies on students thinking of all the betting and gambling modes that are available (and categorising them as such) and then indicating if they have had involvement in any of them over the past year. This may have resulted in a lower

proportion indicating that they have gambled, particularly as young people do not always think of or consider activities which are less formalised (e.g. cards or coins) or highly acceptable (e.g. 'scratchie' tickets), as actually being gambling.

In line with other research (Griffiths, 1991, Rosenstein and Reutter, 1980, Volberg, 1993, Canadian Foundation on Compulsive Gambling, 1994, Buchta, 1995, Carlson and Moore, 1998, Stinchfield, 2000, Stinchfield et al., 1997, Ide-Smith and Lea, 1988, Fisher and Balding, 1996, Volberg and Moore, 1999, Hardoon and Derevensky, 2002, Gupta and Derevensky, 1998a), students that could be categorised as 'gamblers' were more likely to be male than female, and there was a trend for the proportion reporting gambling to increase with age. Gambling participation was also associated with neighbourhood deprivation: students living in neighbourhoods with low levels of deprivation were more likely to gamble than their counterparts from high-deprivation neighbourhoods.

With regard to recent gambling behaviour, less than one-tenth of the entire sample indicated that they had gambled in the past four weeks (although this equated to approximately one-quarter of those who were categorised as 'gamblers'). Gender, age and ethnicity were all significantly associated with recent gambling behaviour; males were more likely than females to have gambled in the past four weeks and there was a general trend for recent gambling to increase with age.

It appears that students do not typically spend much money or time on gambling activities. A very small proportion of students indicated that they spend \$20 or more on gambling in a typical week. Significant associations were observed with gender (being male) and ethnicity. A similarly small proportion of students indicated that in a typical week they would spend 30 minutes or more a day gambling. Again, gender (being male) and ethnicity were significantly associated with the amount of time spent gambling.

With regard to the types of modes/activities that students had gambled on, the most 'popular' (i.e. those that were endorsed the most) included bets with friends, Instant Kiwi (scratchies), cards or coins, and Lotto (including Strike, Powerball etc). Greater proportions of male than female students had gambled on: pub or club EGMs; casino EGMs or tables; internet gambling; bets with friends; 0900 phone games; and cards/coins. Instant Kiwi was the only mode on which a greater proportion of females than males had gambled on in the past year. There was also a general trend for the proportions of students gambling on Instant Kiwi, Lotto (including Strike and Powerball etc), TAB betting, and Pub or club EGMs, to increase with age.

In line with other research (Moodie and Finnigan, 2006, Valentine, 2008, Rossen, 2008), the most frequently cited reasons for gambling centred around having fun and winning money. Less frequently endorsed reasons included 'because I am short of money', 'to forget about things', 'to feel better about myself', and 'because I can't stop'. There were indications that males were more likely than females to gamble 'to have fun', 'for a challenge', and 'to relax'. There was also a general trend for the proportion of students indicating that they gamble 'to forget about things' to decrease with age.

8.7 Evaluating Unhealthy Gambling Behaviour

Item response theory was used to model the probability of gambling behaviours along a latent dimension of 'less unhealthy' to 'more unhealthy' gambling behaviours, allowing the development of a framework for evaluating which gambling related behaviours are more severe. Associations between population demographics and variables that were thought to fulfil risk and protective functions were then explored, through bivariate and multivariate analyses, in relation to this underlying continuum. 'Gambling to relax', 'gambling to feel better about myself', and 'gambling to forget about things' were all identified as 'red flags' or early indicators that gambling behaviour is moving towards unhealthy levels.

8.8 Risk and Protective Factors

Bivariate analyses also resulted in a preliminary set of ten variables that were associated with increased risk / higher scores on the gambling continuum (i.e. 'more unhealthy' gambling behaviour): earning more than \$100 a week; gambling because friends gamble; gambling because family gamble; gambling on bingo, pub/club EGMs, casino (EGMs or tables), internet, and phone; depression; and, drinking alcohol regularly. Three domains were also identified as being protective against unhealthy gambling behaviour (i.e. associated with decreased risk / lower scores on the gambling continuum): connectedness to family; connectedness to friends; and, connectedness to school.

The final step of analysis (multivariate) combined all of the variables identified as fulfilling risk or protective functions to see if they were 'strong enough' to maintain their risk/protective status in the presence of each other. School connectedness was the only variable to maintain its protective status, while five variables continued to be significantly associated with increased risk included: being of Pacific or Asian ethnicity, earning more than \$100 per week, being male, gambling because friends do, and gambling because family do.

Two types of gambling were also found to be particularly risky for young people - even when all of the above 'risk' and 'protective' variables were controlled for; gambling at a casino (on EGMs or tables) and gambling over the internet continued to be significantly associated with an increased risk of unhealthy gambling behaviour.

8.9 Overview and Implications

The results outlined in this report indicate that a substantial proportion of young people do engage with gambling. Males appear to be more involved in gambling, in particular, they were more likely than their female counterparts: to have gambled in the past year, to have gambled in the past four weeks, to gamble on a wider variety of modes, and to spend more time and money

gambling. This strong gender bias needs to be considered by those aiming to address the public health and intervention needs of young people for gambling. This research also identified some 'red flags' or early indicators that gambling behaviour is moving towards unhealthy levels: 'gambling to relax', 'gambling to feel better about myself', and 'gambling to forget about things'. These indicators may be useful for health professionals (those working in youth health, education, and problem gambling health promotion or intervention services), as well as for youth themselves and their families/whānau. Findings from the key informant interviews also highlighted the importance of ensuring that key stakeholders are informed with regard to youth gambling, and the benefits of drawing on their skills, knowledge, and existing relationships with young people.

Youth indicated that they were participating in a number of modes that should theoretically be unavailable to them, due to legislation around age limits. Clearly, the availability and/or interest in a number of modes had a tendency to increase with age: there was a general trend for the proportions of students gambling on Instant Kiwi, Lotto (including Strike and Powerball etc), TAB betting, and Pub or club EGMs, to increase with age. It is apparent that attention needs to be paid to the availability of gambling to minors. This is particularly important when considering gambling modes that were shown to present an increased risk of unhealthy gambling behaviour – such as casino gambling (EGMs and tables) and gambling via the Internet. The roles of gambling policy and legislation, host responsibility, and education (of youth and parents/teachers etc), all need to be explored further with regard to the availability of gambling in general. A societal perception of gambling as being less severe than other youth risky behaviours may also be contributing to the availability and accessibility of gambling activities to adolescents; this was highlighted by key informants and is in line with the international literature (Fisher, 1999, Ipsos MORI, 2009, Felsner et al., 2003).

Social connectedness was shown to have an important role in moderating or protecting against unhealthy gambling behaviour in youth. Of particular importance was connectedness to a school environment. Interviews with key informants also highlighted that schools may be an important stakeholder, not only in relation to providing a setting for the delivery of education programmes, but also in signposting young people to sources of additional support, where appropriate. Best practice guidelines for mental health promotion programmes highlight the importance of intervening in multiple settings, with a focus on schools as a key setting for interventions (Centre for Addiction and Mental Health, 2011). However, the role and potential for schools to have a positive impact on their student's gambling specifically requires further investigation and is not well understood.

The research has identified the lack of best practice information available with regard to the provision of gambling services and interventions to young people. However, those working in gambling and related fields highlighted the commonalities across different disciplines in working with youth, and the appropriateness of drawing on these when developing gambling services for young people. This is supported in the literature (Derevensky and Gupta, 2004, Brezing et al., 2010, Dickson et al., 2002). It appears that work being undertaken in Canada (Dickson et al., 2002, Gupta and Derevensky, 2000, Korn et al., 2006) may currently provide the best opportunity for learning in this regard, although its applicability to the New Zealand context would clearly need to be considered.

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APPENDIX A – SEMI-STRUCTURED INTERVIEW GUIDELINE



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Semi-structured Interview Guideline

Title: Exploration of Youth Participation in Gambling & the Impact of Problem Gambling on Young People in New Zealand

This interview schedule/guideline will be used for 3-5 Individual Interviews with key informants in the addiction, mental health and/or problem gambling sectors who are currently providing services to young people. The purpose of these interviews (Phase 3 of the research) is to explore and identify key components of likely best practice approaches for providing problem gambling services to young people. The interviews will be semi-structured and unformatted as possible; the following set of open-ended questions will be used to guide the interviews. The order and wording of the questions will be determined by the cues provided by participants. Some examples of questions are included as a guide to interviewers.

Interview Guideline Questions / Topics:

- Do you consider gambling an issue for youth?
 - Why / why not?
 - To what extent etc.
- Given the current lack of best practice approaches for youth gambling issues in New Zealand (*dependent on above response*), and your expertise and experience, what would the ideal youth gambling service look like (i.e. a best practice approach to providing youth gambling services)? What do you think is needed?
 - **Guidance:** what would be the needs of practitioners?
 - **Basis for interventions:** evidence/theory/anecdotal - implications for a field like gambling that is in its 'infancy'; International examples of best practice for youth gambling (including the key features).
 - **Holistic vs Specific:** role of holistic (e.g. strengths based - skill building, empowerment, self-efficacy and individual resilience, and respect) versus specific (e.g. education on risks associated with gambling and safe gambling practices) approaches.
 - **Service setting:**
 - Treatment - counselling - individual vs family/peer setting; and/or
 - Early/brief intervention – primary health;
 - Prevention - e.g. school based education / strengths based education;

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- Delivery - by trained professionals / volunteers / peers etc; and,
 - Location - e.g. standalone vs. integrated into other service.
 - **Appropriateness of services** - culture, age, delivery and accessibility (telephone/f2f/text/email/internet).
 - **Assessment** - role of monitoring of outcomes/effectiveness.
 - **Key stakeholders** - role of long-term commitment to program planning, development and evaluation (by government/NGOs - others?).
- o **OTHER POTENTIAL PROMPTS / AREAS TO COVER:**
- Target audience (e.g. age range of service users);
 - Links to other youth/addiction services AND/OR positioning relative to other youth/problem gambling services (e.g. part of broader youth services or part of broader problem gambling services);
 - Accessing the service (e.g. self-referral) – including: advertising/targeting/attracting service users, modes of service delivery, funding model;
 - Similarities/differences of this model to other youth addiction services (e.g. substance misuse);
 - How well are New Zealand services performing relative to this 'ideal'? What would have to change to bring things closer to the ideal scenario?; and,
 - Are you aware of best practice from other youth health domains (e.g. alcohol) that would be useful to adapt/build on for youth gambling?

Approved by the University of Auckland Human Participants Ethics Committee on 9th December 2010 for 3 years. Reference number 2010 / 604.

APPENDIX B – PARTICIPANT INFORMATION SHEET & CONSENT FORM



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Participant Information Sheet

Title: Exploration of Youth Participation in Gambling & the Impact of Problem Gambling on Young People in New Zealand

Funder: The Ministry of Health

Researcher: Dr Fiona Rossen, Ph: 09 3737 599 ext 89218, Email: f.rossen@auckland.ac.nz

What is this research all about and why is it happening?

This study is being undertaken to explore youth participation in gambling and the impact of problem gambling on young people in New Zealand, including patterns and trends of youth gambling and factors that contribute to or cause gambling and problem gambling (risk factors) as well as those that protect individuals from gambling and problem gambling (resiliency factors).

The project also aims to explore and identify key components of likely best practice approaches for providing problem gambling services to young people.

Reports from New Zealand and around the world indicate that young people are affected by problem gambling to a greater extent than other age groups. As such, there is a clear need for accurate knowledge of the issues and impacts of gambling and problem gambling on young people in New Zealand, including the provision of appropriate and effective services.

Who and what will the research involve?

This research involves interviews with 3-5 key informants in the addiction, mental health and/or problem gambling sectors who are currently providing services to young people.

If you choose to take part in this study, you will be asked to participate in one semi-structured interview that will cover issues relating to the impact of gambling and problem gambling on young people in New Zealand. The interview will also explore key components of likely best practice approaches for the provision of problem gambling services to young people. The interview will be undertaken face-to-face and is expected to take approximately 1 hour. The interview will be held at a time and place convenient to you, and if you would like to, you are welcome to bring a support person with you.

The researcher may take notes during the interview, which will also be audio-taped with your consent, but you may request that the recorder be turned off at any time during the discussion. The tapes may be transcribed by a member of the research team for further analysis.

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How will the findings of the research be used?

At present, little is known about the impacts of gambling on young people in New Zealand. This project aims to improve our knowledge on this topic and help to and address the needs of a high-risk population within the problem gambling field. The type of information and knowledge gained may also assist with the development of effective and appropriate interventions and policy initiatives.

A summary of research findings will be sent to the funding agency and other stakeholders, and will be made available to participants at their request. Peer reviewed publications and presentations at conferences will inform academics, researchers, and other stakeholders of the findings.

Keeping what you share safe and anonymous

The research team will ensure that all information provided by you will be kept confidential. Your name or any identifying details will not be used in any reports or publications arising from the study.

If you choose to take part in this study, you may ask any questions about the research at any time and refuse to answer any particular question. Your participation is voluntary and you may choose to withdraw from the research at any time without giving reasons. You may also withdraw any data provided by you, up to 10th of May 2011. Transcriptions of interviews and any other information will be kept by the researchers in a locked cabinet on University premises. Information stored as a computer file will be kept on a University of Auckland server that requires the researchers' password for access. This information may be stored for up to six years after this research for future reference if necessary. After this period, transcriptions will be destroyed by shredding and audio-tapes of interviews will be erased by the researchers after they have been transcribed.

If you agree to take part in this research you will be required to sign the consent form provided.

Any Questions?

If you have any queries or require further information, please contact the Principal Investigator - Dr Fiona Rossen, or the Head of Department - A/Prof Peter Adams:

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For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1142. Telephone 09 373-7999 Ext 83711.

Approved by the University of Auckland Human Participants Ethics Committee on 9th December 2010 for 3 years. Reference number 2010 / 604.

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Consent Form

This form will be stored for a period of six years

Title: Exploration of Youth Participation in Gambling & the Impact of Problem Gambling on Young People in New Zealand

Funder: The Ministry of Health

Researcher: Dr Fiona Rossen, Ph: 09 3737 599 ext 89218, Email: f.rossen@auckland.ac.nz

- I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.
- I understand that the interview will last approximately 60 minutes and that the researchers may take notes during the interview.
- I understand that the research team will ensure the confidentiality of the information that I share with them in the face-to-face interview and that my name will not be used in any reports or publications arising from the study. I agree to provide information to the researcher on the understanding that my name will not be used.
- I understand that I am free to withdraw participation at any time, and to withdraw any data traceable to me up to a specified date (10th May 2011).
- I agree to take part in this research.
- I understand that on completion of the project, a report detailing the research findings will be sent to the research funder (Ministry of Health).
- I understand that the researcher or a third party who has signed a confidentiality agreement will transcribe the tapes.
- I understand that data will be kept for 6 years, after which they will be destroyed.
- I agree / do not agree to be audio-recorded and understand that I may request that the recorder be turned off at any time during the interview.
- I wish / do not wish to receive the summary of the key research findings.

Name: _____

Signature: _____ Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on 9th December 2010 for 3 years. Reference number 2010 / 604.

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Exploration of Youth Participation in Gambling & the Impact of Problem Gambling on Young People in New Zealand

Please send a summary of the research findings to the following address (if requested):

Name: _____

Email address: _____

OR

Postal address: _____
