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A longitudinal study would represent a more comprehensive approach to understanding youth gambling behaviours. It could be incorporated in a much broader study including for example with leisure, health and well-being or substance use surveys. The design of such a study would need to consider the following:

- sample of Year 8-12 secondary students;
- followed up at two year intervals;
- follow up at least three times to ensure that the age range was approximately 13-24 over the life of the study;
- use of two screening instruments included in the survey;
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With the expansion of opportunities for gaming and wagering (each are different forms of gambling) including through increased accessibility of electronic gaming machines (EGMs) in hotels and clubs in all jurisdictions except Western Australia, an expansion in the number of casinos, the proliferation of games of chance (sponsored by state governments and private agencies) including, *inter alia*, X-Lotto, Tattslotto, Powerball, Keno, scratch-tickets and Bingo and the development of new distribution channels for gaming and wagering, there is significant interest in the impact of the exposure of young people to opportunities to gamble.

Increasingly, technological developments such as the internet and the mobile telephony (and also, sophisticated video games) provide new or potentially new distribution channels for gambling participation by young people, who it is recognised are more 'technologically savvy and astute' than their parents. Sports bars and 'events based

- an analysis of the strengths and weaknesses of the different methodologies, taking into account the differing social and gambling contexts in which youth gambling may take place;
- sufficient distinction made between studies of the different age groups (for example, 15-18 years old and 19-24 years old); and
- recommendations on the issues that an approach or consideration of youth gambling prevalence studies would need to address, and a consideration of the issues involved in developing a national youth gambling prevalence survey of 15-24 year olds.

In relation to the last terms of reference, the focus was on highlighting methodological issues for the future, if more detailed consideration was to be given to any national youth gambling prevalence survey. Thus the question to be examined was concerned with issues of methodology and approach; the consultants were not asked to provide a recommendation on whether such a study should be undertaken.

No length was specified for the report as it was not possible to estimate at the commencement of the task just how 'extensive or limited' the available literature might be. The consultants were requested to provide a draft report and to incorporate subsequent feedback into the final report. A period of one month was available to conduct the literature review and to provide the draft report to FaCS. The final report was to be submitted two weeks after the draft has been approved by FaCS.

A comparative analysis of Australian studies on youth and gambling (let alone comparative analysis of international studies) is extremely difficult including because, the definition of the youth cohort almost inevitably varies for every study. A second concern is that almost all prevalence studies are 'point in time estimates', with varying age cohorts, using different screens and survey methodologies and take place in different social and environmental contexts. International comparisons are especially fraught with danger because of differences in gambling regulations, forms of gambling, access to gambling opportunities and age related factors.

Definitions of the youth cohort include 18 to 30 years of age, 'university attending' students, primary school students, Year 12 students, while a number of studies have involved Year Eight high school students (age range 11 to 13). A recent study of South Australian high school attending students (Delfabbro et al, 2003) sampled surveyed year 10, 11 and 12 students. Interestingly in this study, the authors stated that "most adolescents did not experience gambling related problems. Problem gambling was classified as a score of 4 or higher on the DSM-IV-J. Based on this classification, 3.5 per cent of participants could be categorised as problem gamblers."[1] This is consistent with the lower end of rates for youth problem gambling reported in the North America, Canada and the UK that are reported to range from 3.5 per cent up to 8 per cent.

[1] Delfabbro, P., et al (2003), "The social determinants of youth gambling in South Australian adolescents", *Journal of Adolescents*, Vol. 26. p. 323.

In Section 2 we commence a review of the different instruments for measuring problem gambling prevalence and the adaptations of various screens to measuring youth problem gambling (ToR: 1). Section 3 follows and extends on this discussion to review selected prevalence studies on youth problem gambling (ToR: 2), from a range of countries employing different screens and/or research methods. In both sections we have selected a major representative study using the screen under discussion and provided a boxed summary to highlight characteristics of the study and the screen.

The most widely used and quoted tests for problem gambling are the South Oaks Gambling Screen developed by Lesieur and Blume (1987) which emphasises the financial implications arising from excessive gambling and DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th edition) which has a 'greater emphasis on psychological aspects of problems such as preoccupation, development of tolerance, irritability, and gambling as an escape." (Productivity. Commission p. 6.17).

While the two screens referred to above are the most widely used, there are many other screens in use for measuring the prevalence of problem gambling. Shaffer et al (1997) in the meta-analysis of problem gambling prevalence studies, states that:

> "We can be confident that the various instruments used in the disordered gambling field measure essentially the same underlying construct. Further, since there is no "gold standard" for the identification of disordered gambling, we cannot determine the absolute accuracy with which any of these instruments identifies the underlying construct of pathological gambling" (p 52).

However, it is not at all certain from the literature "that we can be confident".

While SOGS was designed on the basis of DSM criteria and uses similar terms to clarify status of the gambler (i.e., pathological, compulsive) Orford (2003) maintains that, disagreements about the terms and definitions used "extends to the very

important aspects of their lives. Sharpe therefore moves towards a comprehensive, biopsychosocial model of pathological gambling.

Blaszczynski (2000), while examining pathways into pathological gambling, concludes that problem gambling is "the end result of a complex interaction of genetic, biological, psychological and environmental factors", (p. 7). He identified three different pathways into gambling and argued that each type contains different implications for management strategies and treatment interventions.

1. ***The "normal" problem gamblers*** *(A group with no pre-existing psychopathology. May lose transient control over their gambling behaviour, but their disordered gambling can remit spontaneously or with minimal intervention)*:

   This group may need minimal interventions, counselling and support services. Self-help and self-control educational materials as well as self-help groups such as Gamblers Anonymous can be effective. They may resume controlled gambling after intervention.

2. ***The psychologically vulnerable group of gamblers*** *(Gamblers who try to deal with their emotional distress or life's pressures by 'escaping' through gambling)*:

   Blaszczynski (1998) advises that, for this group, "*Abstinence is perhaps the best goal of treatment*" (p 37). In addition, these gamblers can benefit from psycho-therapeutic interventions to resolve internal conflict and deal with anxiety. This could include stress management, problem-solving skills, and strategies to enhance self-esteem.

3. ***Group with biologically based impulses: The impulsive gamblers*** *(Defined by the presence of neurological or neurochemical dysfunction, reflecting features such as impulsivity and attention deficit)*:

   This group require intensive cognitive behavioural interventions aimed at impulse control. Medication can be considered, with a view to reducing impulsivity through its calming effects. Blaszczynski et al., (2001) advised that genetic vulnerability is unlikely to be amenable to harm minimisation strategies. This group may therefore be better off abstaining from gambling while receiving treatment.

While this classification has been contested, and perhaps denotes adult pathways, rather than adolescent pathways, there is broad agreement with the explanation or biopsychological model as advanced by Blaszczynski. This represents a marked shift away from the more limited diagnostic / medical models as reflected in DSM criteria. It also stresses the importance of screening tools that are relevant to the social context in which they are applied.

SOGS is a 20-item questionnaire originally developed for use in clinical settings that was designed to evaluate the presence of pathological gambling. It is essentially based on the medical model employing diagnostic criteria to assess pathological gambling. It derived from the various DSM screening instruments, although it emphasises other aspects such as financial impacts of gambling (e.g., borrowing money). The items include questions about returning another day to win back money lost, gambling more than intended, feeling guilty about gambling, being criticised by others over gambling, having difficulty

stopping gambling, and losing time from work because of it. In its original form it used a dichotomous yes/no approach although recent variations of the instrument employ a graded response scale or numbered Likert scales. The respondent is able to indicate a 'degree of relevance' such as often, rarely, never, sometimes, etc.

Lesieur and Blume (1987) based SOGS on DSM-III criteria and 1,616 subjects were involved in its development, from a number of sources but over half were patients with diagnoses of substance abuse and pathological gambling. They found SOGS to be valid, reliable screening instrument for the fast screening of alcoholic, drug-dependent, and other patients for pathological gambling. A refinement of SOGS is the SOGS-R instrumambliee-6 6.8(m)-4ly d(r, som7.3(mits-10difftienm)-.4(betw in6.8activpatholactivpang. er,)0.2

Battersby (2002) suggests an alternative approach is to use the preferred term ‘problem gambling’ and employ a screening instrument such as the Victorian Gambling Screen (VGS) to measure harm to individuals, their family and to the community. The researchers have no evidence that such a screen has been applied to the adolescent population.

other problem behaviours. Their study results demonstrated that the scale had moderate internal consistency, reliability and was significantly related to alternate measures of problem severity for male subjects. Because the rate and severity of gambling among females is very low, the psychometric properties could not be determined for females.

In assessing SOGS-RA, Wiebe et al (2000) suggests that items do not appear to equally contribute to the total score. If some items are better indicators of problem gambling, it is possible that these items should be more heavily weighed. The researchers concluded that there may be important differences in what items are endorsed by problem gamblers compared to non-problem gamblers.

The basis of this model used extensively throughout the United States and several other countries is the ‘medical model’ where problem or pathological gambling is understood as a psychiatric disorder. The model seeks to understand problem gambling as the result of ‘individual pathology’ (i.e. meeting certain criteria) and then these criteria are used to measure prevalence of problem gambling. Supporters of this approach include Gamblers Anonymous, psychiatrists and most obviously, the gambling industry itself. This model tends to ignore the manner in which the broader economic, familial, social

nine items. The screening test's readability was computed using the Flesch-Kincaid Grade Level Test that provides a score based on the average number of syllables per word and the average number of words per sentence. The score indicates a grade-equivalent level. The test has a score of 4.8 and is therefore at a high fourth grade reading level.

Fisher (2000) explored psychometric data on respondents who were fruit machine players. She found that internal consistency reliability was acceptable for a scale of this size.[5] Survey results also demonstrated that there were no weak items as all of the items discriminated extremely effectively between the problem gamblers and non-problem gamblers. More males were problem gamblers than females and therefore more likely to endorse items. Interestingly, Year 8 respondents (12-13 years) were more likely to endorse all the items than the Year 10 respondent (14-15 years). However, there was no significant difference between the age groups in the proportions categorised as problem gamblers. Furthermore, highly significant mean score differences between regular and non-regular fruit machine gamblers on DSM-IV-MR-J provide evidence of construct validity for the scale. However, this revised screen has not been fully validated.

The strengths of DSM-IV-MR-J is that it has been found that internal consistency reliability is reasonable, all items are discriminatory, construct validity is reliable, it is also a variation of an existing screen and it has a very low reading age. The weaknesses are that it has not fully validated and has not been used extensively or in large scale samples.

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Canada assert that the "CPGI is thought to be a more precise measure of problem gambling behaviour among non-clinical populations". [9] It was tested prior to its use in community based surveys and was found to have well established psychometric properties.

Arising from concerns that existing models of problem gambling and their associated gambling screens (SOGS, SOGS-R, DMV-IV, etc) focussed too heavily on pathological gambling and thus were considered to not be appropriate for the Australian situation, the Victorian Casino and Gambling Authority commissioned Flinders Technologies to design a new problem gambling screen. The Victorian Gambling Screen (VGS) was designed and has recently been tested in a study conducted by the Centre for Gambling Research (ANU).[10]

The VGS includes 21 items covering enjoyment derived from gambling (three items), harm to self (fifteen items) and harm to partner (three items), but surprisingly excludes harm to others. These three classifications to account for the 21 questions were developed following focus group discussions with regular and problems gamblers in treatment in Victoria. A pilot validation study was conducted with 239 gambling respondents and we understand, then included detailed interviews with approximately

In this section we examine selected prevalence studies that emphasise adolescent gambling and the use of relevant screening tools. There is a plethora of prevalence studies — far too many to cover in this limited review — so the researchers have endeavoured to select representative studies from different countries, for different age ranges and to reflect the use of different screens.

The British Gambling Prevalence Survey involved interviews and self-report questionnaires with some 7,680 respondents to ascertain the current (last 12 months) prevalence rate. For our purposes the point of interest here is that both SOGS and DSM-IV were used together in the national prevalence survey. Orford et al (2003) concluded on the basis of the use of the two screens that:

- 'no single existing screening questionnaire adequately reflects the multi-dimensional nature of problem gambling' (p. 53);
- there needs to be agreement on threshold levels as to what constitutes a problem gambler (e.g., witness use of 5+, 10+ in SOGS);
- transferability to other countries and cultures 'derives from a simple view of problem gambling as a mental disorder' (p. 63).

It is suggested relatively consistently in regard to SOGS and DSM-IV that they continue to measure two different facets of problem gambling, principally dependence (DSM-IV) and gambling related problems such as financial stress, preoccupation with gambling (SOGS).

Fisher (2000) used and developed the Revised Diagnostic Statistical Manual Adapted for Juveniles (DSM-IV-MR-J). Two pilot studies, amounting to 80 completed questionnaires, were conducted to fine-tune the contents of the questionnaire. The final sample included 9,774 students at high schools in England and Wales, both Year 8 (12-13 years) and Year 10 (14-15 years). The study found that 5.6 per cent scored in the problem gambling range

Wood, Griffiths, Derevensky and Gupta (2002) conducted research with adolescents aged 11 to 15 years using Q-cards to understand rather than measure young people's behaviour in regard to the UK national lottery and scratchcards. The process involved scaled rating of agreement / disagreement with statements leading to attitudinal positions, viewpoints or perceptions. The strength or utility of Q-sorts is that it can help to understand "the views of gamblers and non-gamblers alike", to test questions / responses, develop new types of hypothesis and may be used in behavioural counselling.

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| | Wood, R.T.A., Griffiths, M., Derevensky, J., and Gupta, R., (2002). |
| | UK. |
| | Adolescents 11-15 years (N=62), Q-cards / Q-sorts which are statements on 49 cards taken from screens (e.g., DSM-IV-J), from prevalence studies to test attitudinal dimensions to statements. |
| | Matrix of card responses to make choices about statements; potentially useful tool to help frame prevalence studies, test understanding of questions. |

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| | Wiebe et al (2000).<br>Manitoba, Canada.<br>1,000 youth, aged between 12 and 17 years, random survey of households seeking parental consent to participate. Telephone survey.<br>SOGS-RA: problem gambling 4+.<br>Invariant across gender, internal consistency.<br>Author considers that clinical interviews required to test sensitivity of screen. Some items require rewording to reduce over and under endorsement. |

Poulin (2000) undertook a survey to determine the prevalence of gambling among adolescent students in the Atlantic provinces of Canada. In 1998, a total of 13,549 students in grades 7, 9, 10 and 12 in the public school systems of the four Atlantic provinces completed a self-reported anonymous questionnaire that included SOGS-RA.

13/14 years helped to predict behaviours at 16/17 years, suggesting some underlying, common risk-factors.

Jacob (2000) reviewed 20 juvenile gambling prevalence studies in the USA conducted in the period 1984-1999 in both the USA and Canada and concluded that there is "little doubt that juvenile gambling has increased significantly" over this time frame, with the medium level of participation rising from 45 per cent to 66 per cent. A significant issue with this account is that all forms of gambling are lumped together (illegal and legal based on age). Wagering with peers or a "side-bet on the outcome of a game of pool between two players" is not the same as illegal entry and play in a hotel, club, or casino. Playing the stock market is equated with buying a raffle ticket. While this approach is consistent with gambling viewed as a "continuum of activities" studies rarely inform how much is gambled, the source of income, extent of illegal access/behaviour, etc..

Jacob (2000) provides a composite profile of juvenile "serious gambling related problem (SGRP) groups":

- early age onset (before age 12);
- boys more likely to experience problems;
- parents gamble, or family gambling pattern;
- more likely to live in metropolitan rather than regional/rural areas;
- few studies on ethnic group membership, although Native American youth identified;[12]
- games played are continuous and interactive (as for adults) such as poker, games of personal skill, sports betting and EGMs;
- sources of money: from lunch money through to stealing (but rarely are amounts provided by activity);
- frequent gamblers "more likely" to be involved with heavy use of alcohol and drugs, report more truancy, and poorer school performance; and
- high level of dissociative reactions while gambling and varied motives and psychological states reported for gambling.

Young people over the age of eighteen have been usually surveyed with all adults except for the case of college students that have a number of studies dedicated to them. An example of this is Neighbors et al (2002) that undertook a study on US undergraduate college students. Approximately 560 college students were surveyed using a number of different screening tools. It was found, using SOGS that 83.9 per cent of participants gambled non-problematically (SOGS score less than three), 9.8 per cent of participants were sub-clinical problem gamblers (SOGS score three or four) and 6.3 per cent were probable pathological gamblers (SOGS scores of five and higher).

[12] This should not be a surprise given special exemptions and number of casinos on Native American lands.

Neighbors et al also developed a new screening tool for measuring problem gambling prevalence called The Gambling Problem Index (GPI). It is a 20-item questionnaire and for each item respondents are asked to indicate on a five point scale (never, one to two, three to five, six to ten, and more than ten times), how many times during the previous six months they experienced a negative consequence while gambling or as a result of gambling. The GPI score is calculated as the sum of items in which respondents indicated experiencing the gambling related consequence, at least once, during the previous six months. They found that it correlated moderately well with SOGS (0.42) and GA20 (0.52). However, the authors give no indication of what constitutes problem gambling with this measure. This means that it is very difficult to evaluate its use as a screening tool. The GPI is perhaps best understood as an "outcome measure" to be used to inform the participant of the consequences of gambling and through raising awareness, assist with intervention and treatment.

Winters et al (1993) initially trialled the SOGS-RA to assess the gambling experience of adolescents in the 15-18 age group. The authors reported a problem gambling rate of 8.7 per cent, although the sample was not representative of American youth. The study was one of the first studies to discuss the correlates of problem gambling which included problems with academic performance, drug use, parental gambling and exposure to gambling. The survey was inconclusive on rates of gambling by females. The authors also place in context, the experimental nature of most adolescent gambling: ' infrequent pattern, a low amount of money spent, and absence of problem signs and symptoms', while adolescent gamblers prefer skill based gambling' (sporting events), and low impact forms such as cards, bingo and scratch cards.

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| | Winters et al (1993). |
| | Minnesota, USA. |
| | 1,101 adolescents aged 15-18 years, with two-thirds interviewed by telephone, one third from high school (grades 10-12). |
| | SOGS-RA Modified SOGS for adolescents, tested alongside statewide adult survey using SOGS. |
| | Screen showed internal consistency, reliability and factor analysis of individual items showed a common dimension. |
| | Preliminary study, limited sampling with focus on 'white male adolescents', concern |

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| | Stinchfield, R., (2000).<br>Minnesota, USA.<br>Included 5 gambling frequency questions and two problem gambling items in a self-administered 121 item paper and pencil questionnaire which dealt with alcohol and drug use. Sample was 78,582 9th to 12th grade students aged 14-20 years at high school.<br>Not a gambling screen but gambling questions included in broader survey. Administered in class room setting.<br>Can be undertaken across a school system, very large sample and provides for more accurate measurement, does not require sample to population inference.<br>Restricted to those attending school, may contain self-report bias and not concerned only with gambling behaviour. |

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| | Moore and Ohtsuka (1997).<br>Australia.<br>Objective to examine potential predictors of gambling behaviour and problem gambling, 1,017 young people, age 14-25 years.<br>Predictive model based on Theory of Reasoned Action (TRA), with survey; sections to measure gambling intentions and behaviour. Authors modified SOGS.<br>Attitudes to gambling study.<br>Not a screen but a model of 'predictive behaviour', and not able to predict for problem gambling. |

A recent study of South Australian high school attending students (Delfabbro et al, 2003) sampled surveyed year 10, 11 and 12 students. Interestingly in this study, the authors stated that "most adolescents did not experience gambling related problems. Problem gambling was classified as a score of 4 or higher on the DSM-IV-J. Based on this classification, 3.5 per cent of participants could be categorised as problem gamblers."[13] This is at the low end of rates for youth problem gambling reported in North America, Canada and the UK which are said to range from 3.5 per cent up to 8 per cent.

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| | Delfabbro, P and Thrupp, L., (2003).<br>South Australia, Australia.<br>Survey in 6 schools, sample of 505 year 10, 11 and 12 students, use of 5 point LIKERT scale to assess gambling habits, attitudes towards gambling, problem gambling measure and other factors.<br>DSM-IV-J Fisher 1999 version to assess problem gambling, 9 questions, yes/no response, 4+ indicate problem gambling.<br>N/A.<br>Not an assessment of DSM-IV-J. |

[13] Delfabbro, P., et al (2003), "The social determinants of youth gambling in South Australian adolescents", *Journal of Adolescents*, Vol. 26. p. 323.

Debate continues as to the appropriate theoretical underpinnings of gambling screens, the various models (medical, behavioural, social/environmental) and understanding of problem gambling behaviours that the screens are said to be designed to assess, and the broader understanding of problem gamblers (individual pathology through to the 'continuum of problem gambling'). The medical, individual pathology/addiction model screens to test if the condition is either present or absent (dichotomous). Other theoretical understandings such as the problem gambling approach adopt a scaled or measure of 'at risk' approach to reflect the continuum of possibilities.

Studies into problem gambling using prevalence estimates rely principally on self-reporting techniques, which are frequently unsupported by other information which would improve the validity, reliability and accuracy of the estimates (i.e., known basic characteristics of respondents). The literature indicates that a variety of survey techniques are employed, many of which are not fully explained; conclusions and estimates of cut-off points are often highly subjective. "Goal post shifting' is observed particularly in relation to the degree of gambling participation which is claimed to represent problem gambling. Clear examples of response bias can be observed in many surveys yet this often is overlooked or not commented upon at all.

Svensen (undated) examined the question of how should prevalence be measured in order to explain why Australians' high per capita gambling expenditure does not appear to translate into high (or at least higher) apparent prevalence.

. One explanation for this is the replacement (or contesting) of the previous dominance of the medical model with its emphasis on pathological gambling, by other approaches including *inter alia*, the problem gambling model and harm minimisation. The difficulty of these approaches is that "estimates based on the problem gambling model are arbitrary as they depend upon the degree of problems judged necessary to meet cut-of criteria" (Svensen p. 4).

Broader methodological questions regarding the conduct of prevalence studies, and particularly in regard to young people include:

- non-response bias;
-

bias population estimates for adolescents due to omitting those who have left before

ways: ensure that the survey is as short as possible, researchers should work around the

the role of gambling in youth culture is not well understood; gender issues are important and the role of ethnicity is also unclear. No single prevalence study is likely to satisfactorily address 'existing puzzles'.

ToR:3 considered the need to distinguish between different age groups including 15-18 year olds and 19-24 year olds. In the discussion of various screens in Section 2 we have drawn attention to screens that have been developed for adolescents and in Section 3 provided commentary on selected studies with a focus on youth gambling.

In this brief review it is not possible to cover the ever expanding number of articles and studies into adolescent gambling. Suffice to say, primary school students, secondary and college students from 15 to 24 have been the subject of many studies — in school based surveys, telephone sample surveys, by grade level, through general health and substance use surveys. A variety of methodologies were used; sample and whole population studies; random and non-random selection; longitudinal and point estimates; using adolescent and general screens. The objectives of the many studies are equally varied including, *inter alia*, to report on prevalence rates, to discover risk factors, to assist with education and interventions, and to identify types of gambling causing the most significant difficulties.

One of the most interesting findings is the general conclusion that age has not been found to be a predictor of problem gambling among adolescents (Poulin 2002, Winter et al, 2000, Wiebe 1999). A parent who has/had a gambling problem is more likely to be a predictor of problem adolescent gamblers. Prevalence rates for males are higher than for females (rate varies between 3 and 8 times). The age at which a respondent is involved in a prevalence study appears to influence their response to 'first gambling activities'.

A significant number of studies report higher rates of gambling for adolescents than for adults. An example of this is the study of Gambling Prevalence Among Adolescents in Florida comparing adolescents aged 13-17 years with all adults:

- at risk gamblers (youth 8.2 per cent vs. adult 4.0 per cent);
- problem gamblers (2.7 per cent vs. 0.5 per cent); and
- probable pathological gamblers (1.1 per cent vs. 0.3 per cent).

While many authors/researchers comment on similar findings no satisfactory explanations are provided as to why the rates decline. Table 4.1 and Appendix B provide a summary of youth prevalence studies and adult prevalence studies in Canada. The studies are not comparable because of different definitions, use of different screening instruments, survey methodologies and age ranges of youth. Very few of the studies we have cited report on the accuracy, validity or reliability of their results, a comment supported by Poulin (2000) when she states

> "In the absence of such information it is difficult to know if observed differences in estimates are a reflection of real differences in the rates of at-risk and problem gambling in the underlying populations, or of different methods, or of various threats to validity and reliability", (p. 74).

In terms of this review, we can say that there are numerous studies covering the age range 12 to 17/18 years and class levels 8-12 and primary school level. Young people 18-24 years are almost always included in adult prevalence studies. Canadian Province or USA state commissioned studies on youth prevalence most often are restricted to adolescents aged 12 to 17 years (e.g., Shapira 2002).

| | | | | | | |
|---|---|---|---|---|---|---|
| Atlantic Provinces[2] | B | 1998 | SOGS-RA | 8.2 | 6.4 | |
| Atlantic Provinces | N | 1998 | SOGS-RA | 3.8 | 2.2 | |
| Manitoba[3] | N | 1999 | SOGS-RA | 8.0 | 3.2 | |
| Quebec[4] | - | 1996 | SOGS | 4.8 | 2.6 | |
| Ontario[5] | B | 1994 | SOGS-RA | - | 8.1 | |
| Alberta[6] | - | 1996 | SOGS-RA | 15.0 | 8.0 | |
| Alberta[7] | N | 1995 | SOGS-RA | 25.0 | 21.0 | |
| Alberta[8] | - | 2002 | SOGS-RA | Combined problem and hazardous gamblers | | 9.5 |
| Ontario[9] | - | 2001 | SOGS-RA | Combined problem and hazardous gamblers | | 13.3 |
| Ontario[10] | | 1999 | SOGS-RA | Combined problem and hazardous gamblers | | 8.3 |
| Nova Scotia[11] | | 2002 | SOGS-RA | Combined at risk and problem gamblers | | 5.1 |
| Nova Scotia[12] | | 1998 | SOGS-RA | Combined at risk and problem gamblers | | 6.8 |

In this Section the researchers address ToR:4, specifically to consider the issues that a consideration of youth gambling prevalence studies would need to address and other approaches to improve understanding of youth gambling behaviours and patterns.

This discussion paper on a review of literature of youth prevalence studies and measurement of prevalence of youth problem gambling was prepared for the Department of Family and Community Services (FaCS) as one input into their research and consideration of youth and gambling issues. The paper is not intended to be an exhaustive analysis of the numerous studies undertaken on youth and gambling. This would not be possible given the time frame, but more importantly, the plethora of studies into youth and gambling. The researchers principal focus has been concerned with the different methodological approaches used to study youth gambling patterns,

- a longitudinal study where gambling issues are integrated into broader health issues may in fact, be the preferred approach. It is clear that gambling preferences (and opportunities) change with age while high youth prevalence rates do not appear to translate into equally high rates for adults. Documenting changes in preferences would be part of any longitudinal study. Other issues would include: does gambling frequency peak and then decline; need to separate wagering from gambling, ability to test hypotheses in longitudinal study. Time interval is important for measuring rate or prevalence.

A longitudinal study in which two gambling screens are incorporated would be an appropriate national initiative. While individual States have their own research capacity no State has the capacity or funding to undertake a major, longitudinal study. A component on youth gambling behaviours could be incorporated into other areas, including, *inter alia*;

- youth leisure and well being (where well-being examined issues of isolation, depression, suicide, etc.);
- youth health and leisure; and
- youth leisure including alcohol and drug use survey.

The youth cohort would comprise Year 8-12 students so that the Year 8 group is re-surveyed at Year 10 and Year 12.

For participants in any longitudinal study it will be important that self-awareness feedback is provided. Feedback to raise self-awareness, to improve coping skills and to develop self monitoring skills are an aid in preventing the onset of problem gambling.

Griffiths, M.D, and Wood, R.T., (2000), "Risk Factors in Adolescence: The Case of Gambling, Video Game Playing, and the Internet", *Journal of Gambling Studies* 16(2): 199-255.

Gupta, R. and Derevensky, J.L., (1998a), "Adolescent Gambling Behaviour: A prevalence Study and Examination of the Correlates Associated with Excessive Gambling", *Journal of Gambling Studies*, 14, 227-244.

_____, (1998b), "An Empirical Examination of Jacob's General Theory of Addictions: Do Adolescent Gamblers Fit the Theory?", *Journal of Gambling Studies*, 14, 17-49.

_____, (in press), "Adolescents with Gambling Problems: From Research to Treatment", *Journal of Gambling Studies* 16(2): 315-342.

Jacobs, D. F., (2000), "Juvenile Gambling in North America: An Analysis of Long Term Trends and Future Prospects", *Journal of Gambling Studies* 16(2.3), 119-152.

Ladouceur, R., Bouchard, C., Rheaume, N., Jacques, C., Ferland, F., Leblond, J., and Walker, M., (2000), "Is the SOGS an accurate measure of pathological gambling among children, adolescents and adults?" *Journal of Gambling Studies*, 16, 1-24.

Ladouceur, R, and Dube, D., (1994), "Gambling Among Primary School Students in the Quebec Metropolitan Area", *Journal of Gambling Studies*, 10, 363-370.

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Orford, J., Sprotson, K., and Erens, B., (2003), "SOGS and DSM-IV in the British Gambling Prevalence Survey: Reliability and Factor Structure", *International Gambling Studies*, 3(1), 53-65.

Poulin, C., (2000), "Problem Gambling Among Adolescent Students in the Atlantic Provinces of Canada", *Journal of Gambling Studies*, 16(1), 53-78.

_____, (2002), " An Assessment of the Validity and Reliability of the SOGS-RA", *Journal of Gambling Studies*, 18(1), 67-93.

Powell, J., Hardoon, K., Derevensky, J., and Gupta, R., (1999), "Gambling and Risk-taking Behaviour Among University Students", *Substance Use & Missuse*, 34(8), 1167-1184.

Productivity Commission, (1999), *Australia's Gambling Industries: Final Report* (10). AusInfo: Canberra.

Rossen, F., (2001), "Youth Gambling: A Critical Review of the Public Health Literature", Centre for Gambling Studies, University of Auckland.

Shaffer, H.J., Hall, M.N., and Vander Bilt, J., (1997), 'Estimating the Prevalence of Disordered Gambling Behaviour in the United States and Canada: A Meta-analysis' Harvard Medical School Division on Addictions.

Shaffer, H.J. and Hall, M.N., (1996), "Estimating Prevalence of Adolescent Gambling Disorders: A Quantitative Synthesis and Guide Toward Standard Gambling Nomenclature", *Journal of Gambling Studies*, 12, 193-214.

Shapira, N.A. et al, (2002), "Gambling and Problem Gambling Prevalence Among Adolescents in Florida", a Report to the Florida Council on Compulsive Gambling Inc.

Shaughnessy, J.J., Zechmeister, E.B., and Zechmeister, J.S., (2000), *Research Methods in Psychology (Fifth Edition)*, Boston: McCraw-Hill Higher Education.

Smith, G.J. and Wynne, H.J., (2002), "Measuring Gambling and Problem Gambling in Alberta", Final Report.

Sproston, K., Erens, B., and Orford, J., (2000). *Gambling behaviour in Britain: results from the British gambling prevalence surve*y. London: National Centre for Social Research.

Stinchfield, R., (2000), "Gambling and Correlates of Gambling Among Minnesota Public School Students", *Journal of Gambling Studies*, 16, 153-173.

_____, (2001), "A Comparison of Gambling by Minnesota Public School Students in 1992, 1995 and 1998", *Journal of Gambling Studies*, 17, No. 4.

Stinchfield, R., Cassuto, N.,Winters, K., and Latimer, W., (1997), "Prevalence of Gambling Among Minnesota Public School Students in 1992 and 1995", *Journal of Gambling Studies*, 13, 25-48.

Svensen, S., (undated), "Problem Gambling: What is it and how should its prevalence be measured?"

Udry, J.R. and Chantala, K., (2003), "Missing school dropouts in surveys does bias risk estimates", Social Science Research, 32(2), 294-311.

Ursua, M.P., and Uribelarrea, L.L., (1998), “20 Questions of Gamblers Anonymous: A psychometric study with population of Spain”, *Journal of Gambling Studies*, 14, 3-15.

Volberg, R., (1998), “Gambling and Problem Gambling Among Adolescents in New York”, Report to the New York Council on Problem Gambling. Albany, NY.