

**Recent Research
In the Socio-Cultural Domain
Of Gaming and Gambling:
An Annotated Bibliography
And
Critical Overview**

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EXECUTIVE SUMMARY

This annotated bibliography and critical overview of the scientific literature in the socio-cultural domain of gaming and gambling was supported by a grant received from the Alberta Gaming Research Institute (AGRI) in July 2000. Its purpose is to systematically identify and critically analyze the relevant scientific, descriptive, and policy-oriented literature in this area with the aim of providing a resource that will inform future research and development in gaming and gambling studies.

Accordingly, this review constitutes a source document on gaming and gambling studies produced in the latter part of the twentieth century in English- and French-speaking countries. Studies are included that examine the distribution and patterning of gaming and gambling among population sub-groups; social structural factors influencing those patterns within the context of traditional and emerging norms, values and beliefs; and social impacts of gaming and gambling. Literature produced between 1980 and 2000 in North America, Europe, and non-European Commonwealth countries is included, as well as (in the critical overview) a summary of gaming and gambling among Blackfoot peoples, as recorded in ethnographic studies available through the electronic version of the Human Relations Area Files (eHRAF).

A range of studies representing different methods and disciplines were included as this material was found in both published and unpublished (“grey literature”) forms. Materials were included if they were judged by the project team to comprise a significant contribution to the literature in this domain. Nearly three hundred separate documents were reviewed.

A multidisciplinary group comprising professionals and students from health, social, and library science identified an appropriate search and retrieval strategy and collaborated in critical analyses of the literature. Methods and criteria for searching and appraising this literature were developed by the project team or adapted from other sources to ensure the highest standards of scholarship, balance, and expertise. The project team completed these analyses across empirical, descriptive, and theoretical literature that included prevalence (primary and secondary) studies, trend and correlation studies, descriptive and policy studies, ethnographic and other qualitative studies, and studies that focused on First Nations peoples’ experiences. These studies variously examined patterns of gaming and gambling, as well as socio-demographic and cultural variables. Less commonly, the studies tested or developed social science theory related to gaming and gambling.

Each item is described in an annotated bibliography and discussed in a synthesis review of the literature that considers temporal patterning of research directions and methods; examines the relative proportion of literature focusing on recreational versus problem or pathological gambling; considers patterns in research design and social impacts; and issues concerning research among First Nations peoples and population sub-groups, such as youth, women, the elderly, marginalized groups, and others. The relative contribution of Canadians in general, and Albertans in particular, to the research literature on gaming and gambling is examined. Finally, issues of methodology and social theory are discussed and future directions for socio-cultural research in this field are proposed.

The authors offer suggestions for future research activities. For example, they suggest that future AGRI-sponsored activities address the challenges faced by researchers in dealing with a literature that, although inclusive of a broad range of scientific paradigms and methods, is dominated by social and clinical epidemiology. Moreover, this literature has virtually exploded in quantity during the past five years. Within the epidemiological studies, future prevalence and incidence studies should emphasize prospective and longitudinal research designs. The results of past epidemiological studies need to be replicated and the validity and reliability of screening instruments and rate estimates verified. To monitor

and anticipate trends, as well as to unravel complex relationships among associated behaviours and contexts, appropriate studies designed *a priori* to explore trends and correlations are needed. There is a particularly urgent need for these studies among special populations such as youth, women, and First Nations peoples. Further, the methodological repertoire of gaming and gambling studies needs to be broadened beyond the hegemony of positivist approaches. Support of qualitative, phenomenological research, for example, will stimulate new questions, deepen our understanding of variables identified through epidemiological methods, and identify new variables and relationships to explore further through population level research.

Finally, new epistemologies for the socio-cultural dimensions of gaming and gambling are needed, with greater sophistication in the use and exploration of concepts such as culture and social structure beyond current use. Broadened conceptual approaches will situate gaming and gambling in new thinking that is emerging in contemporary social science, for example, as new forms of imperialism within global cultural patterns, or re-framed in radicalized or marginalized discourses and ethnic epistemologies. Similarly, the non-random nature of socio-demographic patterns of gaming and gambling needs to be explored further, examined cross-culturally, and linked with socio-cultural theory and research methods inclusive of post-structuralist, feminist, and critical theories, among others.

As the socio-historical context gives meaning to gaming and gambling, so do the cultures of research define our knowledge of the socio-cultural domain, and its links to other domains. The time has come to broaden, conceptually and methodologically, the models, methods, and interpretations applied to research in this area.

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I. INTRODUCTION

This annotated bibliography was prepared by faculty of the School of Health Sciences (Addictions Counselling Program) and the University Library at The University of Lethbridge for the Alberta Gaming Research Institute (AGRI). The AGRI is a provincially funded body mandated to expand the breadth and depth of scientific knowledge concerning gaming and gambling, established in 2000 by the Government of Alberta.

The goal of this project is to increase the capacity of Albertan researchers to conduct research in the socio-cultural domain of gaming and gambling by providing a review of the recent literature, including prevalence studies, social impacts, and studies involving First Nations peoples. Moreover, the bibliography highlights contributions of Albertan researchers. This project is one of several targeted annotated bibliography projects completed in the area of gaming and gambling under the auspices of the AGRI.

Although a number of bibliographies and reviews of gaming and gambling have been produced, this is the first annotated bibliography to focus specifically on a systematic search of the research literature in the socio-cultural domain, organized by research approach, which includes prevalence, trend, correlation, descriptive, policy, and qualitative studies. The approach to this annotated bibliography and critical overview is informed by the disciplinary backgrounds of the project team members in anthropology (VMcG; JD), library science (JD), counselling psychology (GN), and addictions counselling (VMcG; GN; MG).

A. HOW TO USE THE BIBLIOGRAPHY

Bibliographical entries are presented in eight sections, according to the type of research the item represents: Literature Reviews, Prevalence Studies (Primary and Secondary); Trend Studies; Correlation Studies; Descriptive and Policy Studies; Ethnographic and Other Qualitative Studies; and Studies Concerning First Peoples' Gaming and Gambling. Within each section, entries appear alphabetically, by author.

Each item in the bibliography contains an individual entry number, a complete bibliographic reference, and an abstract that summarizes and evaluates document content. An alphabetic list of references for items included in the annotated bibliography, providing the full citation for each item, is found in Section III. Each item is entered also in a ProCite5 database, available through the Alberta Gaming Research Institute website. Approximately thirty items considered relevant for more than one section are cross-referenced. The annotation number given to the item reflects its position in the section considered to be its primary locus. For example, the primary locus for Ladouceur (1996) is the section that comprises secondary analyses of prevalence data (annotation number 129 in Section B, part b). This item is cross-referenced also to the literature reviews section (Section A), where it appears alphabetically, with its primary locus number provided as well.

A subject index to the bibliography is provided indicating major subject areas discussed in the annotations at the end of the document. The subject index includes, but is not limited to, keyword subject terms and refers the reader to the entry number of the bibliographic item rather than the page number on which it occurs. The author index provides an easy-to-use searching tool for articles by individual authors and lists the annotation number of articles by author name.

The annotated bibliography is preceded by a critical overview of the literature on the socio-cultural dimensions of gaming and gambling.

B. METHODOLOGY AND SCOPE

a. Search and Retrieval Strategy

Scope

The focus throughout this annotated bibliography is on the scientific literature, which is understood to include theoretical and research publications about theory, practice, and results of scientific inquiry. The references presented represent journal articles, books, chapters, technical reports, dissertations, policy manuals, and unpublished reports concerning the socio-cultural domain of gaming and gambling activities. These resources encompass empirical (prevalence, incidence, correlation, trend, and qualitative studies), descriptive, policy, review, and theoretical literature. The scope of the literature searched includes studies exploring prevalence and incidence; patterns of gambling/gaming behaviors; socio-demographic variables associated with gambling/gaming activity (ex: age, gender, etc.); regional norms; trends; and social consequences or conditions associated with gambling/gaming. As well, literature exploring culturally based values, attitudes, and perceptions promoting or discouraging gaming and gambling, risk-taking, interaction processes, role conflict, social control, and socialization is included. Finally, the search included literature investigating the formation and testing of theories of social network formation; gender roles; play, leisure and recreation; deviance and criminality; and help seeking for resolution of problem gambling. Thus, the literature represented in this annotated bibliography comprises studies undertaken by researchers from a number of disciplines interested in gaming and gambling.

The searches were conducted in a broad manner to ensure, as much as possible, the exhaustion of the available literature regarding gaming and/or gambling from non-problematic (leisure) to problem/pathological dimensions. To avoid missing useful resources, the principal key terms *gambling and gaming* were heavily relied upon. Often, these terms were electronically searched as words in titles, subjects, or abstracts. Where appropriate, Boolean search techniques and truncation (*) were utilized. For example, many of the searches were conducted using *gambl* or gaming*.

Searches were limited to publication dates between 1980 and 2000, English and French language, and to the regions of North America, Europe, and non-European Commonwealth countries, with the exception of some ethnographic literature. The latter was searched through eHRAF, the electronic version of the Human Relations Area Files, for ethnographic research concerning gambling or gaming amongst First Nations peoples in North America.

Key Words

The key words utilized for both the electronic and print index searches were generated from, but were not limited to, the Library of Congress Subject Headings and the researcher's knowledge of gaming, gambling, and social science concepts. Thesaurae, such as those for the Sociological Abstracts and PsycINFO databases, were used where possible during the electronic searching. The majority of the key words were truncated when appropriate. The principle key words used for searching were:

- Gambling
- Gambler
- Gamble
- Gambl* where possible (ex: PsycINFO)
- Gaming

Other successful key search terms were:

- Lotter*
- Bingo*
- Video Lottery Terminal*
- VLT*
- Slot Machine*
- Casino*

Sources

The research team generated the presented references by conducting electronic and print index searches between July and September of 2000. The electronic searches involved utilizing online library catalogues (ex: EUREKA! [University of Lethbridge catalogue]), electronic bibliographic databases (multidisciplinary, specialized, government publication, and in-process publication indexes), and World Wide Web sites (ex: Addiction Research Foundation). Electronic searches were supplemented by search of paper indexes, using references listed in bibliographies and snowballing from cited references. The table below (Table 1: *Bibliographic and Paper Indexes Searched*) lists the electronic and paper indexes searched.

Table 1: Bibliographic and Paper Indexes Searched

Electronic Bibliographic Databases	Paper Indexes
Current Contents	Abstracts in Anthropology
Sociological Abstracts	Anthropological Literature
Project CORK	Social Work Abstracts
Medline	Social Sciences Index
PsycINFO	Physical Education Index
EHRAF	Sport & Leisure
SPORT Discus	
ERIC	
ETOH	
CBCA	
Canadian Research Index	
U.S. Government Publications	
CRISP	
HSRPROJ	
NTIS	
Anthropological Index	
Dissertation Abstracts	

Results

Not all references retrieved included abstracts. The abstracts and the titles of those articles that did not have abstracts were reviewed by a research assistant and were excluded or obtained according to the inclusion criteria in consultation with the principal investigator. Overall, the search strategies appear to have been effective in fulfilling the requirements for this project. The search results reveal the paucity of literature regarding gambling/gaming and seniors, socio-economic status, religion, and occupation. Moreover, in contrast to the amount of literature on recreational gaming, there is abundant literature on problem and pathological gambling.

b. Critical Appraisal of Literature

Items were selected for inclusion in the bibliography if they were judged to be a significant contribution to literature in the socio-cultural domain of gaming/gambling, including prevalence research, social impacts of lotteries and gaming, and Aboriginal issues. For purposes of this project, “socio-cultural” means the distribution and patterning of gaming/gambling among population subgroups; attitudes and opinions about gaming/gambling; social structural factors that influence gaming/gambling; traditional and emerging cultural norms, values and beliefs; and the social impacts experienced by subgroups which can be linked to these patterns. Population subgroups are defined both structurally (e.g. age, gender, ethnicity/culture) and functionally (e.g. occupation, diagnostic category). This bibliography does not claim to be exhaustive, given the short time frame of the project and the fact that human limitations inevitably result in some documents being missed. Rather, the intent here is to provide a compilation of sources that fully represents the breadth of knowledge related to the socio-cultural dimensions of gaming and gambling.

Each piece of literature was read, annotated, and critically reviewed by the lead investigator and at least one other member of the investigative team. Evaluative assessments were carried out using standardized criteria developed by O’Connor et al. (2000). These criteria are outlined in Appendix A. While most annotations are original, edited versions of authors’ abstracts were sometimes used in part.

The user of this annotated bibliography may find helpful the review matrices in Appendix B, which are provided for the prevalence and literature review citations. These matrices, in which studies are listed by author in chronological order of publication, comprise a quick scan across the literature reviewed and indicate geographic location, study population, sample size, method and methodologies used, summary statistics, and a list of other statistics used in each study. Similarly, Appendix C includes 42 citations that were identified in the literature search, but were judged to be of limited interest for this project.

c. Annotations

Each annotation is given a discrete number and provides the full citation for each item. The annotation summarizes, briefly, the purpose and intent of the article, report, or monograph reviewed. Key methodological features and results of the research are highlighted. Finally, each annotation includes a synopsis of the discussion and limitations noted by the authors, as well as a comment by the reviewer concerning particular features of the approach, methods, or findings that researchers exploring the socio-cultural dimensions of gaming and gambling may find useful.

The annotations are clustered according to the primary purpose of the studies: literature review, prevalence studies, trend studies, correlation studies, descriptive and policy studies, ethnographic and other qualitative studies, and studies concerning First Nations peoples. Within each section, the annotations are arranged in alphabetical order by first author.

Although most authors review the current literature with the purpose of situating their study within prior research in the field of gaming and gambling, the articles featured in the “Literature Reviews” section are purposefully focused on surveying and making sense of a specific body of research. “Prevalence and Incidence Studies” are separated into studies that examine data collected by the researcher (“primary”) or data collected by researchers other than the author, or re-analyzed data from previous studies by the same author (“secondary”).

In organizing the literature included in this annotated bibliography, “best fit” decisions were made to cluster particular types of studies together in a manner that would facilitate easier access to the literature by the reader. For example, although meta-analysis is understood generally as a form of statistical analysis that attempts to quantitatively synthesize the literature, and thus may be considered a form of tertiary analysis, meta-analyses of prevalence and incidence data are included in the “secondary” studies section as a re-analysis of previously collected data.

Similarly, a number of prevalence and incidence studies included trend and correlation analyses of the data, or generated hypotheses or interpretations suggesting trends or correlations. Studies that had trend or correlation analysis as their primary purpose were separated from prevalence and incidence studies *per se*, however, and are found in either the “Trend Studies” or “Correlation Studies” sections.

The section “Descriptive or Policy Studies” includes articles that appeared in the research literature as non-empirical, historical, archival, and/or interpretive overviews that discuss the social impacts and policy implications of observed trends, correlations, prevalence, and incidence of gaming and gambling.

The section on “Ethnographic and Other Qualitative Studies” includes research that is largely participant-observation in naturalistic settings. Few studies relying upon other qualitative methods, such as content analysis, phenomenological interviewing or case studies, were identified.

Finally, since First Nations peoples in Canada and elsewhere are disproportionately involved with and affected by gaming and gambling, the last section (“Studies Concerning First Nations Peoples”) includes studies that have either a primary or secondary focus on the experience of Canadian and American First Nations peoples and communities. Literature on indigenous peoples outside of North America is included most often in the previous section (“Ethnographic and Other Qualitative Studies”) and may be located easily through the Subject Index.

C. CRITICAL OVERVIEW OF THE LITERATURE

“Despite its apparent universality, the concept of gambling has no intrinsic meaning; rather its meaning always depends on the socio-historical context in which it occurs. The perception and experience of gambling vary significantly—in its history, its organisation, and its meanings—according to different types of gambling, the various groups involved, and the particular society in which gambling takes place...”

J. McMillen (1996, p. 6)

a. Introduction

The purpose of this review of the literature is to identify and comment on the implications of various themes arising from recent research in the socio-cultural domain of gaming and gambling. This overview is intended as both a review and critical analysis of the scientific literature in the field, including peer-reviewed and “grey literature”, as outlined previously. Our intention here is to provide a synthesis discussion focusing on various themes arising from

the objects, methods, and findings noted in this body of literature, identify gaps, and consider the future direction of research in this domain.

In keeping with the socio-cultural theme of this annotated bibliography, it is our intention also to comment on the social construction of this research. Indeed, thoughtful reflection on the future directions that research in this domain may, and should, take is limited unless this is considered. The reader is cautioned that, due to the time constraints under which this project was completed, we consider this overview necessarily brief and a preliminary analysis only, presented here to stimulate rather than limit discussion. The rich breadth of literature included in this annotated bibliography will lend itself to a variety of analyses to inform future research endeavours. This present discussion considers only a limited set of topics.

b. Research directions: Temporal patterns and methods

The early literature was produced by a relatively few researchers publishing in the mid- to late-1980s. Most of the literature in the socio-cultural domain was produced in the 1990s, with a veritable explosion occurring in the quantity of literature since 1996. Table 2 (*Summary of research trends by type of study in the socio-cultural domain of gaming and gambling, 1980 to 2000*) summarizes the types of studies examined in this review of the socio-cultural literature and the general trends within each category.

In many ways, the socio-cultural literature on gaming and gambling appears fragmented and diverse, and ranges from studies concerned with youthful risk-taking and deviant behaviours to social-economic impacts, depending upon the implied or stated disciplinary orientation of the researcher. Researchers publishing in the socio-cultural domain of gaming and gambling appear to have been, largely, quantitative sociologists and psychologists, although there is limited representation from anthropology and other non-positivist social science disciplines. Not surprisingly, the literature across the two decades of research is dominated by prevalence studies in the form of social epidemiological investigations into the pattern of gambling among representative samples of regional or national populations. Moreover, given the positivist approaches to research that predominate in the branches of sociology and psychology that are most often represented in this research, it is not surprising that the primary focus and emphasis in these studies tends to be on problem and pathological gambling, although gaming and gambling for recreational purposes is given some attention, usually as a backdrop to patterns of gambling considered to be aberrant forms of behaviour (see discussion below).

Generally, the socio-cultural research in gaming and gambling published during the 1980s is methodologically more diverse than studies published during the 1990s. The South Oaks Gambling Screen (SOGS) was widely accepted as an instrument used to identify problem and pathological gamblers in the general population, but a lively discussion concerning its validity for population level research emerged between psychologists involved in social epidemiological research and epidemiologists *per se*. This debate appears to have abated in the 1990s, with SOGS or one of its variant used almost exclusively. Some researchers began to qualify their interpretation of SOGS in the later part of the 1980s and early 1990s, however, referring to “probable pathological gambling” rather than pathological gambling, for example (cf., Volberg and Steadman 1988).

Analysis of the findings from these studies is complicated by the diverse methods and nomenclature used by various researchers; it is exceedingly difficult to compare many of the findings across studies because of differences in instruments, definitions, criteria, etc. that are employed. For example, Ellis (1984) reports that 9.3% of youth sampled spend more time gambling than in any other activity. Lesieur and Klein (1987) report that 91% of youth had ever

gambled. Similarly, some studies identify problem gamblers only, while others distinguish between problem and pathological gamblers, or distinguish between current or lifetime problem and pathological (or probable pathological) gamblers. Findings are clouded further by the diversity of methods used to ascertain problem and pathological (or probable pathological) gamblers: DSM-III, -III-R, -IV; questions added to health surveys; the South Oaks Gambling Screen and its various revisions; Gamblers Anonymous questionnaires; Massachusetts Gambling Screen; and other “ad hoc” instruments.

Table 2: Summary of research trends by type of study in the socio-cultural domain of gaming and gambling, 1980 to 2000. (Includes studies annotated in this bibliography only)

Type of study	Research Trends
Literature Reviews	<ul style="list-style-type: none"> • Nearly all written in 1990s • Primarily focused on problem/pathological gambling • Recreational gambling also considered
Prevalence/Incidence Studies	<ul style="list-style-type: none"> • Several researchers dominate late 1980s literature • 90% of research published in 1990s • Few meta-analyses • Primarily focused on problem/pathological gambling • Recreational gambling also considered
Trend and Correlation Studies	<ul style="list-style-type: none"> • Nearly all published in 1990s • Relatively few studies with <i>a priori</i>, explicit purpose of trend analysis • Correlation studies concerned with other perceived problem behaviours
Descriptive and Policy Studies	<ul style="list-style-type: none"> • Published in 1980s and 1990s • Largely focused on social and economic impacts
Ethnographic and Other Qualitative Studies	<ul style="list-style-type: none"> • Relatively few, consistently published through 1980s and 1990s • Gaming and gambling explored in context of phenomena such as social change • Narrow range of methods represented
Studies Concerned with First Nations Peoples	<ul style="list-style-type: none"> • Nearly all published in 1990s • Most concerned with problem/pathological gambling's impact on communities

Variance across study findings reflects also the diverse sampling frames and contexts from which the samples were drawn. For example, ethnicity, geographical region, gender, age, type of gaming/gambling activity and other variables are known factors associated with variation in prevalence rate estimates. Gender and age differences in patterns of gaming and gambling, and high prevalence rate estimates of problem and pathological gambling among samples drawn from treatment populations or institutions (usually correctional facilities) and from First Nations communities, signal the importance of context in interpretation of the findings of prevalence studies. Finally, comparison of earlier time periods with later periods is confounded

by the recent rapid expansion of gambling venues in many jurisdictions and, thus, increased access to a wider range of gaming and gambling opportunities.

Trend and correlation studies are almost exclusively phenomena of the 1990s, with most publications appearing after 1996. Although several studies attempted time series analysis, few employed more complex methods for analysis of trends planned *a priori*. In keeping with the largely biomedical focus of the literature, correlation studies tend to focus on association of patterns of gambling with prevalence of problem and pathological gambling. A number of studies examine other factors, however, including socio-demographic factors such as gender and age; urban-rural residence; income; family history of gambling; peer group gambling; and forms of perceived deviant behaviour, such as suicide and delinquency. A very few studies examine issues such as self-efficacy.

Comparatively few ethnographic or other qualitative studies were published during the period 1980 to 2000. Gaming and gambling, consistent with the “problem deflation” perspective common to social constructivist approaches (Room, 1984), are largely explored in the context of socio-cultural phenomena such as rapid social change. The range of methods is narrow, however; conspicuous by their absence, for example, are content analyses and other forms of qualitative research.

Nearly all studies concerning First Nations peoples were published in the 1990s. Most were concerned with patterns of gaming and gambling or social and economic impacts of problem or pathological gambling. Few researchers, with the exception of Gabriel (1996), Heine (1991), Nixon et al. (in prep.), and Salter (1979) venture beyond the boundaries of social epidemiology to consider the cultural meanings given to gaming and gambling by First Nations peoples.

Over the period of time examined, one may observe an increasing focus on problem and pathological gambling. Moreover, social and clinical epidemiological methods dominate the published literature. With some notable exceptions, the socio-cultural literature became increasingly descriptive and atheoretical concurrent with the growing emphasis on social epidemiological methods. Speculations about theory appear in the discussions sections of a number of published papers; theory does not generally appear as an explicit organizing framework for research, however. For example, gender role socialization is used to explain different patterns in women and men’s gaming and gambling behaviours. Only one study examined the assumptions inherent in gender role socialization theories and explicitly tested these assumptions in hypotheses. Interestingly, the results did not support gender role socialization as an adequate explanation for observed patterns. The authors concluded that gendered patterns of gaming and gambling more likely reflect rapid changes in women’s socialization, rather than gender differences themselves (Lindgren et al. 1987).

c. Primary foci of studies examined

The primary foci of various types of studies considered in this annotated bibliography are summarized in Table 3 (*Primary foci of gaming and gambling studies in the socio-cultural domain by type of study, 1980 to 2000*), which describes the relative proportions of studies that explored “general” (i.e., population based) patterns of gaming and gambling; studies focusing on problem and pathological gambling exclusively; and studies that considered both general patterns and problem or pathological gambling. Nearly half of studies reviewed were concerned with prevalence and/or incidence. Of these, 56% focused on problem or pathological gambling. Literature reviews were similarly more concerned with problem and pathological gambling than with general patterns (79% versus 8%). Although the number of qualitative studies retrieved is comparatively small (7% of studies), it is worth noting that

among ethnographic and other qualitative studies, 72% were concerned with general patterns rather than problem gambling. Studies concerning First Nations peoples comprised only 12% of the literature reviewed. Of these studies, the majority (45%) considered both general patterns and problem/pathological gambling.

Table 3: Primary foci of gaming and gambling studies in the socio-cultural domain by type of study, 1980 to 2000 (Includes studies in this annotated bibliography only).

Type of study	No. of studies (% of total citations listed in bibliography) ¹	Primary focus of studies ²		
		Focus on general patterns in population or subgroup	Focus on problem and/or pathological gambling; may include related problems	Focus on general patterns and problem and/or pathological gambling
Literature reviews	24 (9.1)	2 (8.3)	19 (79.2)	3 (12.5)
Prevalence and/or incidence studies	125 (47.5)	13 (10.4)	70 (56)	42 (33.6)
Trend studies	9 (3.4)	2 (22.2)	3 (33.3)	4 (44.4)
Correlation studies	66 (24.3)	20 (31.3)	21 (32.8)	23 (35.9)
Descriptive and policy studies	21 (8)	9 (42.9)	4 (19)	8 (38.1)
Ethnographic and other qualitative studies	18 (6.8)	13 (72.2)	1 (5.6)	4 (22.2)
Studies concerning First Nations peoples	31 (11.8)	9 (29)	8 (25.8)	14 (45.2)
Total number of studies ³	264			

¹ Percents are expressed as proportion of all studies included in annotated bibliography (n = 264).

² Percents are expressed as proportion of articles included in type of study.

³ Columns do not add to 100% due to cross-referencing of some articles included in the annotated bibliography, whereby a small percent of articles appear in more than one section

d. What have we learned?

- i) *Prevalence rate estimates.* The prevalence/incidence studies that comprise the larger portion of literature in this domain have been largely descriptive, employing various survey methods intent on giving shape to the pattern of gaming and gambling, particularly problem and pathological forms. The prevalence/incidence studies (primary data only) are

systematically summarized in detail in the review matrix presented in Appendix B. The data indicate that most adults and a large proportion of youth in the general population gamble (Tables 4 and 5). A small proportion of adults experience problems associated with their gambling. As summarized in Table 4 (*Prevalence rate estimates among adults (representative population samples) for ever-gambled and problem or pathological gambling (1980 to 2000)*), estimates of prevalence of problem gambling among adults range from 1% to 11%; of pathological, or probable pathological, gambling, estimates range from 0% to 4.6%. Among children and youth (summarized in Table 5), estimates of problem gambling range from 2.3% to 21%. A methodologically rigorous estimate suggests the proportion of youth experiencing significant gambling problem is about 4.7% (Gupta and Derevensky 1998). For pathological or probable pathological gambling, estimates for youth range from 1.7% to 8.5%, excluding clinical samples. Among Native American samples, estimates for both adult and youth problem and pathological gambling are generally higher than estimates derived from general population surveys (Table 6: *Prevalence rate estimates among Native American (First Nations) adults and youth for ever-gambled and problem or pathological gambling (1980 to 2000)*).

Among adults in treatment for addictive behaviours or resident in institutions (usually correctional facilities), the proportion who report “ever gambled” is similar to general population estimates. Prevalence rate estimates for problem and pathological gambling among these sample groups are generally higher than population estimates, however, with some exceptions (see Table 7, *Prevalence rate estimates among adults in treatment or institution for ever-gambled and problem or pathological gambling (1980 to 2000)*).

Table 4: Prevalence rate estimates among adults (representative population samples) for ever-gambled and problem or pathological gambling (1980 to 2000) (* see Appendix B for confidence intervals)

<u>Prevalence rate estimates</u>		<u>References</u>
Ever-gambled	Problem (prob) or pathological (path)	
30.6%	3.3% probable path	Sommers 1988
NA	2.4 -2.8% prob; 1.4-1.5 path	Volberg & Steadman 1989
NA	2.8 prob; 1.4 path	Volberg & Steadman 1989
88.3%	2.6% prob; 1.2% path	Ladouceur 1991
87%	4% prob; 2% path	Baseline Market Research 1992
NA	5.2% prob; 1.7% prob path	Legarda et al. 1992
99%	1.6% prob; 4.6% path	Zitzow 1992
NA	1.6% prob; 1.7% path	Becona 1993
91%	3.5% prob; 1.5% probable path	Volberg 1993
NA	2.5% lifetime probable path	Volberg & Silver 1993
	0.7% current probable path	ibid
	2.5% lifetime prob	ibid
	1.3% current prob	ibid
NA	1.3% lifetime path	Wallisch 1993
	0.8%% current path	ibid
	3.5% lifetime prob	ibid
	1.7% current prob	ibid
NA	1.2% lifetime path	Dickinson 1994
	0.8% current path	ibid
	2.8% lifetime prob	ibid
	1.9% current prob	ibid

95%	4.2% prob; 2.7% probable path	Volberg & Abbott 1994
84-92%	0.1-2.3% path	Volberg 1994
NA	1.4% prob; 0.9% path	Volberg & Stuefen 1994
NA	4% current prob	Wynne et al. 1994
	5.9% current prob	ibid
	1.5% current path	ibid
	2.7% lifetime path	ibid
NA	11% prob	Citizen Advocacy Society 1995
	0% probable path	ibid
NA	19% prob/potential path	Ferris & Stirpe 1995
	1% path	ibid
75% current	4% prob; 1.04% path	Integrated Planning Grp 1995
97% no prob	0% prob; 2.9% probable path	Zeigler 1995
95%	4.2% lifetime prob	Abbott & Volberg 1996*
	2.1% current prob	ibid
	2.7% lifetime path	ibid
	1.2% current path	ibid
96%	5.5% prob	Baseline Market Research 1996
	41% past year NA	Boreham et al. 1996
NA	1.2% prob	Dickerson et al. 1996
NA	7.8% prob	Lo 1996
68% past yr	2.2% current prob	Wallisch 1996
	3.6% lifetime prob	ibid
	0.8% current path	ibid
	1.8% lifetime prob	ibid
NA	4.4% gambling disorders	Westphal & Rush 1996
NA	0.7% prob; 4% at risk	Hendriks et al. 1997
75.5%	3.1% prob	Moore & Ohtsuka 1997
40%	2.9% path	Blasczynski et al. 1998
NA	9.2% prob; 0.9% lifetime path	Cunningham et al. 1998
NA	1.1-1.5% prob; 1.1-0.8% path	Govoni et al. 1998*
89%	1% path	Shepherd et al. 1998
87.4%	2.8% prob; 2% path	Wynne & AADAC 1998
83%	1.1% prob; 2% probable path	Doiron & Nicki 1999
NA	2.1-2.4% prob; 1.2-1.5% path	Ladouceur et al. 1999
NA	1.5% current path; 1.2% lifetime path	Nat'l Gambling Impact 1999
80.7%	3.4% prob; 2.8% path	Pasternak & Fleming 1999
NA	1.4% prob; 2.1% path	Shaffer et al. 1999
NA	2.2% potential path; 0.8% current path	Bondolfi et al. 2000

Table 5: Prevalence rate estimates among children and youth for ever-gamblers and problem or pathological gambling (1980 to 2000).

<u>Prevalence rate estimates</u>		<u>References</u>
Ever-gamblers	Problem (prob) or pathological (path)	
91%	5.7% path	Lesieur & Klein 1987
89%	NA	Ide-Smith & Lea 1988
76%	1.7% path	Ladouceur & Mireault 1988
85%*	8%* moderate to heavy gambling	Jacobs 1989 (*gambling parents)
59%	6% at risk	Frank 1990

62%	9% probable path	Fisher 1992
62%	NA	Huxley & Carroll 1992
62%	5.7% path	Fisher 1993
86%	NA	Ladouceur et al. 1994
90%	5.8% potential path	Ladouceur et al. 1994
	2.8%path	ibid
NA	6.4-8.5% path	Shaffer et al. 1994
88%	51.4% experienced problems	Adebayo 1995
71%	NA	Buchta 1995
NA	6.5-19.7% prob	Dowson 1995
	11.1%-23.9% at risk	ibid
87.3%	9.9% prob; 11.7% at risk	Mountainview Homehelp 1995
NA	8.7% prob; 21.5% at risk	Cool Aid Society 1995
70%	NA	Derevensky et al. 1996
72.7%	2.5% prob	Devlin & Peppard 1996
75%	NA	Eckstrom 1996
NA	8.1% prob; 9.4% at risk	Govoni et al. 1994-6
77% past yr	2.3% prob; 9.9% at risk	Wallisch 1996
NA	14.3% disordered gambling	Westphal & Rush 1996
67%	8% prob; 15% at risk	Wynne et al. 1996
NA	2.2-2.4% path	Becona 1997
46.8-71.1	reported separately by gender	Stinchfield et al. 1997
98%	NA	Adebayo 1996, 1998
86%	21% prob; 38% path	Westphal et al. 1998
87%	2.9% probable path; 4.4% potential path	Winters et al. 1998
NA	5.6% prob	Fisher 1999
78%	3% prob; 8% at risk	Wiebe 1999
54-56%	NA	Pugh & Webley 2000
86%	10.1% prob; 5.8% path	Westphal et al. 2000

Table 6: Prevalence rate estimates among Native American (First Nations) adults and youth for ever-gambled and problem or pathological gambling (1980 to 2000).

<u>Prevalence rate estimates</u>		<u>References</u>
Ever-gambled	Problem (prob) or pathological (path)	
i). Adults		
NA	2.8% prob; 9.1% path	Zitzow 1992
85%	14.5% lifetime prob or path	Volberg 1993
	12.3% current prob or path	ibid
ii). Youth		
NA	14.8% prob; 9.6% path	Zitzow 1992

Table 7: Prevalence rate estimates among adults in treatment or institution for ever-gamblers and problem or pathological gambling (1980 to 2000).

Ever-gamblers	Prevalence rate estimates		References
	Problem (prob) or pathological (path)		
84%	14% path; 14% probable path		Lesieur & Heineman 1988
NA	6.2% prob; 4.5% path		Ciarrocchi 1993
NA	22.8% prob; 24.3% probable path		Templer et al. 1993
85%	15% prob; 16% path		Spunt et al. 1995
NA	33% path		Daghestani et al. 1996
NA	25% prob; 15% path		Miller & Westermeyer 1996
NA	7.4% prob; 5.2% path		Walters 1997

ii) *Trends and correlations.* From the trend and correlation studies reported during these two decades, several key findings emerge: younger ages at onset of gambling correlate with higher involvement in gambling as adults; modest differences by gender and religious affiliation are noted; lower income is negatively correlated with involvement in gambling, but those at lower incomes tend to spend disproportionately more of their disposable incomes in this activity. Significant correlations of youth problem gambling with substance abuse, and peer and family involvement in problem gambling have been noted. Strikingly, correlation research on youth appears to be at an early stage of development. This body of literature suggests that both age and gender should be considered in future trend and correlation research, as young people are exposed to a wider range of opportunities to participate in different forms of gambling, and as attitudes toward women's gambling change over time.

iii) *Social impacts.* Little systematic research focused on the social impacts of gaming and gambling, which tends to be commented upon rather than analyzed by quantitative studies, particularly those studies concerning First Nations peoples. Goldin (1999) alludes to the "hefty price" paid for short-term gains of casinos on American reservations. Similarly, Hsu (1999) labels casino gambling on reservations in the United States as a "mixed blessing" with strong negative and positive impacts. Among the former, he cites increased crime, decreased quality of life, reduced participation in other activities, damage to the reputation and aesthetics of the community, and fragmentation of communities divided in opinion about investing in casinos. Some positive impacts are noted from interviews with First Nations peoples (Peacock et al. 1999), such as the emergence of stronger and more collective consciousness, increased positive interactions with non-First Nations peoples; and employment and job skill training opportunities. On the negative side, however, respondents cited abuse and addiction, child neglect, neglect of traditional cultural activities, and replacement of traditional collective values by materialism.

Generally, the research indicates that gaming and gambling contributes to the rapid pace of social and cultural change among First Nations communities. One must note the distinction between Western and traditional First Nations patterns of gaming and gambling. Traditionally, gaming and gambling occurred for socially defined purposes. These were not secular activities, however. As Gabriel notes (1996), "An important and overlooked aspect of traditional Indian gaming is that gambling has nearly always been a sacred activity, inextricably bound together with myth, legend, and ritual" (Gabriel 1996, p. 5). Through modern capitalism, gambling is transformed from a collective sacred activity to one focused on individual profit. The literature suggests further that vulnerable,

marginalized groups bear, disproportionately, the negative costs of gambling. This is evident among First Nations communities where gaming and gambling signals a legacy of dispossession, neo-colonization, low socio-economic status, and increasingly rapid social change. Although some Native leaders are skeptical of critiques of the “white buffalo”, these studies point to increasing fragmentation of First Nations communities over gambling issues.

- iv) *Relative contributions by Albertan and other Canadian researchers.* Albertans and other Canadians have contributed disproportionately to the socio-cultural research literature on gaming and gambling, as evidenced by the relative proportion of publications contributed between 1980 and 2000 (see Table 8: *Gaming and gambling studies by Albertan and other Canadian researchers by type of study, 1980 to 2000*). Although the systematic search strategy conducted during the course of this project did not favour Canadian research, nearly one-third of all contributions included in the annotated bibliography are by Canadians. Albertans contributed to nearly 14% of the 264 publications examined. The largest contributions made by Albertan researchers are to studies concerning First Nations peoples and prevalence/incidence studies.

Table 8: Gaming and gambling studies by Albertan and other Canadian researchers, by type of study, 1980 to 2000.

Type of study	No. of studies in section of bibliography	Albertan research/researchers (expressed as % of all studies in section)	All Canadian research/researchers (expressed as % of all studies in section)
Literature reviews	24	2 (8.3)	4 (16.7)
Prevalence & incidence studies	125	17 (13.6)	42 (33.6)
Trend & correlation studies	75	3 (4)	18 (24)
Descriptive & policy studies	21	2 (9.5)	4 (19)
Ethnographic & other qualitative studies	18	2 (11)	2 (11)
Studies concerning First Nations peoples	31	10 (32.3)	12 (38.7)
All studies ¹	264	36 (13.6)	82 (31.1)

¹Thirty studies are cross-referenced and appear in more than one section.

e. What do the published researchers recommend?

During the past two decades, researchers investigating the socio-cultural domain of gaming and gambling from a social epidemiological perspective have called for a deeper mining of observed patterns among particular segments of society, suggesting both objects and methods of study that consider the varied life experiences of men, women, youth, and other segments of society. The list is impressive. Volberg and Abbott (1997), for example, call for research that

examines socio-political-economic factors and co-morbidities among minority ethnic groups, women, and children. Similarly, McMillen reminds us of the socially constructed meanings given to experiences of gaming and gambling, and suggests that different conceptual tools and explicitly political approaches are required to understand contemporary gambling and its rapid global expansion (1996, p. 33). Earlier, Lesieur and Heinemann (1988) point to the need for contextually based research, citing that further research is required on the overlapping social worlds of the substance abusing gambler and gambling substance abuser (1988, p 770). In later analyses, Mark and Lesieur (1992), in their discussion of gender biases in gambling research, note that women's experience of problem gambling must take into account the relationship issues which women face, citing examples such as dominance, subordination, and social control (1992, p 561).

The limited qualitative research situates experiences with gaming and gambling in cultural contexts, where meanings given to these experiences and the influence of social structural factors are taken into account, such as rapidly changing cultural values and socio-political environments, and gendered or age-related experience of gaming and gambling.

In this same vein, it must be noted that the larger proportion of research focuses on male respondents, with results extrapolated to women's experiences. This research fails to take into account observed variation in life experience, gambling involvement, and impacts of problem gambling between women and men. Similar comments apply to youth gambling, where our knowledge and understanding of adult gambling is applied often to younger gamblers

f. Expanding our knowledge of socio-cultural context: The eHRAF and museum collections as alternate sources of information

In the socio-cultural domain, as noted previously, epidemiological methods predominate and considerations of socio-cultural context tend to be both thin and sparse, treating "culture", "ethnicity" and related concepts as static independent variables in statistical analyses. In our opinion, this does not begin to explore the true nature and meaning of socio-cultural contexts, and ignores the persistence of traditional cultural meanings in contemporary practices.

Further, although rich data sources exist, this information is not evident in any of the literature identified in this review. We provide here examples of alternate sources of information concerning gaming and gambling among the Blackfoot peoples of the western plains of Alberta and Montana that are available through the electronic version of the Human Relations Area File (eHRAF) and museum archives, both potentially useful resources for socio-cultural researchers. The project team members are currently utilizing these resources in other projects.

The eHRAF provides an historical database of ethnographic information, including background information for specific ethno-cultural groups and an evaluation of the information provided in the file for each group. For example, the NF06 Blackfoot file consists of 34 English language documents from the 1600s to about 1970, with a concentration on the period from the 1850s to the early 1900s, and a number of twentieth century documents up to the late 1990s. The file is searchable on a range of parameters including aspects of social life, economics, etc. Although the HRAF has yet to be completely converted to electronic form, a simple electronic search on OCM (Outline of Cultural Materials) codes 524 "gaming" and 525 "gambling" yielded 620 matches. The populations/cultural groups for which gaming and gambling citations were located in the eHRAF files are listed in Tables 9 (*Gaming and gambling citations in the eHRAF by population/cultural group: Asia, Europe, Africa, Americas, Australia and Oceania*) and 10 (*Gaming and gambling citations in the eHRAF by population/cultural group: First Nations/indigenous peoples of the Americas*).

Table 9: Gaming and gambling citations in the eHRAF by population/cultural group: Asia, Europe, Africa, Americas (excluding First Nations/indigenous groups), Australia and Oceania.

Population/cultural group	Geographic region	Gaming & gambling citations (#)
ASIA		
Korea	East Asia	4
Taiwan Hokkien	East Asia	26
Central Thai	Asia	23
Garo	Asia	2
Khasi	Southeast Asia	1
Sinhalese	South Asia	1
Kurds	Southwest Asia	7
Ifugao	Asia	1
Eastern Toraja	Southeast Asia	2
Southern Toraja	Southeast Asia	2
Chukchee	North Asia	2
EUROPE		
Saami	Western Europe	3
Highland Scots	Western Europe	2
AMERICAS (excluding First Nations/indigenous peoples)		
Jews, Hasidim	North America	1
North American Armenians	North America	8
Basque Americans	United States	2
Korean Americans	United States	1
Chinese Americans	United States	121
Chinese Canadians	Canada	43
Cajuns	Eastern North America	17
AFRICA		
Tiv	West Africa	6
Mbuti	West Central Africa	3
Hausa	West Africa	19
Kanuri	West Africa	1
AUSTRALIA & OCEANIA		
Aranda	Australia	1
Chuuk	Oceania	1

Table 10: Gaming and gambling citations in the eHRAF by population/cultural group: First Nations/indigenous peoples of the Americas.

Population /Cultural group	Geographic region	Gaming & Gambling citations (#)
Tlingit	North west North America	51
Copper Inuit	Arctic North America	1

Blackfoot	North America	49
Ojibwa	North America	9
Iroquois	Eastern North America	148
Pawnee	Central North America	32
Klamath	Western North America	8
Hopi	North America	11
Tarahumara	Mexico	4
Kogi	Andean-western South America	1
Aymara	Andean-western South America	1
Ona	Patagonia	3
Mataco	Southeastern South America	1
Bahia Brazilians	South America	1

Forty-nine matches on “gaming” and :gambling” were identified in the NF06 Blackfoot file materials, which are retrievable electronically as full-text documents. Although the data must be interpreted with caution as they were compiled through distinctive historical and ethnocentric lens, the eHRAF material provides us with necessary information about gaming and gambling in Blackfoot culture from earliest recorder observations to the present day. From this database, we learn about the ubiquity of gambling: “Games and gambling were almost synonymous among the Blackfoot. Participants and/or spectators bet on the outcome of nearly all games of skill or chance” (Ewers 1955, p. 74). We learn also that the horse, often staked as the subject or object of gambling, held both a sacred and secular position in Blackfoot society, commonly changing hands through gambling. Moreover, the horse appeared symbolically in many forms of gaming and gambling such as the hoop and pole game, and “encouraged interest in other games of chance” (Ewers, 1955, p. 236). War itself was regarded as a form of gambling (Wissler, 1911), and gambling was involved in several aspects of inter-group conflict, such as “counting coup” (Lois Frank, personal communication, 2000) . We are reminded that gaming and gambling are not new to the Blackfoot, and have been important systems for the distribution of goods in a tribal society (Hanks and Hanks, 1950). Forms of gambling commonly played today are described in detail also (e.g., the stick game, or hand game; Ewers, 1958, p. 8).

Similarly, a systematic search of the Blackfoot materials held in the Glenbow Museum (Calgary, Alberta) archives yielded a number of myths, legends, and historical accounts of games and gambling among the Blackfoot peoples (Lois Frank, personal communication, 2000).

g. Implications for managing the scientific literature in the socio-cultural domain of gaming and gambling

The literature on the socio-cultural dimensions of gaming and gambling is remarkable for its diversity, cutting across many disciplines and published in a wide variety of formats, including a substantial amount of grey literature. This complexity has presented challenges to the completion of a literature survey, leading to searches of 17 different electronic databases, six print indexes, as well as many library catalogues and web sites. As the project progressed, it became increasingly apparent that it is important to maintain an up-to-date overview of literature in this area following the initial compilation. Keeping abreast of new knowledge in the field is imperative to support established researchers, encourage new researchers to consider research in this area, and for the development of a broad perspective on socio-cultural aspects of gaming and gambling across disciplinary boundaries.

Such an updating could be accomplished through repetition, on an annual basis, of the search strategy outlined in this annotated bibliography, with results made available as a supplement to the present bibliography. Although requiring a substantial investment of time and effort, regular updates would provide valuable support to research, and the growth of new knowledge in this domain.

h. Implications for counselling, treatment, and associated research

In the emerging era of evidence-based practice, bridges are built between the worlds of research and the worlds of therapeutic practice. Issues emerge from the socio-cultural research literature with important implications for approaches to counselling and treatment.

The socio-cultural literature in the area of gaming and gambling, particularly the prevalence literature, emphasizes uniquely vulnerable populations at high risk of developing problem and pathological gambling. Whether it is the influence of peer pressure among youth, the meaninglessness of retirement life among older adults, or the material poverty and relative marginalization of non-mainstream groups, it is evident that particular contexts or socio-cultural considerations have a disproportionately large impact on the susceptibility of particular subgroups to problem and pathological gambling.

Counselling and treatment for problem and pathological gambling has neglected, in many ways, to recognize these contexts. Cognitive-behavioural approaches, which focus on recognition of distortions in how people think about their gambling, have been emphasized lately over other modalities of treatment, for example. This type of approach suggests that all gamblers can be objectively treated in much the same way, ignoring contextual elements such as gender, race, community, income, age, family situation, and other considerations that are apparent throughout the socio-cultural literature. Moreover, pathology discourses and disease metaphors ignore the socio-cultural contexts in which problem and pathological gambling patterns develop and are maintained.

The socio-cultural literature suggests that the message of prominent researchers such as Volberg and Abbott, Lesieur, and McMillen concerning the need for social constructivist research in gambling studies should be carried into the treatment and counselling arena as well. New therapeutic approaches combining psychological with socio-cultural perspectives, such as narrative therapy, place socio-cultural dimensions of problem and pathological gambling at centre-stage. In contrast to medicalized models of problem and pathological gambling, these alternate therapies allow for recognition of the larger life experience of problem and pathological gamblers. For example, a female survivor of spousal physical and

financial abuse who turns to gambling as a way to gain freedom has demonstrated a wide range of resources and competencies in coping with her situation that need to be recognized in the counselling process, as opposed to singular preoccupation with cognitive distortions. Narrative therapy allows for an alternate, empowering, and healing story to be created by the recovering woman that recognizes her strengths as a resource for healing.

Thus, the key implication for counselling and treatment lies in the primacy of context that emerges from the socio-cultural research literature.

i. The future?

This review of the socio-cultural literature in gaming and gambling published between 1980 and 2000 suggests the following directions for future research in this domain:

1. *Address challenges in dealing with the breadth and quantity of emerging literature.*
 - a. Increase the capacity of the research community to manage the explosion of information and methodological pluralism of studies.
 - b. Develop, or commission through secondment, expertise necessary to critically evaluate research literature appropriately across a range of scientific paradigms and methodologies.
2. *Focus and prioritize prevalence and incidence studies.*
 - a. Invest in studies of understudied subgroups, particularly youth, women, First Nations, and other ethno-cultural groups.
 - b. Replicate previous studies on new and similar populations. In particular, screening instruments and rate estimates should be objectively assessed for validity and reliability.
3. *Invest in trend and correlation studies.*
 - a. Monitor and anticipate future trends by investing in prospective longitudinal studies designed *a priori* for trend analysis.
 - b. Focus correlation studies to unravel the complexities and relationships among social contexts and behaviours associated with gaming and gambling, with particular emphasis on correlations of youth gaming and gambling with deviant behaviours, and peer and family influences.
4. *Broaden the methodological repertoire beyond positivist approaches.*
 - a. Explore new questions through alternate paradigms by recruiting researchers from non-positivist oriented disciplines with expertise and disciplinary depth in alternate methodologies and theoretical orientations.
 - b. Encourage phenomenological research in clinical and naturalistic settings that will deepen our understanding of variables identified through social and clinical epidemiology, as well as identify new variables to investigate at the population level.
 - c. Support and encourage rigorous inductive research that will lead to theory development, particularly concerning the experiences of people of different ages, ethnocultural groups, and genders.
 - d. Support and encourage rigorous inter- and intra-cultural comparative research.
5. *Develop new epistemologies for the socio-cultural dimensions of gaming and gambling.*
 - a. Demand sophistication in key concepts, for example:
 - i. Ensure that the concept of “culture”, as it is understood and operationalized in gambling research, reflects contemporary social theory.

- ii. Ensure that research designs and interpretations of results are free from gender biases.
 - iii. Ensure that research design reflects the non-random nature of patterns of gaming and gambling, for example, social stratification and historical-political-economic relations.
 - b. Encourage research that is explicitly grounded in relevant theory.
 - i. Link gaming and gambling research with contemporary socio-cultural theory and research methods to make sense of rapidly changing contexts and cultural shifts.
 - ii. Consider a broader range of theories: for example, social action, post-structuralist theories, and feminist and critical theories, among others (e.g., as per Mark and Lesieur 1992).
 - c. Demand that interpretations of gaming and gambling research findings in the socio-cultural domain reflects “new thinking” in the social sciences, for example:
 - i. Consider interpreting gaming and gambling among marginalized groups as new forms of imperialism within global cultural patterns (Is casino gambling on reserves and reservations the “white buffalo”, or a form of neo-colonialism?).
 - ii. Interpret the results of research from the perspectives of radicalized or marginalized discourses and ethnic epistemologies (e.g., individualized versus collective orientations) (Ladson-Billings 2000).
6. *Invest in regular updates of the literature in the socio-cultural domain of gaming and gambling.*
- a. Repeat the search strategy outlined in the current bibliography.
 - b. Make the results available in the public domain to professionals in the research, policy, and treatment communities.

j. Final thoughts....

“The shape of modern gambling not only reflects the nature of social relations in any society, but also powerfully determines new social and political outcomes.”
J. McMillen (1996, p. 33)

Similarly, the “cultures of research” define, shape, and give meaning to the nature and scope of our knowledge of the socio-cultural domain and the links between this domain and others. The time has come to broaden, conceptually and methodologically, our research in this area beyond the current hegemony of positivist models, methods, and interpretations in the socio-cultural domain of gaming and gambling.

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II. ANNOTATIONS

A. LITERATURE REVIEWS

- 001 Blaszczyński, A., & Silove, D. (1996). Pathological gambling: Forensic issues. Australian and New Zealand Journal of Psychiatry, 30, 358-369.**

This paper reviews the literature on the putative link between crime and pathological gambling and its relevance to arguments of diminished responsibility. An attempt was made to include all publications in the psychiatry and psychology literature that make reference to pathological gambling and criminal behaviour. The literature supports the contention that pathological gamblers are at high risk for committing criminal offences in order to maintain habitual gambling behaviours. An antisocial personality disorder, while acting to increase the risk factor, is in itself an insufficient explanation for the observed link. As a result of the acceptance of pathological gambling as a psychiatric disorder, the judicial system is being increasingly confronted with an argument of diminished responsibility for gambling-related offences committed by pathological gamblers.

Overall, the weight of the argument holds against accepting pathological gambling as a factor reducing criminal responsibility for offences. However, the presence of a diagnosed pathological gambling condition should be a factor considered in sentencing. Referral to psychiatric services reduces the risk of recidivism.

The review appears thorough and thoughtful, and is accompanied by a bibliography of 70 items.

- 002 Cox, S., Lesieur, H. R., Rosenthal, R. J., & Volberg, R. A. (1997). Problem and pathological gambling in America: The national picture. USA: National Council on Problem Gambling.**

This report, compiled by leading American gambling researchers, summarizes the expansion of legalized gambling in the USA in the final quarter of the 20th century, increases in prevalence of problem gambling, the cost of problem gambling to American society, and responses of the public, private, non-profit, and for-profit sectors to the issue of problem gambling.

Based on their summary of the last decade of research, the authors describe pathological gambling as resulting from the interaction of complex biological, psychological and social factors. The enormous growth of the gambling industry, large increase in numbers of people who gamble, and growing acceptance of gambling are believed to have led directly to increases in the number of problem and pathological gamblers. The authors point to the absence of broad-ranging public policy regarding problem and pathological gambling. Moreover the authors suggest these data indicate that answers to basic questions such as the prevalence of problem and pathological gambling and the social and economic costs of problem gambling are needed.

This report provides a brief, systematic, comprehensive overview of the literature on problem and pathological gambling in America. Socio-cultural researchers may be particularly interested in the summaries of intellectual exchange activities and international responses.

- 003 Crockford, D. N., & el-Guebaly, N. (1998). Psychiatric comorbidity in pathological gambling: A critical review. Canadian Journal of Psychiatry, 43, 43-50.**

This study is a critical review of current literature on pathological gambling as regards the significant psychiatric co-morbidities associated with this disorder. It is noted that pathological

gamblers frequently have co-morbid substance use disorders. In addition, a subset appear to have co-morbid antisocial personality disorder, but they represent a minority when compared with those people who have acquired their antisocial traits as a consequence of their gambling behavior. A co-morbidity with the mood disorders is probable, but methodological concerns and data inconsistencies prevent further exploration of this association.

Emerging research for other disorders possibly associated with pathological gambling is also reviewed. It is concluded that pathological gambling is associated with significant psychiatric co-morbidity. Recommendations for future research are described.

004 Filteau, M. J., Baruch, P., & Vincent, P. (1992). Le jeu pathologique: Une revue de la littérature. Revue Canadienne De Psychiatrie, 37(2), 84-90.

A review of the literature indicates that although interest in gambling is nearly universal, only in the early twentieth century did psychiatrists begin to study pathological gambling. Among the early works was Sigmund Freud's study of Fyodor Dostoyevsky. In 1980 pathological gambling was included in DSM-III. Also reviewed are descriptions of pathological gambling in psychoanalysis, theories of substance dependence, theories of affective disorders, and psychobiological studies. Finally, clinical evaluation techniques and treatment strategies are discussed.

Note: This article is written in French.

005 Gowen, D. (1996). Pathological gambling: An obscurity in community corrections? Federal Probation, 60(2), 3-7.

Aimed at corrections professionals, this article presents a review of the literature on pathological gambling in a community corrections context. Following a brief review of research on the prevalence of problem gambling, the author discusses the development of problem gambling behavior, including Custer's three phases of pathological gambling. The article then discusses the identification of problem gamblers and describes two screening instruments, the Gamblers Anonymous (GA) Twenty Questions and the South Oaks Gambling Screen (SOGS). It also examines problem gambling as it relates to criminal investigation and supervision, and discusses implications for correctional policymakers and administrators.

While not an extensive literature review, with only 16 cited references, this paper offers much specific practical advice on dealing with problem gamblers for parole officers and other corrections personnel.

006 Griffiths, M. (1996). Pathological gambling: A review of the literature. Journal of Psychiatric and Mental Health Nursing, 3, 347-353.

This paper reviews the prevalence and history of pathological gambling and traces the phases of the pathological gambler's career. National survey results indicate that there are more gamblers than non-gamblers. Although most gamblers can control their gambling behavior, a small minority suffers from pathological gambling, which was recognized as a mental disorder in the DSM-III in 1980. The exact causes and reasons for continuing gambling behavior seem to be dependent upon the individual, but there do seem to be some general, underlying factors and reoccurring themes.

The author concludes that explanations of gambling behavior, especially excessive gambling, are best served by an integrated bio-psychosocial model that stresses the individuality and idiosyncratic nature of the development of gambling problems.

007 Griffiths, M. (1995). Adolescent gambling. New York, NY: Routledge.

This book, one of a British series focusing on adolescent studies for professionals and academics, and the first published on adolescent gambling, presents prominent theories and summarizes empirical research in the field. The author presents current knowledge in the field about gambling in this demographic group, which primarily involves young men engaged in fruit machine gambling. The book focuses primarily on this form of gambling in Britain, however, the author situates the phenomenon in current thinking about adolescent gambling in the wider literature and general theories about gambling, and reviews the international literature on adolescent gambling. The research reports largely on the author's studies during seven years of research, which include a range of methodologies (e.g., exploratory, survey, case studies, observational, experimental) and factors (e.g., psychosocial, psycho-biological), integrated using Miller's functional/behavioural analysis model originally formulated to deal with adolescent alcohol abuse. All studies discussed in this volume were previously published in well-regarded peer-reviewed journals. The author provides information concerning the published studies, so that despite their amalgamation in the text, interested readers may refer to the original publications with relative ease.

This book provides an important overview of empirical research and theory concerning adolescent gambling. The reader interested in various approaches in gambling research will find particularly useful the author's rich discussion of his research program that includes various methodologies, selected to answer specific questions emerging in each phase of the research.

008 Griffiths, M. D. (1991). Amusement machine playing in childhood and adolescence: A comparative analysis of video games and fruit machines. Journal of Adolescence, 14, 53-73.

A number of the concerns raised by parents, politicians and social scientists in the US about the playing of video games are similar to concerns raised about the playing of fruit machines (slot machines) in the UK. This paper attempts to put the ongoing US and UK amusement machine debates into an empirical perspective. Based on an extensive review of relevant literature, a comparative analysis of video games and fruit machines is presented. Topics examined include: incidence of play, sex differences and psychological characteristics of machine players; observational findings in arcade settings; the alleged negative consequences of amusement machine playing (i.e., increased aggression and addiction); and an appraisal of amusement machines' positive aspects.

Future directions for research in this area are discussed, and a developmental model of pathology of man-machine (*sic*) relationships is considered.

009 Griffiths, M. D. (1989). Gambling in children and adolescents. Journal of Gambling Behavior, 5(1), 66-83.

This paper presents an overview of the literature on gambling among children and adolescents, citing research in Canada, the US, Great Britain, and India. Three general categories of research are identified: a) direct and indirect studies, usually surveys, on the incidence of adolescent gambling, b) studies of the economic socialization of children, and c) considerations of gambling as play and games as precursors to gambling. The author notes that clear signs of pathology emerge from the research, which is reported in detail. He strongly urges more controlled or systematic research, to understand causal or associational relationships among correlated variables, for example. Moreover, the author suggests that Miller's functional/behavioural analysis model (a framework developed for adolescent alcohol abuse which links antecedent factors to behaviours and consequences) be adopted as a theoretical framework for studying the development of gambling

behaviours among adolescents. The factors in the model are discussed as applied to adolescent gambling.

The author points out that existing findings need to be replicated. Further, he critiques the general lack of survey data on adolescent gambling and the degree of “armchair theorizing”, rather than empirical data. The author provides an argument for using a specific theoretical framework to organize research activity on adolescent gambling, and link research findings to treatment and prevention interventions.

010 Hsu, C. H. C. (1999). Legalized casino gaming in the United States: The economic and social impact. Binghamton, NY: The Haworth Hospitality Press.

Focusing on the American gaming industry, this book provides a comprehensive overview of the literature on history, development, legislation, and economic and social impacts of riverboat, land-based, and Native American casino gaming. Of particular interest to the reader interested in socio-cultural aspects of gaming and gambling are the sections that discuss social impacts of gaming in Native American and non-native communities, including crime, quality of life, and availability of entertainment, recreation and cultural activities; how the industry affects the reputation and aesthetics of a community; and local residents’ attitudes toward gaming in their community. The author discusses impacts of casino gambling in the form of case studies of Las Vegas and Atlantic City, pointing out that the enormous social (as well as economic) dynamics experienced in these cities may overshadow, eventually, any economic benefits gained. Previously unpublished data are presented by the author that compare demographics, traffic and transportation, crime, costs of living, health care environment, and government expenditure in Las Vegas and Atlantic City with other communities.

The chapter on social impacts of Native American casino gaming is based on a comprehensive literature review and makes clear the mixed blessing of gaming in native communities. Among the social impacts identified are intra-tribal divisions, at times resulting in violent deaths, concerning use of casino profits, and management and establishment of casinos. The literature is sparse, however, and there is a dearth of relevant, objective research for proper assessment of the real impacts of gaming for Native American communities, as well as non-native communities in surrounding areas.

011 Knapp, T. J., & Lech, B. C. (1987). Pathological gambling: A review with recommendations. Advances in Behaviour Research and Therapy, 9(1), 21-49.

Pathological gambling is recognized as a mental disorder with explicit diagnostic signs and symptoms. It is a condition widely prevalent and one likely to increase in incidence in the future. The literature is reviewed as to diagnostic signs and symptoms, sub-varieties, epidemiology, and psychometric analysis, as well as psychodynamic, behavioral, group, self-help, and programmatic therapy. Specific recommendations for future research are offered. A bibliography of over 100 references is provided.

129 Ladouceur, R. (1996). The prevalence of pathological gambling in Canada. Journal of Gambling Studies, 12(2), 129-142.

Ladouceur reviews a number of surveys on the prevalence of gambling behaviours (six focus on adults, three on adolescents, and one on primary school children) conducted between 1986 and 1994 in six Canadian provinces (Quebec, New Brunswick, Nova Scotia, Ontario, Alberta, and Saskatchewan). Data from Manitoba and British Columbia are not included; although Ladouceur remarks that the prevalence rate estimates in these provinces are the same as in other regions,

neither the estimates nor citations are provided. The studies reported in detail focus primarily on problem and pathological gambling ascertained through application of the South Oaks Gambling Screen (SOGS) or a variant of that instrument. Other information of interest to the more general reader is presented, however, concerning regional variation in gambling activity: demographics by age and gender (for some regions); relative proportions of problem and pathological gambling; profiles of “typical” problem gamblers; and the most popular forms of gaming activity. Ladouceur implies that rates of frequent gambling (range from 93% in Alberta to 67% in Ontario), and problem and pathological gambling (combined estimates range from 8.6% to 2.7%), are high in comparison to American data, but the latter are not provided for comparison. Standard errors for the reported rates are not included in the information reported for each study, so the astute reader will need to refer to the original articles for this information.

Each study is described clearly and in detail, with attention to similarities and differences in methodologies, as well as flaws in methodology or low response rates, that limit the comparability, reliability, or validity of estimates. Ladouceur’s assessment of the qualitative Phase II follow-up to the Alberta gambling study concentrates only on low response rates and limited “scope” of conclusions, however, although qualitative research is intended to be highly contextual and rich in detail rather than generalizable. Ladouceur neither discusses insights gained through this second phase nor comments on the comparability of themes to similar findings elsewhere, such as a study in New Zealand that used the same procedure.

This review provides valuable advice and cautions on methodological issues. Moreover, Ladouceur highlights areas for further investigation in gambling studies: trend studies to identify changes in the nature and frequency of gambling activity following introduction or spread of casinos and other forms of gambling; systematic investigations on adolescents and primary school children since most “typical” problem gambling among young adult men has its roots in activities initiated at younger ages; research on the psychology of gambling and treatment of pathological gamblers. Finally, Ladouceur delivers an urgent plea to provincial and federal authorities to invest in research and treatment, in light of the data provided.

012 Lamberton, A., & Oei, T. P. S. (1997). Problem gambling in adults: An overview. Clinical Psychology and Psychotherapy, 4(2), 84-104.

There has been a limited amount of comprehensive research into the understanding of the epidemiological, aetiological and treatment variables involved in the development, maintenance and recovery from gambling problems. This paper is an attempt to provide the needed comprehensive overview of such variables. The authors review the current literature on personal and social factors, physiological factors, socio-economic costs, occupational costs, personality, risk factors, and gambler typology based on gambling style. Additionally, this review summarizes the recent literature concerning the prevalence, demographics, and age of onset related to problem gambling. Diagnostic issues such as major affective and psychiatric concomitants and multiple addictions are discussed.

In addition to a review of treatment approaches, the reader is provided with an overview of relevant conceptual frameworks, including both empirically and non-empirically based theories. For example, the authors consider four empirically based theories most useful in enhancing wider understanding of the aetiology of problem gambling: affective, behavioural, arousal, and cognitive theory. Differential influence and interaction of the aetiological factors suggested by these theories is not well understood, however, and warrants further investigation. Significantly, these favoured theories are focused on the individual, micro-level of explanation. The authors are less supportive of “general addiction theory” (by which the authors mean disease models of addiction), physiological theory, normative theory, psychoanalytical theory, or socio-cultural theory as

aetiological explanations for problem gambling behaviour. Researchers seeking a thorough review of socio-cultural theory applied to gambling behaviour or problem gambling will be disappointed by the limited treatment given in this review article, however.

The evidence presented in this review is considered by the authors to suggest that gambling results from a complicated interaction of affective, cognitive, behavioural, and physiological variables. Although the authors acknowledge that many variables contribute to the development and maintenance of a gambling problem, their heavy endorsement of cognitive behavioral approaches leads them to give cursory treatment to important socio-cultural contexts and related variables.

130 Lejoyeux, M., Mc Loughlin, M., & Ades, J. (2000). Epidemiology of behavioral dependence: Literature review and results of original studies. European Psychiatry, 15(2), 129-134.

In this study, pathological gambling is regarded as an example of a behavioral dependence, a condition characterized by the repetitive occurrence of impulsive and uncontrolled behaviors. Following an extensive review of relevant literature on behavioral dependence, results are described from an epidemiological study on behavioral dependence (i.e., pathological gambling, intermittent explosive disorder, kleptomania, compulsive buying, and trichotillomania) among alcohol-dependent patients. Of 79 adult patients, seven were found to be pathological gamblers. Patients with co-occurring pathological gambling tended to be male and were younger at the onset of alcohol dependence, had a significantly longer duration of alcohol dependence, and had a higher mean number of detoxification experiences compared to patients without behavioral dependence.

General conclusions from the study are that behavioral dependence is often associated with depression and/or alcohol dependence, and that levels of sensation-seeking, disinhibition and experience-seeking are higher in alcoholic or depressed patients who also present behavioral dependence.

013 Lesieur, H. R. (1989). Current research into pathological gambling and gaps in the literature. H. J. Shaffer, S. A. Stein, B. Gambino, & T. N. Cummings (Editors), Compulsive Gambling: Theory, Research, and Practice (pp. 225-248). Lexington, Massachusetts/Toronto: Lexington Books.

This literature review provides an extensive survey of the pathological gambling literature to 1988. The variance in prevalence rate estimates for national and state surveys is attributed by the author largely to the difference in methods used, as there is no broadly accepted standard for epidemiological research into pathological gambling. Despite contrasts in methods, patterns emerge from the studies reviewed. These patterns are summarized, along with relevant details of particular sampling methods used in the studies that contribute to bias in the results. Data supporting a bio-psychosocial theoretical framework for understanding the etiology of pathological gambling are discussed. The author calls for more systematic investigation of prevalence rates, including prevalence rates among particular demographic groups such as youth; ethnographic studies among ethnic minorities; studies on the impact of compulsive gambling on children and the family; workplace issues, including employee assistance programs (EAPs); and studies on other questions such as the indebtedness among pathological gamblers, crime, and use of social services.

The author concludes by identifying critical gaps and four key themes that will frame future research: definitional and diagnostic issues stemming from the differing perspectives of problem-oriented and disease-oriented theorists; approaching pathological gambling by studying and generalizing from pathological gamblers in treatment or by focusing on gambling itself and generalizing to the problem gambler from there; deductive versus inductive strategies, of which the author supports the latter for its basis in grounded theory; curiosity-driven versus research directed

towards alleviating human suffering. The socio-cultural researcher will find much to consider in this lively and provocative review.

- 014 Lesieur, H. R., & Rosenthal, R. J. (1991). Pathological gambling: A review of the literature (Prepared for the American Psychiatric Association task force on DSM-IV committee on disorders of impulse control not elsewhere classified). *Journal of Gambling Studies*, 7(1), 5-39.**

The literature on pathological gambling is reviewed here to support the work of the American Psychiatric Association's work group on disorders of impulse control, not elsewhere classified. Following a review of the definition of pathological gambling, the new Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria are introduced, and the phases of the career of the pathological gambler are outlined. Research on pathological gambling and psychiatric disorders, substance abuse, family issues, children, finances, and crime is discussed. Psychoanalytic, personality, behavioral, sociological, physiological, and psychologically based addiction theories of pathological gambling are also summarized. Finally, research on treatment outcome is reviewed.

- 015 Murray, J. B. (1993). Review of research on pathological gambling. *Psychological Reports*, 72, 791-810.**

The literature on pathological gambling behavior was examined for answers to the following questions: have psychological test profiles that distinguish pathological from social gamblers been identified; is pathological gambling an addictive disorder; have studies of alcoholism and addiction increased understanding of compulsive gambling; and has psychotherapy or Gamblers Anonymous been successful for pathological gamblers? Following a very extensive review, it is concluded that much more research is needed to expand current knowledge and understanding related to the questions posed above. The following observations were noted: no one personality profile definitive of pathological gamblers has yet been identified; pathological gamblers have been successfully treated in treatment programs with alcoholics and substance-abuse addicts; and the description of pathological gambling as an impulse control disorder has been questioned, with some studies suggesting that gambling may be related to other psychiatric or medical disorders, especially depression and obsessive-compulsive disorders.

The author suggests that a single theory of psychology of gambling is unlikely to fully explain pathological gambling behavior.

- 016 Petry, N. M., & Armentano, C. (1999). Prevalence, assessment, and treatment of pathological gambling: A review. *Psychiatric Services*, 50(8), 1021-1027.**

This literature review examines data on the prevalence, assessment and treatment of pathological gambling from entries in PsycLIT and MEDLINE during the period 1984 to 1998, with the purpose of providing mental health providers with information for diagnosis and treatment. The scope of the search was limited to 47 research articles evaluating screening instruments or the efficacy of treatment, and a further 21 that focused on prevalence. The prevalence of pathological gambling is associated by the authors with the growing spread of legalized gambling in casinos and increased participation in gambling in the US. Moreover, as public awareness grows, demand for treatment increases as well. Commonly used assessment instruments (e.g., South Oaks Gambling Screen, or SOGS; Lie/Bet screen) are discussed, as these are used to identify point and lifetime prevalence rates. The lack of standard treatment for pathological gambling is discussed and strategies for improving rates of retention to treatment and support groups, as well as abstinence, are suggested. The relative efficacy, or potential for success, of various modalities of treatment (e.g., cognitive-

behavioural, family and marital counselling, brief motivational interviewing, pharmacological, and self-help) are discussed.

The authors provide a comprehensive sweep across the field, including a critique of screening instruments. For example, the application of SOGS for psychometric assessment at the population level of inquiry is questioned, and attention is drawn to the limitations of the SOGS questionnaire. Studies that compare the efficacy of treatment across two modalities are presented and discussed in detail, assuming some familiarity with research design and critical appraisal among readers. Although distinguished from professional therapy, Gamblers Anonymous (GA) groups are identified as “treatment”, thus situating GA among health care interventions, rather than among the “mutual help” or “support” groups of the 12-step tradition. Further, although the authors suggest that combined GA and professional therapy may be more effective for some participants, evidence to support the suggestion is limited to two studies in which methodological flaws are noted in this review. Other modalities of treatment, limited in scope because of the relatively few studies that explore the effectiveness of various treatment approaches, are examined. Both strengths and limitations of the evidence provided by these studies are identified.

For the non-clinician reader, this review provides necessary information on the prevalence of pathological forms of gambling and a critical assessment of its measurement using commonly applied screening instruments. No correlation statistics are presented for the proffered trend analysis, however, and the astute reader will need to consult the original references for confirmation of the trends in prevalence that are suggested. The data presented underscore the need for meta-analysis of prevalence studies and related data.

017 Saskatchewan Justice Department of Legislative Services. (1993). Social implications of gaming: A literature survey. SK: Legislative Services, Saskatchewan Justice.

An overview of literature pertaining to problem and compulsive gambling is presented in this survey. The report begins with a review of research on gambling participation, addressing questions of who gambles, why people gamble, and who benefits from gambling. The literature on the social implications of problem and compulsive gambling is then discussed, covering the following topics: definition and prevalence of problem gambling and the identification of problem gamblers; problems associated with excessive gambling including multiple addictions, mental health problems, financial difficulties, family and workplace issues, and crime; teenage gambling; the addictive potential of particular forms of gambling; and street crime. Finally, the literature on gambling prevention and treatment is reviewed, with attention to the current situation in Saskatchewan. A bibliography of 33 items is provided.

Researchers interested in socio-cultural aspects of gaming/gambling will find this resource to be interesting in part, but limited. Although attitudes toward gambling, and motivation to gamble are noted and compared between countries and across time periods, the focus of the review is largely on problem and compulsive gambling in the USA and Alberta. No parameters for the literature review methodology are provided, thus the scope of the search is not described.

018 Slavik, W. (1993). A review of the research literature and other sources on problem gambling. AB: AADAC.

The intent of this report is to provide an introduction to the main issues related to problem gambling through a review of research literature and other sources on gambling. It is noted that research in this area is relatively new, and this is reflected by gaps and limitations in the research literature. Four main areas are reviewed: definition of terms, prevalence studies, treatment programs, and evaluation and related studies. In this last category are included studies on multiple

disorders, physiological effects, problem gambler profiles, impact on family, gambling and Aboriginal peoples, adolescent-based studies, and prevention program studies. Canadian programs for problem gamblers are identified and described. A bibliography of 48 items is provided.

019 Stinchfield, R., & Winters, K.C. (1998). Gambling and gambling problems among youths. Annals AAPSS, 555 (March), 172-185.

This article summarizes current knowledge about the nature and extent of youth gambling and provides a preliminary developmental perspective on youth gambling. Current knowledge is conceptually organized for the reader on a number of themes arising from the research literature: the continuum of involvement in gambling, prevalence of participation, differences by gender and age, ethnic and racial differences, age of onset, rates of youth gambling and problem gambling, prevalence rates of pathological gambling, and the influence of family history.

The authors compare estimated rates of serious gambling problems among youth gleaned from well-known reviews (4-6%, Jacobs 1993; 4.4-7.4%, Shaffer and Hall 1996) and note that these estimates are significantly higher than rates of pathological gambling among adults (1-3%, APA). Two more recent studies from Alberta and Minnesota, employing different methodologies, are reviewed in detail. Estimates of problem and pathological gambling from the Alberta study are slightly higher than observed in the previous studies and suggest that there are “problem gambling social groups” among young males. The Minnesota study, which used a statistical approach to identify common and uncommon gambling behaviour, proposed a reference point may be extrapolated to distinguish normal and abnormal patterns. The findings suggest that gambling activity among youth did not increase with expansion of the gambling industry. Further, they suggest that variables associated with high frequency gambling among youth may be part of a constellation of deviant behaviours mainly exhibited by young males.

Three studies, two involving the authors of this review, are summarized that provide information about youth gambling trends. The findings indicate that youth gambling has remained fairly stable among most young people, although a small minority are gambling more. The authors emphasize the narrow interval examined in these studies, however, and suggest that monitoring continue. Further, they suggest that little is known about the role of gambling in youth psychological development. If adolescent gambling is assumed to be a premorbid sign of adult pathological gambling, longitudinal studies should be undertaken.

The article concludes with a discussion of adolescent risk literature, including the literature on risk for drug use and abuse and theories of adolescent substance use, with the intention of building a development model of adolescent gambling. From this literature, the authors identify six higher-order risk factor domains: genetic/biological, psychological, family, school, environment context, and onset. Risk factors identified in the drug abuse literature were compared with gambling risk factors. Several common risk factors were identified, including individual, family, and community. Limitations to this comparison are discussed. Theories of substance abuse (cognitive-affective, social learning, conventional commitment and social attachment, and personality) are reviewed. This literature is not well integrated with the discussion on adolescent gambling, however, nor is the underlying assumption (that the same underlying processes are common to both adolescent gambling and adolescent drug use and abuse) well established in this review.

The authors point out that there remain large gaps in our knowledge about youth gambling: trends over time in the context of changing access and exposure to gambling; motivations; measurement of problem or pathological gambling among adolescents; evaluation of prevention programs and school prevention curricula. This article is a useful compilation of current thinking in the field and identifies some important gaps and ideas for future research.

020 Stirpe, T. (1995). Review of the literature on problem and compulsive gambling. ON: Addiction Research Foundation/Ontario Ministry of Health.

In an extensive survey of the problem gambling literature, the following topics are reviewed: definitions of problem and compulsive gambling; prevalence of gambling behaviors; gambling activity preferences according to demographic factors; history of gambling laws in Canada; reasons for gambling, theories of gambling; models of gambling behavior; profiles of gamblers; warning signs of excessive gambling; assessment of problem gambling; factors influencing gambling behavior; consequences of problem gambling; comparison of gambling with other addictions; multiple addictions; gambling and mental illness; outreach, prevention, and treatment; public opinion of gambling; training and education about problem gambling; and public policy issues related to gambling. A lengthy bibliography of several hundred items, subdivided by topic, is provided.

139 Walker, M. B., & Dickerson, M. G. (1996). The prevalence of problem and pathological gambling: A critical analysis. *Journal of Gambling Studies*, 12(2), 233-249.

The authors of this study define prevalence of pathological gambling as the percentage of individuals in a given community at a given time who can accurately be labeled as pathological gamblers. This definition requires that the community be specified; that the time in which the count of cases is made be specified; and that the criteria for determining the presence of pathological gambling be specified. Published research on prevalence of pathological gambling is reviewed and evaluated in terms of these criteria. In many cases, the research fails to adequately meet these requirements.

The major error identified in all but the most recent surveys is the use of questions which ask whether gambling-related problems have ever occurred rather than whether they are currently occurring. This error leads to over-estimates of the prevalence of pathological gambling. The second major error identified in nearly all studies involves the accuracy of the screens being used to assess whether or not an individual is a pathological gambler. Concerns about the accuracy and efficiency of the South Oaks Gambling Screen have not yet been satisfactorily resolved. None-the-less, the widespread use of the South Oaks Gambling Screen has made a valuable contribution to international comparisons of prevalence studies. Sampling bias is discussed as another source of error.

Future work that explores the emerging relationship between levels of personal expenditure on gambling, types of gambling product and gambling-related problems are recommended.

021 Wildman II, R. W. (1997). Gambling: An attempt at an integration. Edmonton, AB: Wynne Resources.

The author disputes a commonly held idea that little has been written on gambling by presenting a bibliography of over 3,800 items dating from 1500 to 1996, and comprising of clinical, research, scholarly, and discursive reports related to gambling.

Approximately 1,800 of these references are discussed in a comprehensive review that attempts to explain and integrate all aspects of gambling. The following topics are covered: definition and differentiation; history; parameters of general gambling; personal and individual factors relevant to gambling; mental and physical status of gamblers; typologies of the gambler; demographics of gambling (including prevalence); motivations for gambling; life in a gambling environment; mathematics of gambling; treatment of problem gamblers; societal implications of gambling; and

an international perspective (ethnic dimensions). The author charts the growth of gambling literature, noting that most has been published since 1980, and over 60% in the last six years covered by the bibliography. This work fills a much needed gap in the literature of gambling in its attempt at both a synthesis and an exhaustive compilation of gambling literature through 1996.

Of particular interest for researchers interested in socio-cultural aspects of gaming and gambling are mentions of a few explanatory theories (e.g., archetypes and magic, adult play, and socialization/social lubrication) and a summary of prevalence studies, which attempts to situate particular socio-demographic patterns with normative orientations (such as prescriptive, proscriptive, or ambivalent attitudes).

The section on societal implications of American Indian gambling provides a succinct history of the impact of some American policies on Native American communities. Readers interested in the socio-cultural domain who are looking for a broad discussion of ethnographic materials will not find it in this review of the literature, as the few materials included receive cursory description in the chapters on societal implications and international perspectives. A much fuller discussion is afforded the sociological literature on gambling in Britain. Similarly, the chapter on international perspectives is limited to brief descriptive summaries of selected literature on gambling activities in 24 countries. Ethnographic research (such as available in the Human Relations Area Files, HRAF or eHRAF) has not been systematically treated in this review. The review carries a clinical and policy oriented bias.

B. PREVALENCE AND INCIDENCE STUDIES

a) Prevalence - Primary

- 022 Abbott, M. W., & Volberg, R. A. (1996). The New Zealand national survey of problem and pathological gambling. Journal of Gambling Studies, 12(2), 143-160.**

This article presents data from a two-phase national survey of gambling and problem gambling conducted in 1991 in New Zealand with the primary purpose of establishing the extent of problem gambling in comparison with American and Canadian data. The second phase was intended to assess the validity and reliability of the South Oaks Gambling Screen (SOGS), which had not been validated previously for general population surveys, and other aspects of problem involvement in gambling. The results, which are presented in the historical and cultural context of gambling in New Zealand, indicate that the socio-demographic profiles of problem gamblers in different countries are remarkably. Most New Zealanders have gambled at some time, but significant differences were noted in patterns of gambling (by gender, age, ethnicity, region, family history of problem gambling, and employment status). The lifetime prevalence rate for probable pathological gambling was estimated at 2.7%; for problem gambling, 4.2%. The association between gambling problem development and participation in continuous forms of gambling is supported. Evidence for the patterning of gambling “careers” and problem development is discussed.

The authors provide details concerning the methodology followed in each phase of this study, including the modified SOGS instrument (SOGS-R), which has an expanded section covering different types of gambling engaged in, frequency and recency of participation, and expenditure, socio-demographic data, and a 6-month measure of problem and pathological gambling. The latter was added to provide information on point (current, 6-month) and lifetime prevalence for policy makers and service providers.

Important methodological issues are discussed concerning the positive predictive value and construct validity of the SOGS and SOGS-R for general population surveys. The results indicate that the lifetime SOGS measure reliably identifies at-risk individuals, but generates large numbers of false positives in the process. The current SOGS-R measure produces fewer false positives, but significantly more false negatives and is thus regarded as a weaker screen for pathological gamblers. Past surveys that used SOGS likely produced inflated estimates of the true prevalence rates. Implications are discussed for the sampling design strategy used in future surveys. Moreover, the authors suggest that future research should include a wider variety of research approaches, including a variety of quantitative and qualitative methods.

- 023 Adebayo, B. (1998). Luck of the dice: Gambling attitudes of a sample of community college students. College Student Journal, 32(2), 255-257.**

Data from a college-wide survey of gambling habits of students enrolled at a rural Alberta community college are reported in this brief article. Questionnaires including many of the items on the South Oaks Gambling Screen (SOGS) were used in a college classroom survey of 521 students (response rate = 86%). The author provides details of steps taken to increase reliability and validity of responses and a limited socio-demographic profile of the sample (age, gender, marital status). Frequency data are cited for responses to questions about gambling activities and reasons for gambling, but no confidence intervals are provided.

Although the author describes the results of cross-tabulation of responses with age, gender, and marital status of respondents, only frequencies are given and relevant statistics are not given in the paper. The conclusions are cautious, but the author suggests that counselling centre staff need to

focus on changing students' opinions about gambling through educational programs, targeting views among college students that gambling is a quick fix for financial problems. The relative effectiveness of educational programs for this purpose is not discussed.

024 Adebayo, B. (1998). Gambling behavior of students in grades seven and eight in Alberta, Canada. *Journal of School Health*, 68(1), 7-11.

This article reports results from a survey of gambling activities among 745 seventh and eighth grade students in an area of northeastern Alberta, Canada that is primarily rural with a high concentration of Native American communities. The survey instrument included a modified version of the South Oaks Gambling Screen – Revised Adolescent (SOGS-RA), and solicited data on demographics, gambling frequency, preferred gambling activities, duration of gambling, and maximum wager.

Results confirmed that gambling is widespread among young adolescents with 98% of respondents having gambled in the 12 months preceding the survey. Scratch tickets was the gambling activity most often played, followed by bingo. For most gambling activities, eighth grade students were more likely to participate than seventh grade students. Students who lived with biological parents were less likely than those who did not live with biological parents to engage in all but one of the gambling activities. Boys were more likely than girls to engage in all forms of gambling activities. Sports betting and wagering on games of skill were mostly male domains, whereas females tended to prefer games of chance. The author concludes with a discussion of implications of the survey for public health officials.

025 Adebayo, B. (1996). Gambling behaviour of young adolescents: A survey of grades 7 and 8 students. Lac La Biche, AB: AADAC.

In a study designed to investigate the nature and prevalence of adolescent gambling behavior, data were collected from 745 students in Grades 7 and 8 in ten Northern Lights School Division schools. Students completed in-class questionnaires (copy appended) adapted from the South Oaks Gambling Screen-Revised Adolescent (SOGS-RA).

Results reported include prevalence of both adolescent gambling (98% of respondents had gambled during the past year) and gambling-related problems; preferred gambling activities, frequency, duration, and expenditures; age and gender comparisons; living arrangements and gambling; peer and parental factors; sources of support; and personal and interpersonal costs. Implications for education and counseling programs are discussed.

026 Adebayo, B. (1995). Gambling among college students: Extent and social correlates. Lac La Biche, AB: Alberta Vocational College, Office of Research & Development.

This report describes findings from a survey of gambling attitudes and behavior of college students in northeastern Alberta. Self-administered, in-class questionnaires were completed by 521 students at various campuses of Alberta Vocational College-Lac La Biche. Questionnaires included questions from the South Oaks Gambling Screen (SOGS); a copy of the questionnaire is appended to the report. Results provide information on the gambling of college students in the following areas: prevalence; preferred gambling activities, frequency, intensity, duration, and expenditures; attitudes and beliefs toward gambling; gambling-related problems; and socio-demographic comparisons (age, gender, marital status, ethnicity). Implications of the results for policy, treatment, and prevention are considered.

This study represents the first research on gambling behavior and attitudes of college students in Alberta, and one of the few comprehensive studies of gambling attitudes of college students in Canada. The report is also important for raising awareness among both students and college administrators of the extent of gambling participation and problems among college students.

027 Azmier, J. J. (2000). Gambling in Canada: Triumph, tragedy, or tradeoff? Canadian gambling behavior and attitudes: Summary report. Calgary, AB: Canada West Foundation.

This Canada West Foundation report is the first independent national study of gambling in Canada, and presents the results of a random sample telephone survey administered in June 1999 to 2,202 respondents age 18 years of age or older. Designed to provide data concerning public policy issues, the study explored four areas: the impact of gambling on the non-profit sector; opinions, attitudes and public policy implications of gambling; the history and scope gambling in Canada; and the socio-economic impact of gambling on communities. Detailed information is provided concerning the methodologies employed and overall research design, including the source and structure of interview instruments to measure behaviours (e.g., participation, frequency, motivation) and attitudes (e.g., acceptability, regulation, charitable gaming, First Nations gambling, usage of gambling revenues, impact on individuals and communities). The questionnaire was developed from existing gambling opinion surveys, including research in Canada and an important set of surveys conducted in Australia. Details of sampling within the five "lottery regions" of British Columbia, Western Canada, Ontario, Quebec, and the Atlantic provinces are provided, with weighted adjustment factors and standard deviations reported. Regional, historical, and circumstantial factors are considered in this report. Data were subjected to regional, weighted and segmentation analyses. Only the weighted sample analysis is presented in the 32 page summary report, but all three forms are described in the main report. Both reports are available on request from the Canada West Foundation.

The study discerned a range of motivations, perceptions, types, and categories of gambling in Canada. The latter include regulated gambling, informal betting, illegal gambling, and stock market speculation. Among various types of gambling, the report discusses VLT and internet gambling, and notes that gambling seems to have its greatest appeal to young adults (81% or 18-19 year olds, in contrast to 65% among those over 65 years). The reader interested in attitudes towards gambling will find useful the population/sample comparisons presented in the summary report, which compare and contrast demographic characteristics of age, gender, income, education, and employment. Overall, a modest pro-gambling bias is concluded; the majority of Canadians (57%) do not participate in gambling activities, however, although there is a perception among respondents that opportunities to participate are readily available. Public attitude toward First Nations-controlled gambling is ambivalent, and varies with age and region. The majority of respondents do not appear to support First Nations as the preferred choice to operate gaming in Canada, however.

For the reader interested in socio-cultural issues concerning gaming and gambling, this report provides a detailed and thoughtful picture of behaviours and attitudes across regions of the country. The report highlights the general ambivalence of Canadian attitudes toward gambling and regional variation in gambling behaviours and attitudes. Moreover, areas for further research are identified, such as trends among younger Canadians.

028 Baseline Market Research Ltd. (1996). Final report 1996 prevalence study on problem gambling in Nova Scotia. Halifax, NS: Nova Scotia Department of Health.

The gambling behavior of Nova Scotians is the focus of this study, which involved a province-wide telephone survey of 801 adults using the South Oaks Gambling Screen (SOGS-R). A copy of the

survey instrument is appended to the report. Survey results are compared to those from an earlier study (Omnifacts Research, 1993) of gambling prevalence in Nova Scotia. In 1993, 4.8% of the adult Nova Scotia population was classified as problem gamblers, while 5.5% were identified as problem gamblers in 1996.

In addition to prevalence, the 1996 report details differences in gambling behavior according to demographics, attitudes, and region of residence. A working profile of problem or pathological gamblers is presented, and the co-occurrence of gambling with substance abuse is examined.

029 Baseline Market Research Ltd. (1992). Final report prevalence study problem gambling. New Brunswick: Baseline Market Research Ltd. for Department of Finance, Province of NB.

The primary objectives of this study were to develop a profile of gaming activity in New Brunswick, and to determine the prevalence of problem gambling. A province-wide telephone survey of 800 New Brunswick adults was conducted using a questionnaire based on the South Oaks Gambling Screen (SOGS), but also including items measuring level of involvement in gambling activities.

Results indicated that 13% had never participated in gaming activities. Most frequent gaming activities among gamblers were 6/49 lottery, raffles, instant-win tickets, bingo, card games and video gaming. Regular gamblers are more likely to be under the age of 44, male and employed. Prevalence of problem gamblers is estimated at 4% of the total population, with 2% classified as probable pathological gamblers, according to scores on the SOGS. Problem gamblers in New Brunswick tend to be young males with no more than a high school education and an income under \$40,000, who began gambling at an early age through card games.

030 Becona, E. (1997). Pathological gambling in Spanish children and adolescents: An emerging problem. Psychological Reports, 81, 275-287.

A number of studies have shown a high prevalence of pathological gamblers among adults in Spain. In other countries, the prevalence of pathological gambling in children and adolescents has been higher than in adults. Described here are some of the results of the first studies conducted in Spain concerning the prevalence of pathological gambling in school children and adolescents, aged 11-16 years.

Results are presented from representative samples of school children from two cities located in different northern regions of Spain: 1,200 children from A Coruna in Galicia, and 2,185 children from Gijon in Asturias. Occasional gambling participation rates were 4.9% in the A Coruna sample and 4.7% in Gijon. Using a Spanish version of the DSM-IVJ questionnaire (copy provided), the prevalence of pathological slot machine gambling was found to be 2.2% in A Coruna and 1.6% in Gijon. A prevalence rate for pathological gambling of 2.4% was found in A Coruna when the South Oaks Gambling Screen Revised Adolescent (SOGS-RA) was used for all types of gambling. In both cities, more boys than girls were probable pathological gamblers, and a relationship was noted between pathological gambling and having parents who gambled excessively.

These results suggest there is an emerging gambling problem among children and adolescents in Spain, perhaps leading to an increased number of adult pathological gamblers.

031 Becona, E. (1993). The prevalence of pathological gambling in Galicia (Spain). Journal of Gambling Studies, 9(4), 353-369.

The results of the first study on the prevalence of pathological gambling in Spain are reported in this paper. The study used a standardized questionnaire based on the DSM-III diagnostic criteria with a representative multi-stage random sample of adult subjects (N= 1,615), stratified for age and sex, from the seven largest cities in the Galicia region of northwest Spain. The author summarizes the literature on prevalence estimates from Canada and the United States and provides a brief description of legalized gambling in Spain, which dates from 1977 and is an important element of the tourism industry in that country. The sampling strategy and error are described. The prevalence rate for pathological gambling was estimated at 1.7%, and for problem gambling, 1.6%, which is similar to other studies. Fewer than one percent were excessive social gamblers. From the overall sample, 60.2% were occasional gamblers, and 34.9% did not gamble at all. The results of chi-square analyses, but no confidence intervals for the estimates, are provided in the paper. Significant differences between cities in the prevalence of pathological gambling were noted. Patterns of symptoms of pathological gambling, including chasing, increasing the size or frequency of bets to achieve desired excitement, experiencing restlessness or irritability if unable to gamble, and repeated efforts to cut down or stop gambling were examined, as well as other less frequent symptoms. The authors provide detailed descriptions of demographic characteristics of pathological gamblers in this sample. No significant differences were noted between pathological gamblers and the remainder of the sample on a number of socio-demographic variables examined; significant differences were found in gender, family income, types and frequency of gambling, and alcohol and cigarette consumption. The study considered other types of gamblers also, including problem gamblers, excessive social gamblers, and ex-excessive gamblers. Group characteristics are described.

The authors suggest that this study supports the hypothesis that variance in symptoms indicates that gambling in general, and pathological gambling in particular, is influenced by social and cultural variables. Further, the authors propose that the results of this study indicate that early intervention strategies to reduce the risk of excessive, problem, or pathological gambling in future years should be considered. The authors discuss some of the myths surrounding pathological gambling and cultural patterns of help-seeking behaviours in light of the data provided by this study.

032 Black, D. W., & Moyer, T. (1998). Clinical features and psychiatric comorbidity of subjects with pathological gambling behavior. Psychiatric Services, 49(11), 1434-1439.

This study examines psychiatric comorbidity of pathological gambling behavior and associated socio-demographic characteristics of pathological gamblers. Representing one of the few studies to examine comorbidity in a sample not drawn from a treatment population, data were obtained from 30 subjects (23 men and seven women) who were recruited by advertisement and word-of-mouth. All scored higher than 5 points on the South Oaks Gambling Screen (SOGS), indicating problem gambling behaviors. Subjects completed structured and semistructured assessments, including the Diagnostic Interview Schedule for DSM-III-R disorders (DIS), the Personality Diagnostic Questionnaire, Fourth Revision (PDQ-IV), and the Minnesota Impulsive Disorders Interview.

The typical subject was a 44-year-old white married man with a mean income of \$34,250 who visited a casino once or more weekly. All 30 subjects reported gambling more money than they intended to. Sixty-seven percent reported gambling as a current problem, and 30% reported it as a past problem. Seventy percent wanted to stop gambling but did not feel they could. According to DIS results, 60% had a lifetime mood disorder, 64% a lifetime substance use disorder, and 40% a lifetime anxiety disorder. Based on the PDQ-IV, 87% had a personality disorder, the most common

being obsessive-compulsive, avoidant, schizotypal, and paranoid personality disorders. The sample also had a relatively high rate of antisocial personality disorder. Impulse control disorders were common, especially compulsive buying and compulsive sexual behavior.

The results suggest that individuals with pathological gambling suffer substantial psychiatric comorbidity, and they support continued inclusion of pathological gambling in the diagnostic category of impulse control disorders. The authors discuss the study's limitations, including small sample size and representativeness, and urge caution in generalizing the results.

033 Blaszczynski, A., Huynh, S., Dumlao, V. J., & Farrell, E. (1998). Problem gambling within a Chinese speaking community. *Journal of Gambling Studies*, 14(4), 359-380.

This study was conducted to obtain preliminary data on pathological gambling rates within a metropolitan Chinese community to determine if more costly extensive epidemiological surveys were justified. Results are based on 508 survey questionnaires distributed to parents through children attending a Chinese speaking school. Over a quarter of respondents were born overseas in either Mainland China or Hong Kong. Results indicated that gambling was not a popular activity with 60% of respondents stating that they never gambled. Of those who gambled, a third of respondents identified lotto as the preferred form. Using a Chinese translation version of the SOGS and a cut-off score of 10, a prevalence estimate of 2.9% for pathological gambling was found with males showing a higher rate (4.3%) than females (1.6%).

That almost one-fifth (16.7%) of respondents described a family member as having a problem with gambling suggests that the incidence of pathological gambling may be under-reported. Respondents reporting a prior history of gambling in their country of origin were more likely to be classified as probable pathological gamblers.

The authors suggest that although caution is required in interpreting results given a number of methodological limitations, the results of this survey suggest that pathological gambling may be a serious issue for the Australian Chinese community and further research into problem gambling in this community should be undertaken.

034 Bondolfi, G., Osiek, C., & Ferrero, F. (2000). Short communication: Prevalence estimates of pathological gambling in Switzerland. *Acta Psychiatrica Scandinavica*, 101(6), 473-475.

This study, which involved telephone interviews with 2526 randomly selected individuals using the South Oaks Gambling Screen (SOGS) and CAGE screen for alcohol abuse, was conducted to evaluate the prevalence of pathological gambling and the link between pathological gambling and alcohol abuse in the Swiss adult population. The sample was proportionally stratified according to age, sex, and occupational status. Prevalence rates for problem and potential pathological gambling were estimated to be slightly higher than rates reported for other western countries, at 0.8% and 2.2%, respectively. Further, a clear association between pathological gambling and alcohol abuse was indicated.

The authors provide background information about the two screening instruments used in this study. Details of chi-square analyses that identified significant differences between the total sample and respondents classified as potential and problem pathological gamblers are provided for socio-demographic variables (age, sex, marital status, occupation, income, age of onset of gambling) and alcohol abuse. In particular and as in other country data, males, singles, people under age 29, and those who began this activity in adolescence comprised a significant majority of probable and potential pathological gamblers.

Socio-cultural researchers will find particularly useful the discussion of implications for research, treatment, prevention, and criminal justice.

- 035 Boreham, P., Dickerson, M., & Harley, B. (1996). What are the social costs of gambling? The case of the Queensland machine gaming industry. Australian Journal of Social Issues, 31(4), 425-442.**

This paper presents results from a telephone survey of 500 adults conducted in Brisbane, Australia, which sought to assess the characteristics of gaming machine players and evaluate the social and economic impact of the introduction of machine gaming to Queensland hotels and clubs. The survey led to a number of noteworthy findings, many of which challenge conventional stereotypes concerning the characteristics of players and the consequences of their playing.

Firstly, just over 40% of the people surveyed had played a machine in the previous twelve months. Secondly, men, the young and those in employment are disproportionately likely to be players. Thirdly, playing is spread evenly across different occupations and levels of educational achievement. Fourthly, most players appear not to play very often or spend very large amounts of money. Finally, while there is evidence that money is being diverted from necessities to machine gaming, there is virtually no evidence of an association between machine playing and economic hardship.

- 036 Browne, B. A., & Brown, D. J. (1993). Using students as subjects in research of State lottery gambling. Psychological Reports, 72, 1295-1298.**

This study examined the generalizability of survey data obtained from students in the specific area of lottery gambling. Surveys on attitudes toward gambling and gambling practices were administered to a sample of 288 marketing students at a state university. Comparison data were gathered by telephone survey from a random sample of 1009 respondents from the general population.

Overall, it was found that students' attitudes, game preferences, and reasons for play were similar to those of the general population. Respondents in both the student and general samples who were lottery participants held more favorable beliefs about the lottery than non-participants. Preference rankings for types of lottery games were similar in the student and general samples. Student and general samples differed in that significantly more students agreed that the lottery contributes to state revenues, suggesting that students may have greater exposure to media publicity in this regard. Given the overall similarities between the student and general samples, it is suggested that samples of students might be sufficiently representative of the general population to provide valid information.

- 037 Buchta, R. M. (1995). Gambling among adolescents. Clinical Pediatrics, 34(7), 346-348.**

This study reports the incidence of gambling by adolescent patients in a middle-class, and upper-middle-class private medical practice setting. Questionnaires regarding gambling activities, behaviors and attitudes were completed by 200 individuals aged 12-13 who came to a medical clinic for routine examinations, minor illnesses, or trauma. The mean age of gamblers was 15.12 and of nongamblers 14.36, a difference that was statistically significant ($p < .01$). A significant ($p < .001$) gender difference was also found, with 83% of males and 61% of females reporting gambling. Forty-four percent of those who gambled, but only 26% of the nongamblers, reported having at least one parent who gambled, a difference that also reached statistical significance ($p < .02$). Preferred activities were sport betting (60.6%), cards (42.3%), lotteries (40.1%), horse

(39.4%) and casino gambling (16.5%). Most respondents reported winning more often than losing, and 41% believed gambling was appropriate behavior for teenagers.

The author concludes that the study results point to a high incidence of gambling among teenagers, and calls for further research into the potential link between gambling and other risk-taking or addictive behaviors.

038 Ciarrocchi, J. W. (1993). Brief Report: Rates of pathological gambling in publicly funded outpatient substance abuse treatment. Journal of Gambling Studies, 9(3), 289-293.

This study was carried out to determine rates of problem and pathological among substance abusers seeking treatment in a publicly funded outpatient substance abuse treatment program. The South Oaks Gambling Screen (SOGS) was administered to 467 consecutive admissions at three sites. Of the total sample, 6.2% scored as problem gamblers and 4.5% scored as probable pathological gamblers. These rates are two and one-half times those found in a recent state survey using the SOGS, supporting previous research indicating considerably higher pathological gambling rates among substance abusers than in the general population. Chi-square tests indicated non-significant relationships between problem gambling and both race and gender. However, these results should be viewed with caution because, as the author notes, complete statistics on gender and race are lacking.

It is suggested that future research should examine the relationship between co-addiction and treatment outcome, and that screening for pathological gambling should be carried out routinely in substance abuse treatment settings.

039 Citizen Advocacy Society of Lethbridge. (1995). "Seniors and gambling: How big is the problem". Lethbridge, AB: AADAC.

This study was carried out to determine if there is a problem with gambling among senior citizens in Lethbridge, Alberta, and the extent of the problem if one exists. This information was sought in order to address local needs for education, programming and advocacy. A total of 129 Lethbridge citizens over the age of 65 responded to a survey that incorporated the South Oaks Gambling Screen (SOGS). A copy of the survey instrument is appended to the report. A combination of telephone, drop-off and mail surveys was supplemented by a personal interview with a group of three individuals. Results indicated that problem gambling exists among approximately 10.87% of the senior citizen population of Lethbridge.

040 Cool Aid Society of Grande Prairie. (1995). Adolescent gambling study final report. Grande Prairie, AB: AADAC.

The goal of this study was to determine the level and extent of gambling behaviors among junior and senior high school students in the Grande Prairie and surrounding areas. Questionnaires based on the adolescent version of the South Oaks Gambling Screen (SOGS) were administered to 895 students in Grades 7-12 classrooms. Results presented include: prevalence; gender comparisons; grade level comparisons; parents' gambling; gambling expenditures, frequencies, and preferred activities; and problems associated with gambling. Among male respondents, 6.6% were estimated to be problem gamblers, while 15.11% were at risk. Among females, these rates are 2.12% and 6.35%, respectively. The report concludes with recommendations regarding further research needed to support the development of education and prevention programs.

- 041 Cosby, A. G., May, D. C., Frese, W., & Dunaway, R. G. (1996). Legalization of crimes against the moral order: Results from the 1995 United States survey of gaming and gambling. Deviant Behavior: An Interdisciplinary Journal, 17, 369-389.**

Based on survey data from 1,514 American adults, this study provides national estimates of support for the legalization of selected substances, sexual activities, and gambling behavior perceived by some as potentially threatening to the moral order.

Alcohol use, gambling, and smoking received majority support for legalization, whereas substantial but non-majority support was found for gentlemen's clubs, prostitution, and marijuana use. There was little support for legalization of cocaine. Support for the legalization of the various morally offensive activities was found generally to vary by five factors: gender (rates are higher in males than females); race (rates are higher in whites than non-whites); religion (rates are higher in Catholics than Protestants); age (rates are higher in young and middle-aged adults than in the elderly); and region (rates are higher in the West, Northeast, and Midwest than in the South).

Although too general for specific policy implications because it lacks in-depth information about the various moral offences, this work can be suggestive for policy debate in providing a map of preferences by socio-demographic and regional variables that Americans hold for a range of behaviors subject to legalization or regulation.

- 042 Cuadrado, M. (1999). A comparison of Hispanic and Anglo calls to a gambling help hotline. Journal of Gambling Studies, 15(1), 71-81.**

Although Hispanics constitute a large and growing minority in the United States, little information exists on their gambling behavior. To better understand gambling among this minority group, data are presented on 209 Hispanic and 5311 Anglo problem gamblers who called the Florida Council on Compulsive Gambling Hotline for help between 1992 and 1998. Although Hispanics represent 12% of Florida's population, only 3.8% of calls concerned persons identifying themselves as Hispanic. Differences were also found in the likelihood of Hispanics calling about their own problems, having gone for previous help, and types of gambling activities. Similarities were found between the two groups regarding age, marital status, and the three most cited problems caused by gambling: problems with family, inability to pay bills and going into debt. Anglos were significantly more likely to engage in illegal activities for gambling money and to encounter job problems.

Although the samples studied here are self-selected, the results suggest that differences in gambling behavior exist between Anglos and Hispanics. The authors discuss these differences in terms of differences in cultural norms and beliefs between the two groups. In light of these cultural differences, they suggest caution in the use of Anglo based prevention and treatment problems with Hispanic populations and point to the need for culturally sensitive approaches.

- 043 Cunningham-Williams, R. M., Cottler, L. B., Compton III, W. M., & Spitznagel, E. L. (1998). Taking chances: Problem gamblers and mental health disorders--Results from the St. Louis Epidemiologic catchment area study. American Journal of Public Health, 88(7), 1093-1096.**

The purpose of this study was to determine prevalence estimates of problem and pathological gambling among St. Louisians and to explore relationships of gambling to other psychiatric and substance use disorders. Data used are from a 1981 household survey that used the Diagnostic Interview Schedule to collect epidemiological information on problem gambling and other disorders from 3,004 adults in St. Louis, Missouri. While 46% of those surveyed gambled

recreationally, the lifetime prevalence of pathological gambling was estimated at .9%. Problem gamblers (those reporting at least one gambling-related problem) were 9.2% of the sample and were predominantly White (69%), male (78.2%) and younger than nongamblers. They were at increased risk for several psychiatric diagnoses, especially antisocial personality disorder, alcoholism, and tobacco dependence.

Although the data set did not allow for adequate hypothesis testing, these results serve to alert clinicians as to the importance of screening for gambling problems among persons with antisocial personality disorder, major depression, phobias, alcoholism, and nicotine dependence.

044 Daghestani, A.N., Elenz, E., & Crayton, J.W. (1996). Pathological gambling in hospitalized substance abusing veterans. Journal of Clinical Psychiatry, 57(8), 360-363.

This study examines prevalence of pathological gambling in a hospitalized population of substance abuse patients, and explores psychosocial and diagnostic variables that may be associated with the co-occurrence of pathological gambling and substance abuse. The South Oaks Gambling Screen (SOGS) was administered to 276 patients, and 134 of these subjects were interviewed using a semistructured comprehensive psychiatric questionnaire.

The rate of comorbid pathological gambling in the sample was 33%. Of interest is the fact that patients' gambling problems had been largely unrecognized by the patients, and generally not emphasized by the staff. Substance abusers with pathological gambling problems were then compared to a matched group of substance abusers without gambling problems to explore variables that might predispose individuals to develop pathological gambling. A high rate of comorbid substance abuse and pathological gambling was associated with a positive history of childhood experiences of gambling in the family group and with larger family size. In addition, current alcohol consumption was significantly higher in the pathological gambling group, and drug use tended to have begun at an earlier age than in the control group.

Given that comorbidity of substance abuse and pathological gambling is common among substance abuse patients in a VA hospital, it is recommended that substance abuse treatment programs identify patients with pathological gambling and include treatment interventions that address both problems.

045 Derevensky, J. L., Gupta, R., & Cioppa, G. D. (1996). A developmental perspective of gambling behavior in children and adolescents. Journal of Gambling Studies, 12(1), 49-66.

Although it has been determined that gambling is a popular activity amongst the young, there is little research on developmental differences in children's gambling behavior. This study examines developmental differences in children's blackjack gambling behavior. One hundred and four students (51 males, 53 females) from grades 4, 6, and 8 in Montreal schools completed a questionnaire examining their general gambling behavior. In addition, each subject individually played a computerized blackjack game and the following data were recorded: gross wagers, gross winnings, end balance, percentage of accuracy, and percentage of wins.

Findings revealed that children as young as 9 years of age are actively involved in some form of gambling activity. Few developmental differences were found in prevalence and frequency of gambling behavior and performance on the blackjack task, although increases with age were seen in amount of money wagered and risk-taking strategies. Males were found to wager greater amounts of money and have larger gross winnings than females on the blackjack task. Furthermore, males were more likely to view gambling as involving large amounts of skill and

luck, thus suggesting an illusion of control for gambling activities. The results are discussed from a cognitive developmental perspective.

046 Devlin, A. S., & Peppard, Jr. D. M. (1996). Casino use by college students. Psychological Reports, 78, 899-906.

This study examines gambling behavior among financially well-off students attending a highly selective four-year liberal arts college Connecticut, and compares it to previous research in terms of patterns of pathological gambling, gender differences, and selection of gambling activities. Students' gambling behavior at the Foxwoods Resort Casino in Mashantucket, Connecticut was assessed using the South Oaks Gambling Screen (SOGS).

Of 730 randomly sampled students, 238 (73 males and 164 females) returned usable questionnaires, a return rate of 32.5%. Of the total, 72.7% indicated they had gambled at least once in their lives, the differences between males and females falling short of significance. Only 13.8% of the students indicated having visited Foxwoods, and 11% of these students reported having gambled. Rates of problem gambling were relatively low (2.5%) and few underage students (1.9%) reported using Foxwoods. As in other studies of casino gambling by students, slot machines and blackjack were the most frequent activities. Although students in this study have higher incomes than those in previous studies, gambling expenditures were lower.

On the whole, the results present a somewhat different picture of gambling involvement by college students than has been previously reported. The authors caution, however, that generalization of their findings is limited by two factors: the low survey return rate and the overrepresentation of women in the sample.

047 Dickerson, M., & Hinchy, J. (1988). The prevalence of excessive and pathological gambling in Australia. Journal of Gambling Behavior, 4(3), 135-151.

Prevalence rates for excessive and pathological gambling in Australia were estimated, based on the conceptual framework of "excess" rather than illness used in this study of poker machine players and off-course bettors in the Australian Capital Territory (ACT). The paper focuses on empirically derived prevalence estimates of excessive gambling derived from a random street-based survey of ACT residents (N = 511), a similar survey in the city of Sydney, and two surveys conducted to establish characteristics of regular gamblers.

Each of the methodologies used in these two surveys is described in some detail. The authors extrapolate from the rates of excessive gamblers to pathological gambling. Previous studies of prevalence rates are summarized and critiqued according to various assumptions and methodologies employed. The present study duplicates a two-stage methodology used previously in a major epidemiological study, but the authors confess that the figures reported derive from "unplanned and fortuitous coinciding" of their gambling surveys. Assumptions underlying the analytical design and questions of validity are discussed. The results are discussed in comparison with the methods used in other studies; for example, forms of gambling (i.e., continuous versus non-continuous) and frequency per week of gambling activity were ignored in several key American studies and may result, suggest these authors, in an increase in false positives in those samples.

The authors admit that the results of this study provide no secure estimate of prevalence rates of excessive or pathological gambling. They provide a lively and provocative discussion of methods and operational definitions, however, and point out several areas that need to be specified in future research including current level of involvement in gambling and preferred forms. The authors

suggest prevalence studies need to move away from classificatory approaches to fundamental description. Moreover, to accomplish this objective, the authors advocate that future prevalence studies use a two-stage methodology, including a general population screen for current involvement in gambling and in-depth random interviews with subsets of regular gamblers and their spouses or significant others to address issues of denial and social costs.

- 048 Dickerson, M. G., Baron, E., Hong, S. M., & Cottrell, D. (1996). Estimating the extent and degree of gambling related problems in the Australian population: A national survey. Journal of Gambling Studies, 12(2), 161-178.**

This article describes the results of a stratified random household (“doorknock”) survey in two stages conducted in four state capitals in Australia. The first stage of the survey was a brief structured interview containing classification information and demographics administered to a representative sample. A second stage sub-sample comprising regular (at least once weekly) gamblers were screened with the South Oaks Gambling Screen (SOGS) and completed a series of psychometric tests. A conservative estimate of the rate of problem gambling in the Australian population is provided (1.16% +/- 0.34%). Apart from issues of sampling, three discussions concerning methodology will be particularly interesting to other researchers. The first discussion addresses methodological concerns related to the choice of SOGS as a psychometric instrument or method of detecting pathological gambling; for international comparisons, SOGS is apparently the only validated measure available at present. The second discussion of interest concerns assumptions that all forms of gambling are similar in the extent to which players may experience gambling-related problems. A dichotomous scheme is supported by clinical and survey data, which suggests classifying forms of gambling as continuous (e.g., slot machines, casino games with repeated stake cycles) and non-continuous (e.g., lotteries). The third discussion notes the limitations of self-report in “doorknock” surveys and different refusal rates following initial screening for regular players on continuous as opposed to non-continuous forms of gambling.

Despite the methodological challenges encountered, the data are treated conservatively and provide a reasonably representative and reliable description of gambling in Australia by gender, level of involvement in gambling, and prevalence of problem gambling. Unfortunately, few details of gambling activity by demographic variables are provided. The authors compare their results with a similar survey in New Zealand, and suggest that women will be differentially impacted by further introduction of gaming machines.

Further research is suggested for comparison with the New Zealand study, but the authors note that more sensitive and sophisticated approaches than “doorknock” surveys will be required to explore associations between problem gambling, Aboriginality, and excessive alcohol intake suggested by the New Zealand data. Finally, the authors suggest that modifications to the SOGS criteria and caution in using an epidemiological case detection approach are warranted in prevalence studies. In particular, the authors warn against using the original cut-off scores for SOGS in general population surveys.

- 049 Dickinson, H. D. (1994). Report on the social impacts of gaming and the impact of gaming expansion on charitable beneficiaries. Saskatchewan: Saskatchewan Gaming Commission.**

The Advisory Committee was established in April 1993 to review and make recommendations for an initial survey of gambling participation and the prevalence of problem gambling in the province of Saskatchewan; to make recommendations regarding future surveys to monitor potential social impacts and impacts on charitable gaming; to recommend methods to prevent gambling problems through education and information; to recommend methods to treat problem gamblers and their

families; and to recommend methods to ensure that gaming does not exploit people with gambling problems.

The report summarizes the committee's activities, including the results of a province-wide telephone survey of gambling behavior using a regionally stratified, random sample of 1,000 and a questionnaire that incorporated the South Oaks Gambling Screen (SOGS). Included as appendices are the survey questionnaire and the final report to the Committee of R. Volberg, who conducted the survey. Included in Volberg's report are the survey results, as well as a discussion of survey methodological issues and limitations. Overall, a lifetime prevalence rate of 4% was found for problem and probable pathological gambling, with 2.8% of respondents scoring as lifetime problem gamblers and 1.2% scoring as lifetime probable pathological gamblers. Prevalence of problem gambling is reported by type of gaming, age, socio-economic status, gambling participation, gambling expenditures, and other relevant factors, and these results are compared with those from other jurisdictions.

The report also addresses the Committee's first report and the government's response; describes current gaming in the province and its positive and negative impacts; and describes the expansion of charitable gaming. Finally, 10 recommendations relevant to the Committee's mandates are offered.

050 Doiron, J., & Nicki, R. (1999). The prevalence of problem gambling in Prince Edward Island. New Brunswick: University of New Brunswick.

The two major purposes of this study were to assess the general level of gambling in Prince Edward Island, and to determine the prevalence of problem gambling. A research instrument incorporating the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI) was administered via telephone interviews to a sample of 809 Prince Edward Island adults. Eighty-three percent of the survey sample had engaged in at least one gambling activity in the previous 12 months. Gamblers were significantly more likely than non-gamblers to be male with an annual household income exceeding \$30,000. The total problem/pathological gambling rate was 3.1%. Problem/pathological gamblers were significantly more likely than non-problem gamblers to be male, under age 30, single, and unemployed. The highest rate of problem/pathological gambling was found among video lottery terminals participants (13.6%). Other significant findings include the identification of a number of cognitive and mental health correlates of problem/pathological gambling, and the definition and description of an "at risk" group of gamblers.

Recommendations are offered for treatment, education, and prevention programs, as well as for ongoing research and evaluation. The appendix includes a copy of the interview questionnaire.

051 Doupe, M. (1999). Gambling and seniors: The final report on the survey of key informants. Winnipeg, MB: Addictions Foundation of Manitoba.

The purpose of this study was to assess community professionals' perceptions on: 1) the nature of senior gambling and the problems associated with this activity, and 2) how to effectively offer gambling services to seniors. Twenty-five community professionals from the Winnipeg Region completed the Key Informants Survey in person or by telephone. Results indicated that problem gambling in seniors might result in financial, family/relationship, and/or health related issues. Further, it was suggested that seniors hesitate to use the Addictions Foundation of Manitoba's (AFM) services due to access barriers, stigma of the AFM, denial, and embarrassment. Respondents recommended that the AFM needs to provide educational seminars, increase advertisement, and

provide outreach rehabilitation services targeted specifically towards the senior population. (Abstract from AFM Web page at <http://www.afm.mb.ca>; item not reviewed)

052 Dowson, R. (1995). Ashmont Secondary Community School. Ashmont, AB: R. Dowson Consulting.

The goal of this investigation was to assess the level of adolescent problem gambling among Ashmont Secondary Community School students, and to compare the results with similar data from an unidentified control school. A questionnaire based on the South Oaks Gambling Screen modified for adolescents (SOGS-RA) was administered to 142 students in Grades 7-9 at Ashmont Secondary Community School and to 108 students in Grades 7 and 8 at the control school. The questionnaire results were supplemented with results from face-to-face interviews.

Results are described and compared for the two schools in terms of prevalence, absentee rates, problem gambling, parental gambling behavior, gender differences, and gambling activities (especially video lottery terminal use). Problem gamblers at Ashmont and the control school were estimated at 19.7% and 6.5%, respectively. The report concludes with a set of recommendations and a list of education materials.

053 Duvarci, I., Varan, A., Coskunol, H., & Ersoy, M. A. (1997). DSM-IV and the South Oaks gambling screen: Diagnosing and assessing pathological gambling in Turkey. Journal of Gambling Studies, 13(3), 193-206.

The effectiveness of the DSM-IV diagnostic criteria and the South Oaks Gambling Screen (SOGS) in identifying Turkish pathological gamblers was examined in this study. Fifty-nine participants were diagnosed as either pathological (35 subjects) or non-pathological (24 subjects) gamblers using DSM-IV criteria and all were given the Turkish version of the SOGS. Four of the ten DSM-IV criteria were found to be problematic in the diagnosis of Turkish pathological gamblers. The data concerning reliability and validity of the Turkish version of the SOGS suggested that the SOGS can be used as a reliable and valid instrument in identifying Turkish pathological gamblers. Most (16 out of 20) of the items of the SOGS appear to work well in discriminating pathological from non-pathological gamblers. In the case of the two DSM-IV criteria and the four SOGS items that failed to discriminate, cultural factors seemed to be responsible for the failure.

Although the sample size of this study allows for conclusions that the investigators regard as, at best, suggestive, caution is recommended in employing DSM-IV diagnostic criteria in cultures outside the US, especially in the case of disorders that are more prone to cultural influences, such as pathological gambling.

054 Eckstrom, C. (1996). Adolescent gambling study: Final report. Edmonton, AB: AADAC.

The gambling behaviours of 300 youth in the City of Grande Prairie and surrounding areas were surveyed in this study of gambling, smoking, and drinking behaviours, attitudes and opinions among 13 to 18 year old adolescents. The survey involved both qualitative (n = 180) and quantitative (n = 300) components. The questionnaire, comprising questions developed by the Steering Committee and taken from the 1995 Nechi Adolescent Questionnaire and the 1992 Gamblers Self-Report Inventory, did not screen for problem or pathological gambling. The qualitative component comprised 20 focus groups. The primary purpose of the study was to obtain information about behaviours, attitudes, and prevalence of gambling among adolescents, their parents, and their friends. Additionally, the study investigated smoking and drinking behaviours, investigated the accessibility of gambling activities for adolescents, and possible gambling prevention intervention strategies. Of the 300 adolescents who completed the questionnaire, 154

(51%) were males and 146 (49%) females. Of the 180 who participated in the focus groups, 95 (53%) were male and 85 (47%) female. Data collection took place in the schools.

The results of the questionnaire and focus groups are reported separately. Analysis of the questionnaire data included chi-square and t-test for independent variables to evaluate the statistical significance of group differences (.05 level of significance). The responses to each of the questionnaire items are reported, with percent values for variables. Overall, 75% of respondents gambled, with males more likely to gamble than females. Average age of first beginning to gamble was reported as 11.50 for males and 11.80 for females, with 31% reporting gambling before age 10. Other information provided includes favourite gambling activities, parental gambling, smoking, and alcohol consumption. Focus groups discussed access to gambling and intervention strategies. The report includes general recommendations, a copy of the questionnaire, excerpts from the focus groups, and responses to select questions.

The study is limited by the nature of the sample and absence of screening for problem or pathological gambling. Moreover, as noted also by the author, the questionnaire is idiosyncratic and was not tested for either reliability or validity.

055 Ellis, D. (1984). Video arcades, youth, and trouble. Youth & Society, 16(1), 47-65.

The popularity of video arcades has generated concern over the possibility that arcade involvement causes deviant behavior or delinquency in children. Questionnaire, interview, and participant-observation data from 258 children attending grades 6, 7, and 8 in two schools near Toronto are used to explore the validity of this assertion.

It was found that video arcades are associated with deviant behavior among relatively few children, and that these children also report experiencing relatively weak parental social control and are far more likely to visit video arcades after Ontario's 10:00 PM curfew for juveniles. It was also found that children who visit video arcades spend relatively little time (less than two hours on average per week) and money (about \$2 per week) there. Only 9.3% of respondents spent more time in video arcades than on other activities. Some respondents reported having been invited to participate in deviant activities while in arcades, and 23.3% reported violating curfew laws to visit arcades at least once. Video arcade involvement is positively associated with academic performance.

It is concluded that only weak support is provided for the association of video arcades with deviant behavior, and that video arcades are not a major cause of deviant behavior. Rather, video arcade involvement tends to increase the likelihood of deviant behavior only when such involvement is itself associated with weak parental control. Recommendations are offered for resolving some of the issues surrounding arcades.

056 Faveri, A., & Gainer, L. (1996). A report on gambling activities and related issues among clients of multicultural service providers in Ontario. ON: Addiction Research Foundation, University Settlement Recreation Centre, Chinese Family Life Services of Metro Toronto.

The intent of this study is to gain a better understanding of the prevalence of gambling and gambling-related problems among various ethnocultural groups (especially Chinese) and to determine whether gambling is a concern for multicultural service providers. Survey questionnaires were distributed to multicultural social service agencies in Ontario and completed by 44 service providers and 155 clients. Results from the service provider survey provide information on the prevalence, associated problems, and impacts (personal, social, financial, and family) of their clients' gambling, as well as information on current and needed treatment services.

In addition to demographic information, results from the client survey relate to gambling activities, gambling expenditures, reasons for gambling, problems caused by gambling, and help-seeking behavior. Comparisons are made between the results for clients and service providers, and between males and females.

Overall, the study results point to a need for culturally and linguistically appropriate gambling treatment services.

057 Ferris, J., & Stirpe, T. (1995). Gambling in Ontario: A report from a general population survey on gambling-related problems and opinions. Ontario: Addiction Research Foundation.

The purpose of this investigation is to provide an overview of the current situation in Ontario with regard to gambling prevalence and associated problems, as well as opinions and attitudes of Ontario adults on gambling issues. Based on a telephone survey of 1,030 Ontario adults, gambling problems were assessed using three measures: the South Oaks Gambling Screen (SOGS), a measure derived from the *Diagnostic and Statistical Manual IV* of the American Psychiatric Association (1994), and a life-areas problem measure adapted previous alcohol and drug survey instruments. Results from the survey provide information on participation in gambling activities (by age, gender, marital status, income, language, educational level, and family history of gambling problems); public opinion on gambling-related policy and other gambling issues; reasons for not gambling or discontinuing gambling; and views of gambling as a social problem. According to SOGS results, 19% of Ontarians are estimated to be problem or potential pathological gamblers, while 1% are likely pathological gamblers.

The study is important in providing Ontario-specific data to assist clinicians dealing with problem gamblers and to inform policy development and planning.

058 Fisher, S. (1999). A prevalence study of gambling and problem gambling in British adolescents. Addictions Research, 7(6), 509-538.

This study is the first national prevalence study of gambling and problem gambling among British youth ages 12 to 15 years. Although all forms of commercial and non-commercial gambling played by young people were considered, the study focused on fruit machines and lottery scratchcards. A representative stratified sample of ten thousand students from classes in 114 schools (excluding special and private schools) were surveyed in England and Wales to test the hypothesis, and related hypotheses (e.g., higher prevalence of problem gambling in specific locations such as seashores due to the popularity of arcades in these places), that the National Lottery scratchcard tapped into an existing mature market for adolescent fruit machine gambling. The study also enquires into behaviours and experiences correlated to problem gambling and socio-demographic factors involved. A revised, youth-adapted version of the DSM-IV gambling screen (DSM-IV-MR-J) was used which incorporates response items suggested by previous research on youth gambling and includes nine dimensions of problem gambling. The full screen is provided in an appendix to the article. The results include lifetime and past week expenditures (legal and illegal), venues of sales and play, problem gambling compared to non-problem gambling (including prevalence, characteristics, frequency of play, and expenditures), and social costs associated with gambling among youth. The study explores aspects of parental gambling and attitudes associated with youth gambling also. Predictors (risk factors) of problem gambling were investigated through stepwise logistic regression analysis. All statistics are reported in full.

For the reader desiring an introduction to themes in youth gambling research literature, this article provides a brief summary: the popularity of gambling among young people, the prevalence of gambling problems among youth, and indicators and consequences of youth gambling. The

current study situates youth gambling in the “mish-mash” of British policy and legislation concerning gambling by youth. The author provides a thoughtful discussion of “problem gambling”, presenting her view that problem gambling is the term of choice for population based studies, and suggesting that a diagnosis of pathological gambling is inappropriate outside of clinical settings.

This research situates youth problem gambling carefully within wider lifestyle phenomena, but suggests that its importance has been underestimated. Further, the significant role of family and life skills development, and societal responsibility for enforcement of policies and legislation concerning youth gambling, are discussed.

059 Fisher, S. (1993). Gambling and pathological gambling in adolescents. Journal of Gambling Studies, 9(3), 277-288.

Prevalence of adolescent gambling, problem gambling and pathological gambling on fruit machines is the focus of this study. Also examined are some of the behaviors, experiences, and socio-demographic factors associated with gambling.

Questionnaires incorporating the DSM-IV-J were administered to 467 secondary school children aged 11 to 16 years in a small seaside resort town in southwestern England, where fruit machines are widely and legally available to children in both arcades and other public venues. It was found that 99% of children had gambled for money in the year preceding the survey, and fruit machines were the most popular gambling activity. Sixty-two percent of children gambled on fruit machines, 17.3% playing them at least once a week. Although significant gender differences in weekly gambling were found for some activities, especially games of skill and cards, gender differences in weekly fruit machine gambling were not statistically significant. Declining social class ranking was significantly associated with increased fruit machine gambling. According to results from the DSM-IV-J, 5.7% of children were pathological gamblers. Pathological fruit machine gambling was correlated significantly with gambling for money on other games, cigarette and alcohol use, video playing, parental gambling, playing alone and an early start (8 years or younger). It was not correlated with age, gender or religion, and only weakly with parental occupation.

The implications of the findings for future research and social policy are discussed. In particular, the author urges U.K. policymakers to recognize the implications for pathological gambling in adolescence and adulthood of the widespread fruit machine gambling in children.

060 Fisher, S. (1992). Measuring pathological gambling in children: The case of fruit machines in the U.K. Journal of Gambling Studies, 8(3), 263-285.

This study was designed to develop and test a measure of pathological gambling in children, and to use this measure to assess fruit machine gambling among children in the U.K. DSM-IV criteria for pathological gambling were adapted for use with children, and 12 questions were formulated based on these DSM-IV-J criteria. (Both the DSM-IV-J criteria and questions are appended to the article). Questionnaires including the DSM-IV-J index, as well as questions on gambling behavior commonly associated with dependency, were administered to a sample of 460 school children aged 11 to 16 years.

Sixty-two percent of children reported gambling on fruit machines, and of these, 9% scored as probable pathological gamblers. The remaining children were defined as social gamblers and used as a control group. Those children who were defined as “probable pathological” gamblers by the DSM-IV-J index were significantly more likely to be involved in behaviors associated with both dependency and delinquency, than were children in the control group. Statistically significant

differences between the probable pathological and control groups were found in frequency of play, amount of time spent in an arcade, gambling expenditures, truancy, borrowing/lending habits, use of school dinner money to gamble, selling possessions to fund gambling, stealing, and being worried about playing too much.

It is concluded that the DSM-IV-J appears to be an effective discriminator of probable pathological gambling in children and thus constitutes a major advance in this area. However, the author cautions that this version of DSM-IV-J is not definitive. Several problems with DSM-IV-J criteria emerging from the study are discussed, and it is suggested that further development and field testing of DSM-IV-J criteria and associated test questions are would be desirable.

061 Frank, M. L. (1990). Underage gambling in Atlantic City casinos. Psychological Reports, 67, 907-912.

A three-year survey of 636 college students was conducted to ascertain the frequency and prevalence of student gambling at nearby casinos in Atlantic City, New Jersey. The survey form contained questions concerning gambling behavior, employment, demographic information, and gambling preferences, as well as the South Oaks Gambling Screen (SOGS). Results from the SOGS indicated that 6% of students were at risk with respect to their gambling. Of the students who gambled, 66% were underage, indicating that gambling by underage college students is common, and that age control at casino entrances is quite poor. Favorite forms of gambling were slot machines, blackjack, and roulette. Significant associations were found between casino gambling and other gambling or risk-taking activities, i.e., lottery participation, sports betting, betting on horses at racetracks, and speeding tickets.

The association of casino gambling with speeding tickets was interpreted as indication of a fundamental propensity towards risk-taking. An additional finding of differential memory for wins and losses suggests the need for an information processing analysis of memory for gambling outcomes.

062 Govoni, R., Frisch, G. R., Rupcich, N., & Getty, H. (1998). First year impacts of casino gambling in a community. Journal of Gambling Studies, 14(4), 347-358.

This article presents first year results of a multi-year project to measure the impact of the opening of Casino Windsor on gambling behavior in Windsor, Ontario, Canada. A random telephone survey of gambling behavior was conducted with 2,682 adult residents of metropolitan Windsor prior to the opening of Casino Windsor, and was repeated with 2,581 residents one year later. The survey incorporated the South Oaks Gambling Screen (SOGS) and collected data on demographics, attitudes towards gambling, and awareness of treatment options for problem or pathological gambling.

Results indicated that gambling had a moderately high penetration in the Windsor area, with between 60% and 65% of the samples having gambled in the past year. Most gamblers used the casino as an occasional form of entertainment, however, with only 1.1% of the population visiting the casino on a weekly basis. There were no gender differences in problem and pathological gambling before or after the opening of the casino, nor did frequency of visits to the casino vary significantly by gender. Likewise, no statistically significant changes were found in the rates of problem and pathological gambling among men, women, or the general population one year following the opening of the casino. The authors caution, however, that this could change and it is possible that there is a lag or incubation period in the development of gambling problems. Although there was some evidence of higher-spending gamblers within the post-casino sample, no

statistically significant differences were found between pre- and post-casino per capita gambling expenditures.

According to the authors, additional follow-up studies are essential to monitor and assess the long-term impact of Casino Windsor on the local population. Further research is also needed to inform public policy on gambling, and to design effective prevention and treatment programs for individuals with gambling problems.

063 Govoni, R., Rupcich, N., & Frisch, G. R. (1996). Gambling behavior of adolescent gamblers. Journal of Gambling Studies, 12(3), 305-317.

This study was undertaken to provide baseline information on the prevalence of problem gambling, characteristics of gamblers, gender differences, risk factors, and problem gambling behaviors of adolescents in Windsor, Ontario prior to the opening of the Windsor casino. An adolescent version of the South Oaks Gambling Screen was administered to 965 Windsor high school students, aged 14 to 19 years.

A high rate of gambling was found, with 96.1% of respondents having gambled in their lifetime, and 90.2% in the past year. A wide range of gambling activities were pursued, with 50% or more of the sample playing cards, games of skill, scratch tabs, lottery, pull tabs, and betting with friends. A substantial proportion of respondents engaged in underage gambling. Problem gambling was defined as a score of five or more on the SOGS-RA screen utilizing a scoring method that parallels the adult SOGS scoring method. Problem gambling levels were estimated to be 8.1%±1.8% of the adolescent sample, with an additional 9.4%±1.9% of students at risk. Statistically significant positive associations were found between problem gambling and both number of different gambling activities and amount of money gambled. As well, problem and at-risk gambling were significantly higher among males than females. No significant difference with age was found. Adolescents who reported that their parents gambled excessively had almost twice the rate of problem and at risk gambling as those whose parents did not gamble excessively.

According to the authors, the study results point to the need for education and prevention programs in the school system, as well as a need for further longitudinal studies to determine the degree to which adolescent gambling problems are carried into adulthood.

064 Govoni, R., Rupcich, N., & Frisch, G. R. (1994). Gambling behavior of adolescent gamblers. Windsor, ON: University of Windsor.

This study was undertaken to provide baseline information on the prevalence of problem gambling, characteristics of gamblers, gender differences, risk factors, and problem gambling behaviors of adolescents in Windsor, Ontario. An adolescent version of the South Oaks Gambling Screen (SOGS-RA) was administered to 965 high school students, aged 14 to 19 years.

It was found that 90% of adolescents were involved in gambling activities and a substantial proportion of these were engaged in underage gambling. Problem gambling levels were estimated to be 8.1% of the adolescent sample. Problem gambling behaviors were found to be related to the number of different gambling activities and the amount of money gambled. There were significant gender differences in the level of problem gambling but no significant differences between age groups were found.

- 065 Griffiths, M., Scarfe, A., & Bellringer, P. (1999). Brief Report: The UK national telephone gambling helpline--results on the first year of operation. Journal of Gambling Studies, 15(1), 83-90.**

This study outlines the results of the UK's national gambling helpline, the Gam-Care National Helpline. Run by GamCare, it is staffed by trained counselors, and available 12 hours a day. Data reported in this investigation are based on information given by callers. Although counselors did not solicit specific information, any relevant information given by callers was recorded. The results outlined here cover the period of the first 12 months of operation and represent the first gambling telephone helpline statistics published in the UK. The helpline received a total of 1729 calls. Of these, 51% were from problem gamblers themselves (90% male, 10% female) and 26% of calls were from relatives of problem gamblers. The remaining calls came from other professionals handling problem gambling cases (13%), attempted calls (4%), information requests (3%) and the media (3%). The average call with a problem gambler lasted 25 minutes. Fruit machine gambling appears to be most problematic for the callers as a whole and for particular sub-groups such as adolescents (82%) and women (52%). Next most problematic were off-course betting (37% of calls) and casino gambling (11%). Fewer calls involved females (20%) than males. Twelve percent of calls were made by persons under the age of 18. A significant minority of callers volunteered information about health related consequences of their problem gambling, suggesting that problem gambling is a serious health issue.

Although based on a self-selected sample these results are useful in providing insight into which forms of gambling appear to be most problematic. In conclusion, the authors point to the urgent need for that a national prevalence study on adult gambling.

- 066 Hendriks, V. M., Meerkerk, G. J., Van Oers, H. A. M., & Garretsen, H. F. L. (1997). The Dutch instant lottery: Prevalence and correlates of at-risk playing. Addiction, 92(3), 335-346.**

This paper reports on a randomized study of 4497 instant lottery players in the Netherlands during the year following introduction of the instant lottery. The purpose of the research was to evaluate possible negative side effects of instant lottery playing in terms of excessive playing or addiction. At-risk players (4.1%) were differentiated from recreational players on the basis of involvement in the instant lottery, impaired control, and negative consequences experienced. The methodology and results are described in detail, including chi-square and other statistics. Significant differences between at-risk and recreational players were noted on playing behaviour, socio-economic background, playing motivation, participation in other games of chance, and involvement in alcohol use and use of marijuana.

This study focuses on at-risk behaviours as an alternative to the addiction-oriented approach, which generally uses the South Oaks Gambling Screen (SOGS). Details of this alternative conceptual approach are provided. The results of this study are compared to the results of other gambling studies, particularly gender, ethnicity, and socio-demographic variables such as living alone, having a low income, and being unemployed. Negative motives and emotions were strongly correlated with at-risk playing. This study provides support for a general relationship between various types of addictive-like behaviours such as problem or pathological gambling and alcohol or other drug dependency.

- 067 Huxley, J., & Carroll, D. (1992). A survey of fruit machine gambling in adolescents. Journal of Gambling Studies, 8(2), 167-179.**

This study investigates some of the issues surrounding adolescent gambling and its association with deviance in light of inconsistent results obtained by previous surveys. In the present study

data were collected from questionnaires administered to 1,332 school children aged 11-12 and 14-15 in the Birmingham area. Sixty-two percent played on either fruit machines or video games, with 17.4% being solely or predominantly fruit machine players. Machine playing was found to be related to age, with more players in the older age group. Although boys and girls were equally likely to have played fruit machines, males played more frequently. The majority (83%) played with friends, indicating that fruit machine gambling is a social activity for most young people.

Although for the majority, fruit machine gambling was found to be an infrequent activity involving fairly small amounts of money, a small but significant proportion were found to be gambling often and spending in excess of their income. The reported incidences of stealing and truancy, etc. were generally somewhat higher than those reported by previous surveys, and these behaviors were found to be related to frequency of play and amounts of money spent. There was also evidence to suggest that supervision in arcades was lax, and that arcades may serve as venues for undesirable activities such as trading illegal or stolen goods and fighting. This finding supports previous researchers' concerns that arcades attract undesirables and/or illegal activities.

068 Ide-Smith, S. G., & Lea, S. E. G. (1988). Gambling in young adolescents. *Journal of Gambling Behavior*, 4(2), 110-118.

This study was designed to provide information on the acquisition of gambling habits through examination of the gambling behavior of young teens, an age thought likely to be a time of rapid increase in gambling. In addition to looking at gambling prevalence in this age group, the study attempted to determine whether exposure to adult gambling, or the culture of children themselves, first introduces children to gambling.

Questionnaires were administered to 51 high school students aged 13 to 14 in an Exeter high school, soliciting information on age, gender, social status, income, attitudes toward gambling, perceived attitudes toward gambling of significant others, and intelligence. Gambling was found to be very common; 89% of subjects reported at least some gambling activity. Males gambled more than females, both in absolute terms (93% vs. 84%) and as a proportion of income. A substantial proportion of children, especially boys, were found to be engaging in some form of gambling by the age of 10. Income was found to have a significant association with gambling behavior, but the effects of intelligence and social class were nonsignificant. Slot machines were the most common form of gambling in both sexes. The social contexts of different forms of gambling were found to differ. For example, card games and dominoes are primarily family activities learned and played at home and therefore acquired by children from the adult world. On the other hand, coin games and wagers mostly occur out of the home and, according to the author, are clearly part of the autonomous culture of childhood.

069 Integrated Planning Group. (1995). Gambling practices in Bonnyville and district: Final report: January 1995 (revised). Bonnyville, AB: AADAC.

The purpose of this investigation was to assess the incidence and types of gambling in the Bonnyville area of Alberta, determine the prevalence of problem gambling, and survey public opinion about community-based gambling and gambling issues. Questionnaires incorporating a modified version of the South Oaks Gambling Screen (SOGS) were administered via telephone to 374 survey participants. A copy of the questionnaire is appended to the report.

The report describes results related to participation and local gambling practices (frequency, conversion rates, gambling expenditures, gender comparisons), as well as the occurrence and nature of problem gambling (demographic profile, reasons for gambling, preferred activities, expenditures, and social, personal and financial costs). An overall problem gambling prevalence

rate of 5.07% was obtained for the Bonnyville area, with 4.01% estimated to be problem gamblers and 1.04% pathological gambling. Results regarding public opinion about community-based gambling activity are also reported (impacts on the community, gambling as a social problem, distribution of profits, where to get help).

It is notable that the sampling methodology and instrument used in this investigation allows many direct comparisons to the results of an Alberta-wide study of gambling prevalence study (Wynne Resources, 1994).

- 070 Jacobs, D. F. (1989). Illegal and undocumented: A review of teenage gambling and the plight of children of problem gamblers in America . H. J. Shaffer, S. A. Stein, B. Gambino, & T. N. Cummings Compulsive gambling: Theory, research and practice (pp. 249-292). Lexington, Massachusetts/Toronto: Lexington Books.**

Following a review of literature on the extent, types, and consequences associated with gambling among underage high school students in the United States, the author offers the first published estimates of the prevalence of both adult and juvenile children of problem gamblers in the United States, suggesting that there are 5.2 to 9.6 million adult children of problem gamblers, and 2.5 to 3.4 million children under age 18.

Findings are then presented from a study of the intergenerational effects of excessive parental gambling on children, an area where little or no research had been done to this point. Survey questionnaires were administered to 844 ninth to twelfth grade students in southern California schools soliciting information on general health, quality of life, school and work adjustment, involvement with a range of potentially addictive substances and activities, and indications of psychosocial maladjustment. Results from respondents who described themselves as children of problem gamblers (N=52) were then compared to those from students who reported that their parents had no gambling problems.

Overall, the results reflected a clear link between parental problem gambling and elevated risks for dysfunctional behaviors among their children. Deficiencies in home life are reflected by greater involvement of children in a number of potentially addictive, health-threatening behaviors, coupled with a consistent pattern of inadequate stress management and inferior coping skills. The author notes that the literature reports similar associations for children of alcoholics. Recommendations are made for further research and prompt social actions.

- 071 Kaplan, G., & Davis, B. (1997). Gambling, alcohol & other drugs: Prevalence & implications of dual problem clients. Manitoba: The Addictions Foundation of Manitoba.**

The goal of this study was to explore differences among three subsets of Addictions Foundation of Manitoba (AFM) clients in terms of selected demographic characteristics and social indicators. The three groups examined were: those with only gambling problems; those with only substance abuse (alcohol and/or other drugs) problems; and those experiencing both types of problems (dual problems). Groups were defined according to responses on the Manitoba Gambling Pre-Screen (MGPS) and CAGE questionnaires. In addition to prevalence of dual problems, the study explores differences and similarities in clients with single and dual problems, together with treatment implications.

Results presented include: demographic characteristics of the three subsets, drug consumption, family of origin issues in relation to client problems, client violent behavior, and client mental health and suicidal ideation. Dual problem clients tended to resemble clients with only substance abuse problems in terms of demographic characteristics. Clients with only gambling problems

differed from other addictions clients not only demographically, but also in life experiences and social indicators such as violence and suicidal ideation.

- 072 Kearney, C. A., Roblek, T., Thurman, J., & Turnbough, P. D. (1996). Casino gambling in private school and adjudicated youngsters: A survey of practices and related variables. Journal of Gambling Studies, 12(3), 319-327.**

This study reports the results of an exploratory study on adolescent casino gambling, one of the first to use subjects drawn from groups other than public schools. Participants consisted of 193 adolescents from two settings: 109 adolescents from a religious high school and 84 adolescents from a juvenile detention facility in Los Vegas, Nevada. Of the combined sample, 36.8% gambled regularly.

Results indicated many similarities between the two groups. Participants in the combined sample appeared to have a strong preference for casino gambling, were diverse in their practices and reasons for gambling and reported a variety of emotional and physiological behaviors when gambling. Gambling-related problems such as falling into debt, legal trouble, declining grades, and drug use were reported by 23.9% of respondents. Across both groups, 56.3% of subjects had parents who were aware of their children's gambling practices, and 42.5% stated that their parents approved of their casino gambling. The lack of differences between the two groups supports a possible trend toward homogeneity of adolescent gambling practices as a result of the increased accessibility and family orientation of many new casinos.

The authors acknowledge the limitations of self-report data, but suggest that these results point to some key variables that might be useful for future theoretical work and clinical research with adolescents, and suggest further that the need for such research is urgent.

- 073 Ladouceur, R. (1991). Prevalence estimates of pathological gambling in Quebec. Canadian Journal of Psychiatry, 36, 732-734.**

This paper reports on a province-wide survey in Quebec, the first study to examine the prevalence of pathological gambling in a Canadian population. A standardized assessment instrument (French language version of the South Oaks Gambling Screen; SOGS) was used in a telephone interview survey of 1,002 adult subjects. Evidence for the validity and reliability of the instrument are provided. Details of the stratified representative sampling strategy used in this study are described.

The response rate was 68%, with a higher response rate noted among urban respondents. The prevalence rate for problem gambling was estimated at 2.6% and for pathological gambling, 1.2%. Most respondents had gambled at least once in their lifetime (88.3%), suggesting that gambling is widespread in the province. Comparisons were drawn with American data. Significant differences, statistically determined using chi-square analysis, were found between respondents without gambling problems and responders who identified as problem and pathological gamblers (combined groups) on several variables: sex, age of onset, education, income, and marital status ($p < .05$).

Results are consistent with clinical data showing that pathological gamblers are most often men who began gambling in adolescence. The author suggests that gamblers in different socio-economic strata may be gambling for different purposes. Few pathological gamblers in this sample sought professional help for their problems. This paper provides a succinct description of a sound study that provides baseline data for a Canadian population.

- 074 Ladouceur, R., Boisvert, J.M., Pepin, M., Loranger, M., & Sylvain, C. (1994). Social cost of pathological gambling. Journal of Gambling Studies, 10(4), 399-409.**

This paper contributes to the research on social costs of pathological gambling by exploring the financial burdens of pathological gambling among pathological gamblers attending either Gamblers Anonymous meetings or clinical therapy sessions in various Quebec locations. Prevalence data from key studies dating from 1974 and definitional issues are discussed. The current literature on financial and other social costs are summarized, and a framework for estimating a gross social cost is adopted that includes both core costs and related costs.

A questionnaire, available upon request from the senior author, was developed and included items on the impact of pathological gambling on employment related behaviours, debts, money spent on gambling, illegal acts, frequency of alcohol and other drug use, and psychosomatic complaints. The results, described by the authors as preliminary and descriptive, indicate that the cost of pathological gambling is a critical and often underestimated burden on society. Difficulties in assessing all relevant costs, including difficult to ascertain issues such as emotional problems of family members, loss of trust, and other subjective issues are discussed. Moreover, assumptions and definitions underlying cost estimates and sampling frames require further investigation.

The conclusions support the 1993 recommendations of the National Council on Problem Gambling, with a call for measures to reduce or stop the effects of pathological gambling, involving both the private and public sectors, and for increased focus on prevention programs.

- 075 Ladouceur, R., Dube, D., & Bujold, A. (1994). Gambling among primary school students. Journal of Gambling Studies, 10(4), 363-370.**

The gambling behavior of 1,320 Quebec City area primary school students aged 8 to 12 was examined in this study. It was found that gambling is a well established activity for a large proportion of children at the grade school level. Eighty-six percent of respondents admitted to having, at some time or another, bet money. Over 40% reported gambling once a week or more. Lotteries are the most popular form of gambling for this age group, with 61% of students having bought lottery tickets. In descending order of popularity, other games played by students were: bingo, card-playing for money, bets on sports, wagering on specific events, video gambling (video poker and slot machines), and finally betting on games of skill. Gambling behaviors differed according to gender, with boys gambling more frequently and spending larger amounts of money, and they increased significantly with age.

Because of the early development of gambling behavior in children, it is recommended that prevalence of pathological gambling in primary school be systematically investigated and that prevention programs for pathological gambling be implemented as early as the fourth grade.

- 076 Ladouceur, R., Dube, D., & Bujold, A. (1994). Prevalence of pathological gambling and related problems among college students in the Quebec metropolitan area. Canadian Journal of Psychiatry, 39, 289-293.**

This article reports on the prevalence of gambling, pathological gambling and problems associated with gambling among students in three colleges (i.e., forms of education called "CEGEPS" that are intermediate between high school and university) in the Quebec city metropolitan area. Nearly 90% of students had ever gambled; 21.7% engaged in gambling at least once weekly.

The authors situate CEGEP student gambling in the general literature on teenage gambling and pathological gambling in this demographic group by gender and preferred type of gambling.

Moreover, the authors note the importance attached to understanding gambling activities amongst members of this age group, as the majority of pathological gamblers report beginning the habit in adolescence. Environmental attributes, such as the absence of casinos during the study period, are noted.

For the researcher interested in general patterns of gambling among older teenage students, this article provides (in tabular form) a profile of gambling behaviours according to gender and monies spent on gambling activities by gender. All statistics are reported in detail and indicate that gambling among these college students, and the prevalence of pathological gambling, is widespread. Pathological gambling was assessed by the South Oaks Gambling Screen (SOGS) and results correlated with a number of economic, interpersonal, and professional problems, as well as with other behaviours such as drug use, eating disorders, arrests, and suicide attempts. The results of this study fail to confirm results from American studies that students with parents having a pathological gambling problem were more likely to adopt this problem. Limitations to generalizability of the results of this study are discussed.

This study realistically assesses the limitations of the study results and provides important directions regarding areas for future research. The authors draw parallels with the adolescent substance abuse literature that are useful for interpreting the results of this study, noting that teenage experimentation is a relatively normal phenomenon. Longitudinal studies are required to confirm this hypothesis, however. Further studies to investigate the correlation of pathological gambling and other addictive behaviours are required, as well as studies that explore influences within the family unit on development and maintenance of gambling. Other potentially fruitful areas for future research on the impact of casinos and correlates with pathological gambling are noted.

146 Ladouceur, R., Jacques, C., Ferland, F., & Giroux, I. (1999). Prevalence of problem gambling: A replication study 7 years later. Canadian Journal of Psychiatry, 44(8), 802-804.

This study investigates the relationship between availability of gambling activities and participation in gambling, maximum amount of money lost in one day to gambling, and prevalence of pathological gambling. The French version of the South Oaks Gambling Screen (SOGS) was used to survey two random representative telephone samples (first sample = 1,002; second sample = 1,257) of adults residing in Quebec. Chi-square analyses indicate that significantly more people (63%) reported having gambled in the last year (1996) in comparison with the first survey (1989). Moreover, losses were significantly higher and age at onset of gambling activity had increased. Lifetime rates of problem gambling remained relatively constant; however, lifetime pathological gambling increased. The incidence of pathological gamblers is estimated at an average of 5,421 new gamblers per year, although the percentage receiving help remains low. The authors provide relevant statistics in their report.

077 Ladouceur, R., & Mireault, C. (1988). Gambling behaviors among high school students in the Quebec area. The Journal of Gambling Behavior, 4(1), 3-12.

A sample of 1,612 adolescents from nine randomly selected high schools in the Quebec City area completed a questionnaire developed by Lesieur and Klein(1987) concerning their gambling behavior. The majority of students (76%) had gambled once in their lifetime, 65% placed a bet in the last year and 24% gambled at least once a week. Preferred games were lotteries, sports betting, and card games. Of those who had gambled, 5.6% wanted to stop playing but reported they were unable to do so, while 1.7% were considered to be pathological gamblers according to DSM-III criteria, and over 5% of respondents were judged to be at risk. More than 5% of respondents believed that their parents gambled too much.

The authors suggest that programs providing information on gambling are clearly needed in high schools. They believe that the rates found here for pathological and gambling problems are alarmingly high and merit the concern of educators, mental health professionals, and policy makers.

078 Legarda, J. J., Babio, R., & Abreu, J. M. (1992). Prevalence estimates of pathological gambling in Seville (Spain). *British Journal of Addiction*, 87, 767-770.

This paper presents the results of the first epidemiological study carried out in Spain on gambling on a proportionate sample (n = 598), stratified by age and sex, in Seville. A translated version of the South Oaks Gambling Screen (SOGS) was used, supplemented with socio-demographic questions. Based on standard SOGS criteria, 1.7% of the sample appeared as probable pathological gamblers and 5.2% as problem gamblers. Significant gender, age, employment, marital status, and gambling frequency differences were noted between problem and probable pathological gamblers, although the authors do not specify the statistical test used. A comparative sample of 24 pathological gamblers from a treatment centre in Seville suggests that few pathological gamblers attend treatment. Among those in treatment, younger men from lower income groups were over-represented.

The authors suggest that national prevalence data for Spain is required.

079 Lesieur, H. R. (1989). Experience of employee assistance programs with pathological gamblers. *The Journal of Drug Issues*, 19(4), 425-436.

This study investigates employee assistance program (EAP) experiences with pathological gamblers, including types of services and referrals made, impact of gambling-specific training/education on referral rates, and training/education experiences and needs of individuals providing EAP services.

Data were collected in two stages. First, 86 EAP employees and service providers contributed information about their experiences with pathological gamblers through completion of questionnaires sent to members of the Association of Labor-Management Administrators and Consultants on Alcoholism (ALMACA). The second stage consisted of telephone interviews with 12 individuals from EAPs or service providers that had seen five or more pathological gamblers in the past year. Sixty-four percent of those surveyed had identified pathological gamblers, who represented 1.4% of their total client population. Of those who had identified pathological gamblers, 38% (31% of EAPs and 69% of service providers) offered services to pathological gamblers in their own organizations, while 59% (71% of EAPs and 15% of service providers) made referrals to outside treatment facilities. Seventy-eight percent of organizations that had someone attend training/education sessions on pathological gambling said they identified pathological gambler employees in contrast to 45% of those that had not attended education/training sessions. The need mentioned most frequently by respondents was for both basic and advanced level training and education about pathological gambling. Also mentioned frequently were the need for specialized treatment services, both inpatient and outpatient, to deal with pathological gambling, and wider availability of Gamblers Anonymous and Gam-Anon meetings.

The authors acknowledge the survey's low response rate (25%) and its possible effect on the case-finding rate of 1.4%. One explanation offered for the relatively low case-finding rate is the nature of the pathological gambler's career, in which work performance is not seriously and obviously disrupted until the later stages when obsession with losses, loans, and illegal activity (sometimes involving employee theft or embezzlement) impair job performance. Obviously, identification of

pathological gamblers needs to take place before this point is reached. The author points to the clear need for more training programs devoted to the assessment, referral and treatment of pathological gamblers.

- 080 Lesieur, H. R., & Heineman, M. (1988). Pathological gambling among youthful multiple substance abusers in a therapeutic community. British Journal of Addiction, 83, 765-771.**

The purpose of this study was to determine prevalence of problem gambling and to examine patterns of gambling behavior among multiple substance abusers aged 13 to 33 years (average age 17) in a therapeutic community. The South Oaks Gambling Screen (SOGS) was used to screen clients for gambling-related problems.

Out of 100 residents tested, 14 were diagnosed as pathological gamblers and an additional 14 showed signs of problematic gambling. Signs of pathological gambling were found in 17% of those listing alcohol as one of their three favorite drugs, 18% listing cocaine, 13% preferring marijuana, 11% preferring hallucinogens, 29% choosing heroin, 10% choosing PCP, and none choosing tranquilizers or sedatives. Males were more likely to be classified as pathological gamblers than females. Residents aged 19 years and over were four times as likely to show signs of pathological gambling than those 18 years and under. SOGS scores were also significantly associated with parental gambling (50% of the children of pathological gamblers were pathological gamblers themselves) and occupational status.

The paper concludes with a discussion of treatment implications and directions for future research.

- 081 Lesieur, H. R., & Klein, R. (1987). Pathological gambling among high school students. Addictive Behaviors, 12, 129-135.**

The purpose of this study was to explore the extent of pathological and problem gambling among high school students. Eight hundred and ninety-two eleventh and twelfth grade students from four New Jersey high schools were given a questionnaire that asked students what forms of gambling they engaged in, the extent of their gambling, the extent to which gambling created problems in their lives, and also asked for various socio-demographic data.

Ninety-one percent of the students had gambled at least once in their lifetime, 86% gambled in the last year and 32% gambled at least once a week. The most popular form of gambling was card playing for money, followed by casino gambling, sports betting, playing numbers or lotteries. Use of the Pathological Gambling Signs Index, an index based on DSM-III criteria for pathological gambling, indicated that 5.7% of the students showed clear signs of pathological gambling. Socio-demographic variables found to be significantly correlated with the Pathological Gambling Signs Index were sex, parental gambling problems, grade average, and the extent of gambling by the student.

This study shows clearly that pathological gambling exists among youth. This raises the question of the need for education and counselling for pathological gambling in the schools in much the same way as education and counselling are available for drug and alcohol related problems.

- 082 Lo, J. (1996). Problem gambling in Calgary's Chinatown and East-end. Calgary, AB: AADAC.**

The purpose of this study was to determine the extent of problem gambling in Calgary's Chinatown and East-End and to assess the need for educational programs for problem gamblers. Data were collected from 400 individuals using a questionnaire based on the SOGS (copy is appended). Both face-to-face and telephone interviews were used.

Results presented include prevalence, demographic profile, employment, distribution by ethnic group, education, income, reasons for gambling, preferred activities, gambling expenditures, family members with gambling problems, and boasting behavior. A profile of problem gamblers, found to represent 7.75% of total respondents, is presented. Recommendations for educational programs are presented, and several efforts at educational programming are described.

- 083 Miller, M. A., & Westermeyer, J. (1996). Gambling in Minnesota [Letter to the editor]. American Journal of Psychiatry, 153(6), 845.**

Reported here are the results of an investigation undertaken to assess the extent of gambling-related problems among 412 patients in the general psychiatry and alcoholism-addictions units of the Minneapolis Veterans Administration Medical Center. The South Oaks Gambling Screen (SOGS) was administered and patients were classified as having no gambling, mild gambling, or pathological gambling problems. Results for two units combined indicated that 60% had no gambling problems, 25% had mild gambling problems, and 15% were classified as pathological gamblers. Proportions of pathological gamblers among general psychiatry patients and substance disordered patients were almost identical. The overall rate of pathological gambling among all patients was about 10 times the estimated rate for the general population of Minnesota.

- 195 Moore, S. M., & Ohtsuka, K. (1997). Gambling activities of young Australians: Developing a model of behaviour. Journal of Gambling Studies, 13(3), 207-236.**

As more gambling venues open in Australia, youth gambling as problem behavior has been identified. The aim of this study was to assess youth gambling, including behaviors, attitudes, beliefs and social norms, in a population with easy access to gambling. In addition, the study was designed to evaluate the adequacy of a model for predicting adolescent gambling frequency and problem gambling. The model comprised a combination of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), personality variables (venturesomeness, impulsiveness), and cognitive bias variables derived from Weinstein's (1980) propositions concerning unrealistic optimism about future life events. Questionnaires were administered to a sample of 1,017 adolescents aged 14 to 25 from a university and schools in Melbourne, Australia.

Results indicated relatively low frequencies of gambling and low scores on the problem gambling scale (a modified version of the South Oaks Gambling Screen), with males scoring higher than females on both measures. The TRA was supported with about 30% of the variance of each of gambling behavior and problem gambling accounted for by intentions, attitudes, and subjective norms. Personality factors added significantly to the prediction of gambling. The cognitive bias variables, although independently not statistically significant, further contributed to prediction.

The authors conclude that gambling is a frequent, normative, and approved activity among youth, and can be quite well predicted by a rational decision-making model of behavior, although non-rational factors such as personality and cognitive bias do contribute to the prediction.

- 084 Mountainview Homehelp Association. (1995). Adolescent gambling survey final report. Olds, AB.**

The purpose of this investigation was to determine the overall prevalence of gambling, as well as the prevalence of specific types of gambling activities and associated gambling behaviors among adolescents in the county of Mountain View, Alberta. Survey questionnaires were administered to 384 students in grades 7 to 12 at six county schools. Valid surveys were completed by 283 students.

It was found that 87.27% of students had gambled within the past twelve months. Males were found to be considerably more likely to engage in gambling activities than females. It was estimated that 21.55% of students were problem gamblers or at risk for problem gambling. The report concludes with a number of specific recommendations regarding education and prevention.

085 Napi Friendship Centre, & AADAC. (1996). The Southwest Alberta gambling study. Crowstest Pass, AB: AADAC.

This study focuses on prevalence of gambling in Southwestern Alberta; public opinion toward both gambling and availability of counseling services; and gambler characteristics. A combination of telephone and face-to-face interviews were used to collect data from 248 persons. The survey instrument included questions from both the South Oaks Gambling Screen (SOGS) and the "Spirit of Bingoland" study. A copy of the survey is appended.

Results presented relate to prevalence, including demographics, types and frequency of gambling, and money spent; public opinion towards gambling in general and specific kinds of gambling (bingo, lottery, VLT); public opinion towards availability of addiction treatment; context of gambling, including favorite type, gambling as a social activity, and time spent; reasons for gambling; problems experienced by gamblers; and associations with gender, income, community involvement, ethnicity, and problem gambling.

086 National Gambling Impact Study Commission. (1999). The National Gambling Impact Study Commission. Washington, DC: National Gambling Impact Study Commission.

The National Gambling Impact Study Commission was charged with conducting a comprehensive legal and factual study of the social and economic implications of gambling in the United States. The Commission made site visits, commissioned original research, conducted literature surveys, and solicited and received input from a broad array of individuals and organizations. In addition, it held a series of hearings around the country to receive testimony from experts and members of the public.

This report presents the principal findings of these efforts, as well as recommendations intended to provide a coherent framework for action. Following an overview of gambling in the United States, the report presents findings and recommendations in the following areas: gambling regulation; problem and pathological gambling; internet gambling; Native American tribal gambling; and gambling's impact on people and places.

The report concludes with recommendations for future research, including a proposal that gambling components be added where appropriate to existing federal research in the substance abuse and other mental health fields. Appendices include statements by Commission members, text of the National Gambling Impact Study Commission Act, list of references, information sources and resources on gambling, glossary, and catalog of gambling legislation.

087 Pasternak, A. V., & Fleming, M. F. (1999). Prevalence of gambling disorders in a primary care setting. Archives of Family Medicine, 8(6), 515-520.

This paper explores the prevalence of gambling disorders as indicated by a cross-sectional survey conducted in primary care settings. The results are compared with population-based studies. Proximity to casinos, substance abuse, health ratings, age, sex, and socio-economic status are explored for association with gambling disorders among adult patients (age 18 years or older) reporting to primary care physicians in three clinics in Wisconsin.

Sampling methodology is discussed in detail, particularly the measures taken to detect statistically significant differences across the clinics, and details of the research instrument and analytical methods are given. The literature concerning general prevalence rates of problem and pathological gambling is summarized, including a recent meta-analysis of gambling disorders. The authors report that 80% of the sample had ever gambled, and lifetime prevalence for gambling disorders was 6.2% across the clinics surveyed. The authors suggest that the relation between gambling disorders and other mental health disorders, especially anxiety and depression, or physical symptoms warrants further study. They discuss also difficulties in comparing clinic-based samples with population-based studies, due to respondent selection bias and method of administration of the SOGS. Limitations of the generalizability of study results to other clinic-based studies are discussed as well. The issue of non-responders and the effect on rate estimation are addressed; non-responder were more likely to be men and older than responder, thus non-responder biases are towards more conservative results on the one hand, or overestimation on the other, artificially creating the lack of association between pathologic gambling and age.

088 Pugh, P., & Webley, P. (2000). Adolescent participation in the U.K. National Lottery Games. Journal of Adolescence, 23(1), 1-11.

The purpose of this study was to investigate the prevalence of illegal participation by children under the age of 16 years in the two U.K. National Lottery games (on-line game and *Instants* scratchcards), and to explore the impact on adolescent participation of government supported advertising, unrestricted availability and household participation.

Questionnaires were completed by 256 children aged 13 to 15 years from four mixed-sex schools and colleges in the county of Devon, U.K. Findings indicate that illegal participation by children of both sexes is a very common activity. Fifty-six percent of the sample had participated in the National Lottery on-line game and 54% in the National Lottery *Instants* scratchcards. Regression analysis revealed that the best predictors of participation in the on-line game were disposable income, household participation, whether a lottery (on-line game) TV show was watched and whether a retailer had ever refused to sell a child a lottery ticket (only nine of 137 children had ever been refused). Except for watching of the TV show, the same variables were also the best predictors of buying scratchcards.

Overall, the results indicate the impact on adolescent gambling of the introduction of the National Lottery has been substantial. Several steps for minimizing this impact are suggested, including treatment of under-age gambling more seriously (comparable to under-age drinking), enforcing the law prohibiting sale of lottery tickets to adolescents, and moving the lottery television show to later in the evening.

089 Quintim Business Services. (1995). Slave Lake gambling project: Survey results & analysis, January, 1995. Slave Lake, AB: Quintim Business Services or AADAC.

This report summarizes the results of a survey of 420 Grade 7-12 students in two Slave Lake area schools, as well as a small sample of 41 adult attendees at community bingos. Results from the youth survey include prevalence according to demographic variables and type of gambling activity; source and amount of money spent on gambling; and students' perceptions of parents' gambling activities. Results from the adult survey include prevalence, types of gambling activities pursued, effects of gambling on personal finances, and feeling of concern about their gambling. Copies of the survey instruments are appended.

- 090 Shaffer, H. J., LaBrie, R., Scanlan, K. M., & Cummings, T. N. (1994). Pathological gambling among adolescents: Massachusetts gambling screen (MAGS). Journal of Gambling Studies, 10(4), 339-362.**

This study was designed to develop a brief clinical screening instrument, the Massachusetts Gambling Screen (MAGS), which can be used to assess non-pathological and pathological gambling during a 5 to 10 minute survey or interview. The data for the development of this instrument were obtained from a survey of 856 adolescents who were students in suburban Boston high schools.

It was found that pathological and non-pathological adolescent gamblers could be correctly classified by a 7-item MAGS subscale which had high reliability and discriminant, criterion-related, and predictive validity. A second, 12-item subscale, based on clinical interview questions derived from the 10 DSM-IV criteria for pathological gambling, was also found to have high reliability. In addition to pathological gamblers, it was found that gamblers who were in transition (either at risk for becoming pathological gamblers or gamblers in remission) could also be distinguished. The results also indicated the prevalence of a variety of social and emotional problems associated with adolescent gambling.

The authors conclude that the MAGS can be employed most effectively if used as only one step in the screening, identification and treatment process. Specifically, it can be used initially to identify individuals who are at risk or in need of treatment for pathological gambling, whereas the SOGS is designed specifically for in-treatment screening and can be used later to clarify the specific nature and extent of gambling behaviors and the degree to which they are problematic. The authors indicate a need for additional research to assess the effectiveness of the MAGS.

- 091 Shaffer, H. J., Vander Bilt, J., & Hall, M. N. (1999). Gambling, drinking, smoking and other health risk activities among casino employees. American Journal of Industrial Medicine, 36(3), 365-378.**

Constituting the first broad-based health prevalence study among gaming industry employees, this paper examines the prevalence of pathological gambling and a variety of other health risks among casino workers. A sample of 3,841 full-time casino employees representing four different sites was surveyed about gambling, drinking, smoking, and other health risk behaviors. In addition, respondents were asked about their use of the employee assistance program (EAP) and perceived obstacles toward using the EAP. Survey instruments included the Health Risk Assessment (HRA), South Oaks Gambling Screen (SOGS), and the CAGE, used to identify alcohol problems.

Casino employees were found to have a higher prevalence of past-year pathological (level 3) gambling behavior, but a lower prevalence of past-year problem (level 2) gambling than the general adult population. In addition, higher prevalence was found in casino employees of smoking, alcohol problems, and depression than in the general adult population. Furthermore, these risk behaviors tend to cluster together; however it remains uncertain which factors serve as causes and which are effects, or if some other factor(s) leads to all of these problems. The majority of non-smoking respondents in this sample were exposed to second-hand smoke. Employees reported low participation in the company's EAP.

The results of this study suggest that EAPs can refine their clinical services by improving their screening activities and recognizing the co-linearity of health risk factors among casino employees. A number of other specific recommendations for reducing employee health risks are offered.

- 092 Shepherd, R. M., Ghodse, H., & London, M. (1998). A pilot study examining gambling behavior before and after the launch of the national lottery and scratch cards in the UK. Addiction Research, 6(1), 5-12.**

The purpose of this study was twofold: to investigate gambling behavior before and after the introduction of National Lottery tickets and scratch cards, and to investigate demographic variables associated with groups of people who may be vulnerable to National Lottery and scratch card gambling beyond their means. Data are based on three questionnaires (baseline, six and 12 month follow-up) completed by each of 206 Cambridgeshire residents before and after the launch of United Kingdom's National Lottery. Questionnaires incorporated DSM-IV gambling criteria, as well as questions related to demographics and National Lottery and scratch card purchases. Before presenting results, the authors discuss methodological limitations of the study and its implications for interpretation of the results.

One percent of subjects were identified as pathological gamblers by DSM-IV criteria. A significant ($p < .05$) increase in problem gambling behavior was found over the one-year period, evidence that the introduction of new gambling opportunities has had an impact on gambling patterns. Although symptoms of pathological gambling rose significantly at 6 and 12 month follow-ups, there was no increase in cases of pathological gamblers. While the increase in problem gambling symptoms was evenly spread across all subgroups, it was found that those with lower educational attainments and lower incomes were more vulnerable to excessive spending on scratch cards and National Lottery tickets. Further, discrepancies between reported and actual gambling behavior indicate a failure to recognize some activities, such as bingo and lottery participation, as gambling. This finding suggests that some forms of gambling behavior have become normalized in the culture, possibly increasing the risk of problem gambling. The article concludes by discussing implications of the results for future research and treatment planning.

- 093 Sommers, I. (1988). Pathological gambling: Estimating prevalence and group characteristics. The International Journal of the Addictions, 23(5), 477-490.**

This random telephone study employed behavioural criteria as the basis for identifying pathological gamblers in a community survey among adults ($n = 534$) residing in a nine-county area of southeastern Pennsylvania and southern New Jersey. The behavioural criteria used as indicators of pathological gambling, as well as details of questionnaire development and pre-testing, are provided. Only 31% of the study respondents were gamblers; 74% of those respondents admitted to one or more of the clinical signs of gambling pathology; 7.49% of the entire sample was identified as at-risk gamblers; 3.3% were probable pathological gamblers. Demographic characteristics of the survey respondents and problem and pathological gamblers identified in the study are provided also. Among respondents, differences by age, gender, religion (Catholic and Jewish), marital status, and income are noted.

The results indicate that, unlike previous observations that pathological gamblers are primarily middle-aged, middle- to upper-income, married males, there is considerable demographic diversity in this group. The author calls for more research on gambler sub-populations.

- 094 Spunt, B., Lesieur, H., Hunt, D., & Cahill, L. (1995). Gambling among Methadone patients. The International Journal of the Addictions, 30(8), 929-962.**

This study examines participation in various forms of gambling activities and establishes the prevalence of pathological gambling in a sample of 117 patients enrolled in a large methadone maintenance treatment program in New York City. Respondents were interviewed with an

instrument that incorporates the South Oaks Gambling Screen (SOGS); a copy is appended to the article.

It was found that gambling was a common part of the regular activities of many patients, with 85% of respondents having gambled in some way in the last six months. Fifteen percent of patients had some problem with gambling, and an additional 16% were probable pathological gamblers. Heroin and alcohol were the substances most likely to have been used by pathological gamblers just prior to or while gambling, while marijuana and cocaine were the substance next most likely to have been used. About 25% had engaged in some type of crime or hustling activity to cover gambling expenditures.

Overall, the results suggest that a significant proportion of heroin addicts enrolled in methadone treatment programs may be pathological gamblers. For these individuals, pathological gambling may accompany and reinforce continued drug dependence, interfere with treatment, and be a factor in relapse. The authors note that research on the interconnectedness among problem drug use, problem gambling and other excessive behaviors is still in its infancy, and they suggest a number of questions for future investigation.

095 Stinchfield, R., Cassuto, N., Winters, K., & Latimer, W. (1997). Prevalence of gambling among Minnesota public school students in 1992 and 1995. *Journal of Gambling Studies*, 13(1), 25-38.

This article describes the results of the Minnesota Student Survey administered in 1992 and 1995 to students 6th, 9th and 12th grade public schools, which was the largest known sample of youth gambling data collected to date and provides normative sample of youth gambling data. To answer questions about the generalizability of the findings of prevalence studies of adolescent gambling to the larger youth population, the authors administered a controlled questionnaire in a controlled setting (schools) at regularly timed intervals. The survey included questions pertaining to alcohol and drug use risk and gambling behaviours. In addition to prevalence data on youth gambling, rates are compared between 1992 and 1995. The data suggest, from a statistical standpoint, what levels may be considered common and uncommon among youth. Moreover, the relationship between gambling and other psychosocial and behavioural variables is measured. The results indicate gender, grade, and race effects in frequency, patterns, and problems related to gambling.

The study does not measure prevalence rates of pathological gambling among youth. Researchers interested in prevalence rates of pathological gambling among youth are referred to Shaffer and Hall's (1996) meta-analysis, where the serious problem or pathological gambling rate among youth is estimated at 4.4% to 7.4% (95% confidence interval). The authors review, briefly, the literature considered by Shaffer and Hall (1996), with an emphasis on prevalence of gambling rather than pathological gambling, including studies by Arcuri et al. (1985), Lesieur and Klein (1987), Ladouceur and Mireault (1988), Jacobs (1989), Volberg (1993), Wallisch (1993), Winters et al. (1993, 1995), Shaffer et al. (1994), Ladouceur et al. (1994), and Buchta (1995). Methodological weaknesses of these studies are discussed.

This article provides a clear description of the purpose, samples, instruments and procedures followed. Results are described in detail, with some discussion of statistical versus clinical significance, and the influence of large sample sizes. Chi-square statistics and details of stepwise multiple regression are provided for select analyses.

- 096 Sullivan, S., Abbott, M., McAvoy, B., & Arroll, B. (1994). Pathological gamblers—will they use a new telephone hotline? New Zealand Medical Journal, 107(983), 313-315.**

Callers to a new national toll-free telephone hotline were assessed with a standard diagnostic screen (South Oaks Gambling Screen; SOGS) and the results were compared with data from a national epidemiological survey. Methodological details and frequency data for the current study are provided. The authors note that callers, particularly those of younger ages, preferred gambling machines, although this form of gambling was introduced relatively recently. A high rate of suicidal ideation among pathological gamblers calling the hotline was consistent with previous studies showing elevated rates of stress and depression.

The results of prevalence studies of pathological gambling in New Zealand are summarized, indicating rates comparable to other jurisdictions. Higher prevalence rates among Maori and Pacific Islander populations, and major risk factors are described as reported in previous studies.

- 097 Sullivan, S. G., McCormick, R., & Sellman, J. D. (1997). Increased requests for help by problem gamblers: Data from a gambling crises telephone hotline. New Zealand Medical Journal, 110(1053), 380-383.**

This article reports trends, gambler profiles, and gambling modes based on data collected from new callers to a national gambling telephone hotline in New Zealand. Data were collected in a semistructured manner by hotline counsellors over a twelve-month period covering six months before and after the opening of the Auckland casino. The sample was comprised of 1,336 new callers, 732 problem gamblers and 604 significant others of problem gamblers.

It was found that increased use of the gambling crisis hotline by new callers coincided with increased availability of gambling opportunities, particularly gambling machines and a casino. New callers contacting the service increased 65% from the first to the second six month period, and casinos increased from 7% of reported problems in the six months prior to the opening of the Auckland casino, to 34% of reported problems for the six months following. Overall, problem gamblers and significant others of problem gamblers reported relatively specific problem modes, rather than generalized problem gambling behavior. Over the 12 month period, percentages of reported problem modes were: track (horse and dog) racing 25%, video gambling machines ("poker" machines) 49%, casinos 24% and other modes 2%. Although the authors urge caution in interpreting responses to a hotline as representative of problem gambling prevalence in the community, they note that the profile of new callers is similar to that identified in previous New Zealand research. Seventy-three percent of problem gambler callers were 40 years of age or younger, with 15% under 25 years of age. Most problem gambler callers were male (70%), while most significant other callers were female (77%). Maori callers, particularly female Maori, were high users of the gambling crisis hotline, comprising 24% of all gamblers and 35% of female problem gambler callers.

The authors conclude that problem gambling is a serious, widespread, and growing mental health problem, and that the New Zealand government should provide funding for treatment.

- 098 Templer, D. I., Kaiser, G., & Siscoe, K. (1993). Correlates of pathological gambling propensity in prison inmates. Comprehensive Psychiatry, 34(5), 347-351.**

Psychometric correlates of pathological gambling inventory scores in prison inmates were investigated in this study. The South Oaks Gambling Screen (SOGS) was administered to 136 consecutively admitted inmates in a medium-security prison 30 miles from Las Vegas, Nevada. The Minnesota Multiphasic Personality Inventory (MMPI) and the Raven's Standard Progressive

Matrices, a measure of intelligence, had been administered upon admission as part of standard intake procedure.

Results from the SOGS indicated that 22.79% of these inmates had some problem with gambling and 24.26% were probable pathological gamblers. In general, it was found that higher gambling scores were associated with more unfavorable scores on the Raven's Standard Progressive Matrices and the MMPI. Significant positive correlations with the F, depression, psychopathic deviate, psychasthenia, paranoia, schizophrenia, and MacAndrew alcoholism scales of the MMPI were found. Gambling scores were negatively correlated with scores on the Raven's Standard Progressive Matrices, indicating that inmates with higher gambling scores tend to function at a lower intellectual level.

The authors suggest that because of the association of other psychopathology with pathological gambling, treatment plans should not focus exclusively on gambling but should consider other mental health interventions when indicated. Some inmates may require a three-pronged treatment approach incorporating gambling, substance abuse and traditional psychiatric interventions.

099 Volberg, R. A. (1994). The prevalence and demographics of pathological gamblers: Implications for public health. American Journal of Public Health, 84(2), 237-241.

This article reports on the results of a 5-state random stratified study of gambling involvement and pathological gambling that had recently been completed. The purpose was to provide baseline data for addressing public health issues related to the expanding availability of legalized gambling. The sampling design was structured to ensure inferences could be drawn between the sample and the population 18 years and older in these states. Data from pathological gamblers in the general population and treatment programs were collected also. The interview was based on the South Oaks Gambling Screen (SOGS) and included questions concerning experiences with popular forms of gambling, gambling-related problems, and demographics. Differences in gambling involvement and pathological gambling rates were observed among the states involved in the study. Moreover, individuals entering treatment for gambling-related problems differed from those in the general population in gambling involvement and demographic characteristics. The results of chi-square analyses are presented. Specific issues concerning women, minorities, and youth are discussed.

The author provides a discussion of the reliability and validity of the SOGS, pointing out that SOGS may distinguish "probable" pathological gamblers in a population based study, in contrast to its use as a diagnostic tool in clinical evaluation. Policy and program implications of the study results are discussed, including the potential impact of continued gambling legalization on the overall rate of gambling problems in the general population and on specific at-risk groups, such as women, children, and minorities. The author suggests that harm minimization approaches will be needed to ameliorate the problems that will be experienced by some groups, beginning with prevention, treatment, and rehabilitation. Specific recommendations from a public health perspective are suggested.

This article will be particularly valuable to researchers concerned with methodological issues in the use of SOGS and design of large, multi-site studies with stratified sample design. Moreover, important issues are presented, and strategies proposed from a public health approach, concerning women, youth, and minority groups.

100 Volberg, R. A. (1993). Gambling and problem gambling among Native Americans in North Dakota. Albany, NY: Gemini Research.

This report describes the results of the first study on gambling involvement and problematic gambling among Native Americans. 400 residents in North Dakota participated. Data were gathered by an extensive administered questionnaire, which is attached to the report, and investigated 16 different types of gambling, lifetime and current South Oaks Gambling Screen (SOGS) items, and demographic information. Details of the two-pronged data collection strategy are provided.

The key findings of the study are reported in the executive summary and expanded on in the body of the report in detail. Relevant statistics, including p values, are provided for tests of significant differences between dependent and independent variables. Differences by county are provided also. Similar to the general population, most respondents gamble or have gambled at some time in their lives (85%). Younger (under 30) and those with less than a high school education were more likely to have ever gambled. Lifetime prevalence rates of problem and probable pathological gambling were estimated at 14.5% among respondents, compared to 3.5% in general population; females are disproportionately represented in this group. Current prevalence rates of problem and probable pathological gambling were estimated at 12.3% of the population, compared to 2.0% in the general population. Live bingo and pulltabs, both continuous forms of gambling, are the most popular types and are closely associated with problem and probable pathological gambling. The author notes that extreme poverty in Native American communities has contributed to high rates of alcoholism, depression and suicide, and warns the reader that problem gambling must be addressed in light of future expansion of casino gambling planned for several reservations in the region.

This study provides a benchmark for future assessments of gambling involvement and problem and probable pathological gambling among Native Americans in North Dakota.

101 Volberg, R. A. (1993). Gambling and problem gambling in Washington State: Report to the Washington State Lottery. Albany, NY: Gemini Research.

This report presents the results of a state-wide survey of gambling involvement and problem gambling in Washington State. A questionnaire incorporating the South Oaks Gambling Screen (SOGS) was administered to sample of adults via telephone. A copy of the survey is appended. Results presented include prevalence and demographic profile; gambling frequency, expenditures, reasons for gambling and favorite gambling activities; prevalence and demographic profile of problem and probably pathological gamblers; comparison of non-problem and problem gamblers in terms of demographics, participation, gambling activities, expenditures, and costs, both personal and interpersonal; and perspectives on gambling careers, or lifetime gambling experiences. Addressing problem gambling in Washington State and the role of state gambling agencies are considered in the study's conclusions.

102 Volberg, R. A., & Abbott, M. W. (1994). Lifetime prevalence estimates of pathological gambling in New Zealand. *International Journal of Epidemiology*, 23(5), 976-983.

This paper summarizes the findings of the first national adult prevalence survey of pathological gambling in New Zealand and compares the results to similar surveys in the United States and Canada. The South Oaks Gambling Screen (SOGS) was used in randomized interviews with 4,053 people by telephone. The survey instrument included a detailed assessment of gambling participation. Some description of the methodology and sampling frame is provided; for example, a supplemental sample of 120 Maori and Pacific Islanders were added and the overall sample was

weighted to reflect the distribution of age, gender and household size in the population. For more details, the reader is referred to the original report of the study published in 1991.

The results, which are summarized by socio-demographic variables (age, gender, income, ethnicity, employment status, type of gambling), indicate that gambling is a popular activity in New Zealand. Of those surveyed, 95% had participated in gambling and 7% were classified as having been a problem or probable pathological gambler at some time, a higher (although conservative) prevalence rate estimate than those found in American and Canadian surveys. The authors note that the American data, which they summarize, shows variation by region and, across all regions, prevalence rates tend to increase over time. Discriminant analysis highlights differences between the no-problem and combined problem or probable pathological groups; the independent variables contributing most to this discrimination were ethnicity, age, parental history of problem, marital status and household size. Regional differences were attributed largely to ethnic concentrations in large urban centres. The combined problem groups were associated with continuous forms of gambling and indicated higher levels of regular participation in and expenditure on these forms of gambling. Differences between this study and an earlier (1986) study may be attributable to methodological differences, rather than indicative of a trend. The significance of the results for problem gambling education, prevention, treatment and research is discussed.

103 Volberg, R. A., & Silver, E. (1993). Gambling and problem gambling in North Dakota. Albany, NY: Gemini Research.

This report presents the findings of a state-wide survey of gambling involvement and problem gambling among North Dakota adults. Telephone interviews of 1,527 adults used questionnaires incorporating the South Oaks Gambling Screen (SOGS-R). Results reported include prevalence, favorite gambling activities, reasons for gambling, gambling expenditures, and gambling-related problems. A prevalence rate of 2.0% is estimated for current problem and probable pathological gamblers. The corresponding lifetime rate is 3.5%. Problem and non-problem gamblers are compared in terms of participation, activities, expenditures, and reasons for gambling. Also reported are comparisons of gambling and problem gambling in different regions of North Dakota, as well as comparisons between North Dakota and other states.

Implications of the study for treatment are discussed in detail. The results of this study provide a benchmark for future assessments of gambling involvement and problem gambling in North Dakota, as well as a basis for policy making and planning services.

104 Volberg, R. A., & Steadman, H. J. (1989). Policy implications of prevalence estimates of pathological gambling. H. J. Shaffer, S. A. Stein, B. Gambino, & T. N. Cummings Compulsive Gambling: Theory, Research, and Practice (pp. 163-174). Lexington, Massachusetts/Toronto: Lexington Books.

This paper describes the results of the New York State Prevalence Survey, addresses methodological issues in prevalence research, and assesses the relevance of this research to various audiences. The New York State Prevalence Survey, a telephone survey of 1,000 state residents using the South Oaks Gambling Screen (SOGS), resulted in estimates of 2.8% and 1.4% for problem gamblers and probable pathological gamblers, respectively.

In response to criticism that these rates are overestimations due to false positives on the SOGS scale, the authors use sensitivity and specificity data gathered from pretests of the SOGS to evaluate the prevalence rates, resulting in a downward adjustment. The Cumulative Clinical Signs Methods (CCSM) is then evaluated as an alternative to the SOGS as a measure of pathological gambling, and the utility of using the SOGS and CCSM together is considered. Finally, the authors discuss the

importance that prevalence surveys of pathological gambling should have for a variety of audiences.

Treatment professionals and program administrators should find prevalence data useful to identify clients most in need of services and in tailoring their treatment approaches to a variety of clients. Legislators, regulators and administrators should use prevalence information to inform policy decisions, distribute funds appropriately, and argue for funding to support additional programs needed by pathological gamblers and their families.

105 Volberg, R. A., & Steadman, H. J. (1989). Prevalence estimates of pathological gambling in New Jersey and Maryland. American Journal of Psychiatry, 146(12), 1618-1619.

This study reports on the New Jersey and Maryland samples of a 5-state random telephone survey of problem and pathological gamblers. The purpose of the study is to determine whether problem and pathological gamblers, in comparison with a sample from New York State, are significantly different from those entering treatment programs. The South Oaks Gambling Screen (SOGS) was used in interviews with 1,750 subjects.

Prevalence rates for problem (New Jersey, 2.8%; Maryland, 2.4%) and pathological (New Jersey, 1.4%; Maryland, 1.5%) gambling were similar to the rates noted for New York State. The authors discuss methodological issues, including the large confidence intervals that are typical for rarely occurring phenomenon.

Significant differences were found in chi-square analysis for the combined problem and pathological gamblers (total sample; both states combined) in comparison with the total sample on gender, race, and education. Differences noted by income in the New York State sample were not found in the combined New Jersey-Maryland survey. Problem and probable pathological gamblers in the general population are more likely to be women than are pathological gamblers in treatment. The authors suggest that the gender and race differences may be attributable to the low enrolment of women and minority groups in Gamblers Anonymous, which is a primary referral source for treatment programs. The location of programs may also explain observed differences. The authors conclude with reservations about the generalizability of the study results, due to the characteristics of eastern seaboard states. They suggest that further research should explore problem and pathological gambling in geographically and demographically diverse regions, such as rural states.

106 Volberg, R. A., & Steadman, H. J. (1988). Refining prevalence estimates of pathological gambling. American Journal of Psychiatry, 145(4), 502-505.

This article reports the results of a state-wide study in New York that indicated significant differences between problem gamblers in the general population and pathological gamblers entering publicly funded treatment programs. Telephone interviews, using the South Oaks Gambling Screen (SOGS) were completed with 1,000 adults, including a small proportion (4.3%) in Spanish. The authors discuss the development of the SOGS and the method used in this study, including limitations in sampling design and the outcomes of research. Details of chi-square analyses are reported.

The prevalence estimate for pathological gambling is consistent with other American studies, although methodological differences among studies are noted. Socio-cultural researchers interested in patterns of help-seeking will find useful the data provided concerning association of socio-demographic variables (e.g., ethnicity, age) and problem or probable pathological gambling, and use of treatment services. The authors conclude that problem gamblers in the general population differ substantially from pathological gamblers in treatment. Moreover, they suggest that the scope

of research on pathological gambling be expanded to consider variation among pathological gamblers by ethnicity, age, and gender.

107 Volberg, R. A., & Stuefen, R. M. (1994). Gambling and problem gambling in South Dakota: A follow-up study. North Hampton, MA: Gemini Research.

This report presents the results of a follow-up survey of gambling and problem gambling in South Dakota undertaken to assist with planning for future gaming opportunities and designing services for problem and pathological gamblers. A total of 1,767 South Dakota residents were interviewed using a questionnaire based on the South Oaks Gambling Screen (SOGS) about the types of gambling they have tried, amounts of money they spend on gambling, and about problem-related gambling behaviors. Results are compared to an earlier South Dakota gambling study (Volberg & Stuefen, 1991). The lifetime prevalence rate of problem gambling in the present study was found to be 1.4%, and the lifetime rate of pathological gambling was 0.9%.

While these rates are slightly lower than those found in 1991, the decrease is not statistically significant. For most types of gambling, overall participation and estimates of spending declined from 1991 to 1993. The report concludes with a discussion of treatment services in South Dakota and directions for the future. This study represents the first follow-up survey of gambling and problem gambling in the United States.

108 Wallisch, L. S. (1993). 1992 Texas survey of adult gambling behavior. Austin, Texas: Texas Commission on Alcohol and Drug Abuse.

This study examines gambling behavior of Texas adults based on a telephone survey of over 6,000 adult Texas residents. A modified version of the South Oaks Gambling Screen (SOGS) was used to assess problem and pathological gambling. A profile of gambling among Texas adults includes prevalence and recency of gambling, reasons for gambling, gambling preferences, age at first bet, gambling among family and friends, illegal activities, and comparison to other states. Also examined are gambling in subgroups defined by age, gender, race, substance use, and gambling preference.

Results are also presented on problem and pathological gambling; gambling expenditures; substance abuse and gambling; mental health and gambling; and multiple addictions. The report concludes with a discussion of treatment needs in Texas.

109 Wallisch, L. S. (1996). Gambling in Texas: 1995 surveys of adult and adolescent gambling behavior. Austin, Texas: Texas Commission on Alcohol and Drug Abuse.

Based on telephone surveys of adult and adolescent residents of Texas, this study assesses gambling behavior in Texas and compares the results to an earlier (Wallisch, 1992) study. Results from the adult survey include prevalence; gambling expenditures; problem and pathological gambling; substance use and gambling; gambling and mental health; dual and multiple problems; and treatment for gambling problems. Included in the findings from the adolescent survey are prevalence; teen gambling on the lottery; prevalence of problem gambling; correlates of problem gambling (e.g. associated emotional experiences, parental knowledge, behavior of friends, personal and family happiness); and substance use and gambling. Results from the adult and adolescent surveys are compared to one another and to results from the 1992 survey. Implications for treatment and prevention are discussed.

- 110 Walters, G. D. (1997). Problem gambling in a federal prison population: Results from the South Oaks gambling screen. Journal of Gambling Studies, 13(1), 7-24.**

The purpose of this study was threefold: to ascertain the frequency of gambling involvement and the prevalence of problem gambling in a sample of federal prison inmates; to discover whether problem gambling is better conceptualized as a continuum or as a dichotomy; and to examine the rate and nature of spontaneous remission from problem gambling. Three hundred and sixty-three medium security federal prison inmates were interviewed using the South Oaks Gambling Screen (SOGS), with 5.2% of the sample achieving SOGS scores greater than 4 and another 7.4% attaining a score of 3 or 4, traditional markers of pathological gambling and problem gambling, respectively.

Attempts were made to evaluate the relative accuracy of the continuum and dichotomy models of problem gambling by contrasting three groups of subjects (SOGS < 3, SOGS = 3 or 4, SOGS > 4) on a series of gambling-related measures and comparing the relative ability of the SOGS and a dichotomized version of the SOGS to account for residual variance in these same gambling-related measures. Results were consistent with the view that problem gambling embodies features of both a continuum and dichotomy. When spontaneous remission was examined, it was found that nearly half the subjects had desisted from problem gambling on their own, although self-remitters displayed less severe and extensive patterns of problem gambling than non-remitting subjects.

Conclusions from the study were that gambling is a problem for a certain portion of the incarcerated offender population, that it may follow both a dichotomous and continuous pattern, that spontaneous remission is a reasonably common event among less serious gamblers, and that to intervene with this group requires attention to both the gambling and related difficulties.

- 111 Westphal, J. R., & Rush, J. (1996). Pathological gambling in Louisiana: An epidemiological perspective. Journal of the Louisiana State Medical Society, 148(8), 353-358.**

Results from Volberg's (1995) study of problem wagering in Louisiana indicate that gambling disorders (including problem and pathological gambling) are a significant public health problem in Louisiana. Findings from telephone interviews using the South Oaks Gambling Screen (SOGS) on a random sample of 1,818 Louisiana residents over age 18 indicate that 4.8% of adults over the age of 21 have gambling disorders, compared to 14.4% of 18 to 21 year olds. Geographic distribution of gambling disorders shows equal statewide penetrance. Pathological gamblers are demographically distinct, more likely to be male, under 30, non-Caucasian, unmarried, and less likely to have graduated from high school than non-problem gamblers. Two demographic clusters were noted: a younger (average age in 20's) male group who primarily wager on video poker, and an older, over 30 group who primarily wager on horse racing.

The authors note that survey information on adolescent incidence and prevalence will be critical to plan prevention and early intervention programs for pathological gamblers in Louisiana.

Volberg, R.A. (1995). Wagering and problem wagering in Louisiana: A report to the Louisiana Economic Development and Gaming Corporation. Roaring Spring, PA: Gemini Research.

- 112 Westphal, J. R., Rush, J. A., Stevens, L., & Johnson, L. J. (2000). Gambling behavior of Louisiana students in grades 6 through 12. Psychiatric Services, 51(1), 96-99.**

The prevalence of problem and pathological gambling behavior, the average age of onset of gambling behavior, and the co-occurrence of gambling disorder with substance use were studied in the Louisiana student population grades 6 through 12. A sample of 12,066 students in Louisiana schools was surveyed about gambling using the South Oaks Gambling Screen—Revised for

Adolescents (SOGS-RA). It was found that fourteen percent of students never gambled, 70.1% gambled without problems, 10.1% indicated problem gambling in the past year, and 5.8% indicated pathological gambling behavior in the past year. Weekly or more frequent lottery play was reported by 16.5%. The average age of onset of gambling behavior was 11.2 years. Fifty-nine percent of the students with problem and pathological gambling behavior reported frequent alcohol and illicit drug use. A significant minority of Louisiana students in grades 6 through 12 (15.9%) acknowledged gambling-related symptoms and life problems.

The association of problem and pathological gambling with use of alcohol, tobacco, and marijuana provides preliminary support for the inclusion of gambling among other adolescent risk behaviors.

113 Westphal, J. R., Rush, J. A., Stevens, L., & Johnson, L. J. (1998). Gambling behavior of adolescents in residential placement in Northwest Louisiana. Southern Medical Journal, 91(11), 1038-1041.

This study compares past-year problem and pathological gambling prevalence among adolescents in residential placement with adolescents in the general community. Also examined were age of onset of gambling behavior in relation to the onset of alcohol, tobacco, and illicit drug use, as well as associations between gambling disorders and use of alcohol, tobacco, and other drugs. Gambling behavior in 135 adolescents in residential placement in northwestern Louisiana was assessed using the South Oaks Gambling Screen-Revised for Adolescents (SOGS-RA).

It was found that during the past year, 21% of these adolescents reported level 2 or problem gambling, and 38% reported level 3 or pathological gambling. Chi-square tests indicated a statistically significant ($p < .02$) association between gambling disorders and frequent use of alcohol and illicit drugs. This result lends support to the Adolescent Problem Behavior Syndrome Model, which hypothesizes clustering of high-risk behaviors. The first drink of alcohol, the first cigarette, and the first experience with gambling occurred on average at 11 years of age in the residential sample. The first use of marijuana and the first episode of alcohol intoxication occurring a year later, offering support for the Gateway Addiction Model. Compared to rates found in community adolescent surveys, the rate of problem gambling in the residential survey exceeded the upper extreme of the adolescent community sample range, and the pathological gambling rate was approximately six times the reported community prevalence rate for adolescents.

The authors caution that conclusions must be considered tentative because the study was limited to a single geographic location where gambling opportunities and advertising abound, and they call for more studies of adolescent treatment populations to confirm the elevated rates found here. Further, more community studies are needed to confirm ages at onset. Finally, it is suggested that residential placement sites should be considered as pilot sites when developing early intervention programs for gambling disorders.

114 Wiebe, J. (1999). Manitoba youth gambling prevalence study. Manitoba: Addictions Foundation of Manitoba.

The prevalence of gambling and gambling-related problems among Manitoba youth were examined through a telephone survey of 1,000 youth between the ages of 12 and 17. The survey questionnaire explored demographic, social and familial dimensions of gambling and included the South Oaks Gambling Screen Revised Adolescent (SOGS-RA). A copy of the questionnaire is appended.

Results are presented and discussed in four broad areas: 1) gambling levels and consequences (gambling prevalence, characteristics of problem gambling, adverse consequences, help-seeking

behaviors); 2) gambling patterns (most common gambling activities, gambling places and companions, reasons for gambling, and amount of time and money spent on gambling); 3) gambling attitudes and beliefs (importance of gambling as an activity, effects of skill and previous experience on chances of winning); and 4) exploration of correlates, such as relationships between demographic variables and levels of gambling involvement, emotional & social factors, age of onset, risk-taking behaviors, and parental gambling practices. Results showed that 78% of respondents had gambled in the past year. Of the total sample, 8% were classified as at-risk for problems and 3% were classified as problem gamblers.

This study represents a first step in raising understanding of the nature of youth gambling in Manitoba, and providing the baseline information needed to monitor gambling patterns in the future. A summary report is available.

115 Winters, K.C., Bengston, P., Dorr, D., & Stinchfield, R. (1998). Prevalence and risk factors of problem gambling among college students. Psychology of Addictive Behaviors, 12(2), 127-135.

This paper reports on a survey of gambling among college students from two university campuses in Minnesota. The authors hypothesize that college years may be an unusually risky period for development of gambling problems. Students were surveyed (N = 1,361) using a college gambling survey developed for this study including demographic, school performance and drug use frequency items, the South Oaks Gambling Screen (SOGS), and questions about money lost while gambling, peer gambling, and personal finances and spending. The majority of students had gambled in the past year (87%), with most reporting infrequent levels of involvement. Few problems as a consequence of gambling were reported. The findings of this study are similar to previous gambling surveys, and confirm that problem gambling among college students is associated with a core group of variables and emphasizes the role of parental gambling history as a prominent risk factor. The authors interpret their results in light of statistical considerations, cautioning against over-interpretation of the differences observed because of standard errors. Further, the authors situate their findings in current understanding and debate concerning human development and addictive behaviours during later adolescence and early adulthood. Weaknesses and limitations of the study design are discussed.

The authors summarize the literature on prevalence of pathological and probable pathological gambling in the United States, as well as the literature on addictive behaviours among college students, noting that few studies have focused on college students despite the acknowledged high-risk status of college students for a wide range of risky behaviours such as the use of psychoactive drugs and the increased vulnerability associated with gambling during early adulthood. The authors note also that virtually all prevalence studies in the US base their findings on the same measure (SOGS), thus facilitating cross-study comparison. Further, the authors suggest that additional monitoring of college students is needed because of rapidly changing trends in the social and policy environment surrounding gambling behaviours.

The detailed descriptions of objectives, methodology, analyses, and results (including pertinent statistics) provide a clear picture of the study from conceptual framework to analysis and interpretation of the data. Chi-square analyses show significant differences by gender in patterns of involvement and probable pathological gambling. Odds ratio analysis was used to examine the relationship between subject characteristics and probable pathological gambling status. Details of the methods used to interpret the results of odds ratio analysis are provided. The largest odds ratio was associated with parental history of gambling. Stepwise logistic regression was used to evaluate covariance of identified risk variables; non-redundant risk variables are described, including

positive parental history, being male, frequent use of illicit drugs, and \$200+ disposable monthly income.

The authors conclude with suggestions that future research should include family studies and examine broader environmental factors such as peer influences.

116 Wynne, H. J., Smith, G. J., & Jacobs, D. F. (1996). Adolescent gambling and problem gambling in Alberta: Final report. Edmonton, AB: AADAC.

This study was carried out to determine the prevalence of gambling and problem gambling among Alberta adolescents, in order to provide information to assist in the design of responsive programs for this special population. A total of 972 adolescent Albertans aged 12-17 were surveyed by telephone using the Alberta Adolescent Gambling Survey questionnaire (copy appended to the report), which incorporates a modified version of the South Oaks Gambling Screen (SOGS-R). A second phase of the study involved in-depth field interviews with 56 adolescents (29 non-problem gamblers and 27 problem gamblers) selected from those surveyed by telephone. It was found that 67% of adolescents gamble, while 8% were identified as problem gamblers and 15% may be at risk for developing a gambling problem.

In addition to prevalence, results describe characteristics of adolescent gamblers, behavior of adolescent gamblers, general health and substance use, and factors differentiating problem and non-problem adolescent gamblers. The report concludes with a discussion of current initiatives in regard to prevention, education, treatment and research programs, and recommendations for future action to meet the challenge of adolescent gambling. A summary report, highlighting the main findings, is available.

117 Wynne, H. J., Smith, G. J., & Volberg, R. A. (1994). Gambling and problem gambling in Alberta: Final report. Edmonton, AB: Wynne Resources Ltd. prepared for Alberta Lotteries and Gaming.

The purpose of this study was to investigate the nature, extent, and implications of problem gambling in the adult population of Alberta. In addition to an accurate estimate of prevalence, the study was designed to determine social and financial impacts created by gaming activities. A two-phase design was used, incorporating telephone surveys using an instrument incorporating the South Oaks Gambling Screen SOGS-R, as well as face-to-face interviews with SOGS-classified frequent, problem, and probable pathological gamblers. Copies of the research instruments are appended.

A general profile of gambling in Alberta is presented, including demographic characteristics; favorite gaming activities; frequency of gambling; reasons for gambling; and gambling expenditures. Problem gambling in Alberta is also profiled, including prevalence (current rates for problem and probable pathological gambling estimated at 4.0% and 1.4%, respectively) and comparison to non-problem gamblers in terms of demographic factors; preferred activities; gambling expenditures; age at which started gambling; self-perception of gambling problem; reasons for gambling; and personal, interpersonal, and financial costs of gambling. Results related specifically to problem gamblers included gambling behavior, family influence, development of gambling habits, external influences, gambling style, social impacts, financial impacts, and impacts on personal wellness. Implications and future considerations are discussed in the context of social and financial factors.

This study provided valuable baseline data on prevalence of problem gambling among Alberta adults. The addition of a qualitative phase of data gathering marks an improvement in the approach to gambling prevalence research.

A summary report, highlighting the main findings, is available.

- 118 Wynne Resources, & AADAC. (1998). Adult gambling and problem gambling in Alberta, 1998. Edmonton, AB: AADAC.**

This report assesses current characteristics and scope of adult gambling and problem gambling in Alberta. Part I presents highlights, implications, and recommendations of the study, while Part II discusses the research design, methodology, results, conclusions, and comparisons to the results of the 1994 study. A province-wide telephone survey of 1,821 adult Albertans was conducted using the Alberta Adult Gambling Survey instrument, which incorporates the South Oaks Gambling Screen (SOGS-R). A copy of the questionnaire is included in the appendix.

Results presented include a profile of adult gamblers; their gambling activities and behavior; their use of alcohol, tobacco and other drugs; changes in gambler profile, activities and behavior since 1994; and problem gambling and gambling prevalence rates. Major findings include a general trend away from gambling, and a significant decline in problem gamblers. Directions for further research are discussed, and recommendations outlined for gambling education, prevention, treatment, and training. A summary report, highlighting the main findings, is available.

- 119 Zeigler, D. (1995). "Problem gambling": Network project final report - 1995/1996. AB: Network Project.**

Reports the results of the Network Project, a project to provide information on the prevalence of adult gambling in the Lethbridge area. Problem gambling was assessed using the SOGS-R in a telephone sample of 70 people from the general population, as well as in a sample of individuals in 12-step programs. Issues such as VLT use, dual addictions, prevention, and rehabilitation are discussed.

Recommendations focus on community actions to deal with problem gambling, including the establishment of a community referral system, development of partnerships, and prevention strategies.

- 264 Zitzow, D. (1992). Incidence and comparative study of compulsive gambling behaviors between American Indian and non-Indians within and near a Northern Plains reservation. Bemidji, MN: Indian Health Service, Bemidji Area Office.**

This report details the results of three separate studies comparing gambling behaviours in Ojibway and non-Indian populations. The studies were conducted within or near a northern plains reservation in Minnesota and included an adolescent school survey (12-19 years), a random telephone survey of adults (20-86 years), and a systematic sample of active adult gamblers at various gambling sites.

The report summarizes the conceptual framework, methods, and results (frequency distributions, correlation and factor analyses for each response item) for each study in detail. Copies of the questionnaires used to conduct the interviews are provided. Limitations of the studies, such as inability to make sub-item comparisons because of small sample sizes and over-representation of females, are discussed and the reader is cautioned against generalization of the findings. Moreover,

the author suggests that the adult active gambling sample remains theoretically biased, despite representative sampling.

The results of these studies indicate that gambling involvement, risk factors for problem gambling, and severity of problems related to gambling were higher among Indian adolescents than their non-Indian peers. Accessibility and availability appear to be significant determinants of adult gambling activities. No significant differences were noted in either participation rates in gambling or in problematic or compulsive gambling characteristics in comparison of Indian and non-Indian adults. Gender differences in gambling patterns were noted in the study of active adult gamblers, but not in overall problems or pathology. Significant differences between Indian and non-Indian active gamblers were noted in analyses of problematic and pathological gambling behaviours. The author suggests that socio-economic factors such as poverty and alienation, and cultural beliefs and values concerning fate, control, materialism, and gratification of need should be examined as explanatory factors.

On the basis of this research, the author suggests that the recent introduction of large stakes casino gambling may not be the most significant event in modeling gambling within reservation communities. This research indicates that the time exposure to gambling suggested by research in the 1970s may best explain current patterns, and the most significant events in promoting problem gambling may have occurred in the previous 15 years with the onset of bingo, pull tabs, scratch cards, and lotteries. The author concludes with specific recommendations for further research.

b) Prevalence - Secondary

120 Addictions Foundation of Manitoba, AADAC, & Saskatchewan Health. (2000). Proceedings of the interprovincial think tank on youth and gambling. Edmonton, AB: AADAC.

The Interprovincial Think Tank on Youth and Gambling was a partnership project of the Addictions Foundation of Manitoba (AFM), Saskatchewan Health and the Alberta Alcohol and Drug Abuse Commission (AADAC). Its main purpose was to provide people working with youth and youth gamblers with the opportunity to discuss and share thoughts and ideas regarding gambling prevalence, resilience, and perceptions among young people.

This publication presents the proceedings of the Think Tank, which included presentation of three specially commissioned research papers, discussions, and working groups. Topics of the papers are: issues related to the prevalence of problem gambling among youth; the relevance of resilience to adolescent gambling and implications for intervention; and a focus group study of the perceptions of youth gambling and the AADAC Youth Gambling Screen. The working groups challenged participants to translate discussion into practical prevention and intervention ideas and strategies, and the final section summarizes issues identified and discussed in those groups.

Information generated by the Think Tank should be useful as a guide for people at the community level as they collaboratively develop plans to address youth and problem gambling issues.

121 Alberta Lotteries and Gaming, & AADAC. (1994). Addressing problem gambling in Alberta. January, 1994: Alberta Lotteries and Gaming/AADAC.

This paper outlines the initial actions planned by the Government of Alberta to address the issue of problem gambling in Alberta, in response to the findings of the “Gambling and Problem Gambling in Alberta” (Wynne Resources Ltd., 1994) study. Current prevalence of gambling is examined, and profiles of gambling and problem gambling in Alberta are presented. The government’s approach to problem gambling is outlined from a public policy perspective. Principles guiding Alberta’s approach to services include a commitment to community-based solutions, shared responsibility, collaborative partnerships, and the establishment of a range of integrated, cost-effective services.

An action plan discusses goals, areas of responsibility, and provision of services, as well as strategies for education and prevention, treatment, training, and research and evaluation. Finally, a plan is presented for the implementation of services for problem gamblers in Alberta.

122 Azmier, J., & Smith, G. (1998). The state of gambling in Canada: An interprovincial roadmap of gambling and its impact. Calgary, AB: Canada West Foundation.

Due to provincial autonomy, gambling in Canada is described in this report as a patchwork of inconsistencies between provinces. This report represents an attempt to sort out gambling policy in Canada and to summarize the latest research and public consultation on the nature and impact of gambling.

Following a review of recent research findings, a meta-analysis of gambling research in Canada is presented. Detailed information on the following is provided in tabular form for each province: forms of gambling available; net gambling revenues to governments and charities; charitable revenues; rates and treatment of problem gambling; and regulation and policy changes. Charts present data on current provincial gambling revenues by province and type of game, change in net gambling revenue by type of game, percentage of provincial government revenues derived from gambling, and provincial gambling revenue relative to adult population. Recent public

consultations are described for Alberta, Manitoba and Ontario, and a report card on public accountability is presented for each province.

A supplement to the report focuses on video lottery terminals, presenting an overview of VLT-related research, statistics on VLT access and availability by province, a discussion of VLT characteristics that contribute to their addictive potency, and a summary of recent citizen action regarding VLTs.

123 Becona, E. (1996). Prevalence surveys of problem and pathological gambling in Europe: The cases of Germany, Holland, and Spain. The Journal of Gambling Studies, 12(2), 179-192.

This paper examines social and economic repercussions of the widespread and rapid legalization of gambling in three European countries: Germany, Holland and Spain. Also examined and compared are processes of gambling legalization, gambling involvement as measured by revenues and spending, and research on gambling and problem gambling.

Although there are some differences, on the whole similar consequences of legalized gambling are seen across jurisdictions. In all three countries, legalized gambling has become an important economic activity, with gambling expenditures increasing rapidly over the last two decades. Increased participation in gambling in the general population is evident in all three countries, and games of chance have gained broad social acceptance. Authorities have generally underestimated the social costs of legalized gambling, with increases in pathological gambling occurring substantially beyond expected levels. In all three countries, at least half of pathological gamblers are under the age of 30. It is suggested that this may be due to greater free time and disposable income among individuals in this age range, as well as greater social acceptance due to their lifetime exposure to legal gambling. Research from Holland and Spain suggests that slot machines and Lotto cause the greatest difficulties among individuals with gambling problems. In the face of media and research reports pointing to the growth of gambling-related problems, some legal changes have been made in the form of stricter regulations that make access to gambling more difficult. On the whole, however, governments remain reluctant to assume responsibility for addressing the issue of pathological gambling, and self-help is the most common form of assistance available to problem gamblers. The author concludes that greater efforts at regulation and control as well as efforts to mitigate the negative impacts of legalized gambling in Europe are badly needed.

124 Becona, E., Labrador, F., Echeburua, E., Ochoa, E., & Vallejo, M. A. (1995). Slot machine gambling in Spain: An important and new social problem. Journal of Gambling Studies, 11(3), 265-286.

The nature and prevalence of slot machine gambling in Spain is reviewed and evaluated as a social problem. Following a description of various types of slot machines, annual expenditures on this form of gambling are reported and relevant Spanish legislation governing the machines is reviewed. Also discussed are characteristics of slot machine gamblers, slot machine gaming by adolescents, general surveys on gambling and studies on the prevalence of pathological gambling in Spain.

The high prevalence of pathological gambling, and slot machine gambling in particular, is attributed to the wide variety of games available, easy access, permissive laws, government support, intense advertising, and social acceptance. Existing therapeutic intervention programs are described and recommendations offered for new approaches to education, prevention, and treatment for pathological gamblers.

- 125 **Betbeze, J. P. (1987). Les jeux populaires français et leurs mecanismes de diffusion. Ethnologie Française, 17(2/3), 189-197.**

This article, which reports on gambling in France, describes different forms of gambling activity and the impact of positive upturns in the national economy. Different forms of gambling are examined, such as sports lotteries, casinos, national lotteries, and para-mutual betting. Researchers interested in international experiences with gambling will find this article informative in its description of the structure and availability of gambling, as well as trends in gambling activities in France. Variation amongst different forms of gambling are noted; the general rules underlying various forms are the same, however. The author estimates that at least half the population is involved in gambling on a regular basis, but no reference is given for the source of this information. **Note:** The article is written in French.

- 126 **Culleton, R. P. (1989). The prevalence rates of pathological gambling: A look at methods. Journal of Gambling Behavior, 5(1), 22-41.**

This paper examines methods that underlie three different estimates of the prevalence rate of pathological gambling and critiques them according to epidemiological procedure. The author suggests the utility of prevalence and incidence rate research is threatened by a lack of consensus about proper epidemiological procedures and confusion about the distinction between a “probable” and “potential” pathological gambler. The author reviews gambling policy and treatment for gambling problems, concluding that reliable knowledge of prevalence and incidence rates would result in more rational policy and use of gambling revenues to support treatment.

Two 1975 studies, a national survey conducted by the Institute for Social Research (ISR) and a survey of the state of Nevada, used discriminant function analysis coupled with subjective inspection of cases in the “at risk”. The author of this paper surveyed Delaware Valley and state of Ohio residents, using the cumulative clinical signs method (CCSM). The third approach used a formal screening device in a survey of residents of New York state. The method used, including the sampling frame and sample selection, is examined and the methodology for each study is examined for specificity and sensitivity of the statistical tests employed. In the ISR study, for example, the prevalence rate of probable and potential pathological gamblers was estimated at 3.1%; the author suggests that the prevalence rate was understated by 1.17%, however, and that a more precise estimate would be 4.27%. Moreover, the discriminant variables used in the ISR screen lacked exclusivity, and would not exclude social gamblers or even non-gamblers. Thus, the validity of the ISR results is questionable. Similarly, the positive predictive value, or efficiency, of the screening test (South Oaks Gambling Screen; SOGS) used in the New York state survey is questioned. The author critiques use of the SOGS for the purpose of establishing a prevalence rate, as this is reversal of standard epidemiological procedure. By contrast, the cumulative clinical signs method is suggested as a more efficient and independent estimate of the prevalence rate in the general population, although its validity relies upon the validity of underlying control variables.

This paper presents a critical perspective on estimation of prevalence rates from an epidemiological perspective, and proposes an alternative method to the SOGS for more precise identification and differentiation of potential pathological gamblers and probable pathological gamblers in the adult population. Using the CCSM method, the prevalence rate in Ohio is estimated at 2.41% of the adult population; the confidence interval is ± 1 , however. The author concludes that a national prevalence rate study using CCSM is required to provide a new national standard against which regional or state prevalence rates may be reliably compared.

- 127 Gotestam, K. G. (1993). Gambling in Norway: An obscure activity? Psychology of Addictive Behaviors, 7(1), 66-68.**

This brief paper reviews the state of knowledge of gambling and gambling behavior in Norway, where gambling activities are both socially sanctioned and government sponsored. The author found that data regarding incidence and prevalence are very difficult to obtain, and concluded that the government has no interest in obtaining such information, although its profits from gambling activities are sizeable. It is estimated that as much as 90% of the adult population engages in some form of gambling from time to time. Based on funds expended for various gambling activities over a five-year period, it is estimated that gambling has increased 50% during this time. Little is known about the prevalence of problem gambling and even less is known about the prevalence of pathological gambling. There are virtually no treatment options for people with gambling problems, and the development of treatment procedures for problem gamblers is in its infancy. Clearly, research on gambling, problem gambling and effect interventions is urgently needed.

- 128 Grun, L., & McKeigue, M. (2000). Prevalence of excessive gambling before and after introduction of a national lottery in the United Kingdom: Another example of the single distribution theory. Addiction, 95(6), 959-966.**

This paper discusses data from the Family Expenditure Survey conducted in 1994 in the United Kingdom in light of the single distribution theory advocated by Rose, where the prevalence of a deviant condition such as excessive alcohol consumption depends on the average level of the corresponding characteristics in the population. The objective of the current analysis is to ascertain whether the single distribution theory applies to gambling behaviour. Data were collected before and after introduction of a national lottery and cross-sectional analyses were performed. The mean or median household expenditure on gambling for each region predicted the prevalence of excessive gambling in each region. The authors provide details of the cross-sectional procedures used in the analyses.

Although challenges to the single distribution theory as applied to alcohol consumption are mentioned in this paper, the cogent arguments provided by Duffy and Single in their critiques of the single distribution theory as applied to alcohol consumption, to name a few of the critics of this theory, are not discussed. Implications of the single distribution theory for public health measures applied to gambling are proposed.

- 129 Ladouceur, R. (1996). The prevalence of pathological gambling in Canada. Journal of Gambling Studies, 12(2), 129-142.**

Ladouceur reviews a number of surveys on the prevalence of gambling behaviours (six focus on adults, three on adolescents, and one on primary school children) conducted between 1986 and 1994 in six Canadian provinces (Quebec, New Brunswick, Nova Scotia, Ontario, Alberta, and Saskatchewan). Data from Manitoba and British Columbia are not included; although Ladouceur remarks that the prevalence rate estimates in these provinces are the same as in other regions, neither the estimates nor citations are provided. The studies reported in detail focus primarily on problem and pathological gambling ascertained through application of the South Oaks Gambling Screen (SOGS) or a variant of that instrument. Other information of interest to the more general reader is presented, however, concerning regional variation in gambling activity: demographics by age and gender (for some regions); relative proportions of problem and pathological gambling; profiles of "typical" problem gamblers; and the most popular forms of gaming activity. Ladouceur implies that rates of frequent gambling (range from 93% in Alberta to 67% in Ontario), and problem and pathological gambling (combined estimates range from 8.6% to 2.7%), are high in comparison to American data, but the latter are not provided for comparison. Standard errors for the reported

rates are not included in the information reported for each study, so the astute reader will need to refer to the original articles for this information.

Each study is described clearly and in detail, with attention to similarities and differences in methodologies, as well as flaws in methodology or low response rates, that limit the comparability, reliability, or validity of estimates. Ladouceur's assessment of the qualitative Phase II follow-up to the Alberta gambling study concentrates only on low response rates and limited "scope" of conclusions, however, although qualitative research is intended to be highly contextual and rich in detail rather than generalizable. Ladouceur neither discusses insights gained through this second phase nor comments on the comparability of themes to similar findings elsewhere, such as a study in New Zealand that used the same procedure.

This review provides valuable advice and cautions on methodological issues. Moreover, Ladouceur highlights areas for further investigation in gambling studies: trend studies to identify changes in the nature and frequency of gambling activity following introduction or spread of casinos and other forms of gambling; systematic investigations on adolescents and primary school children since most "typical" problem gambling among young adult men has its roots in activities initiated at younger ages; research on the psychology of gambling and treatment of pathological gamblers. Finally, Ladouceur delivers an urgent plea to provincial and federal authorities to invest in research and treatment, in light of the data provided.

130 Lejoyeux, M., Mc Loughlin, M., & Ades, J. (2000). Epidemiology of behavioral dependence: Literature review and results of original studies. *European Psychiatry, 15*(2), 129-134.

In this study, pathological gambling is regarded as an example of a behavioral dependence, a condition characterized by the repetitive occurrence of impulsive and uncontrolled behaviors. Following an extensive review of relevant literature on behavioral dependence, results are described from an epidemiological study on behavioral dependence (i.e., pathological gambling, intermittent explosive disorder, kleptomania, compulsive buying, and trichotillomania) among alcohol-dependent patients. Of 79 adult patients, seven were found to be pathological gamblers. Patients with co-occurring pathological gambling tended to be male and were younger at the onset of alcohol dependence, had a significantly longer duration of alcohol dependence, and had a higher mean number of detoxification experiences compared to patients without behavioral dependence.

General conclusions from the study are that behavioral dependence is often associated with depression and/or alcohol dependence, and that levels of sensation-seeking, disinhibition and experience-seeking are higher in alcoholic or depressed patients who also present behavioral dependence.

131 Lesieur, H. R. (1995). Black and white college students equally bitten by the gambling bug. *Journal of Blacks in Higher Education, 0*(8), 83.

A review of surveys to date shows non-whites have been overrepresented among "problem pathological gamblers." A recent survey conducted by the author and several colleagues of 1700 college students found that 5.7% of students surveyed were probable pathological gamblers. In a data reanalysis of the survey, 6 percent of respondents were black and of these 4.5 percent were found to be probable pathological gamblers as opposed to 5.5% of nonblack students- a difference that was not statistically different. Also, black students were as likely to gamble and almost as likely to gamble weekly as nonblack students. Race appeared to be important in determining the form of gambling in which students participate.

The relatively small numbers of black students in the sample means that results need to be interpreted with caution.

132 Nadler, L. B. (1985). The epidemiology of pathological gambling: Critique of existing research and alternative strategies. Journal of Gambling Behavior, 1(1), 35-50.

This paper critiques the methodology used to estimate prevalence and incidence of pathological gambling in a widely publicized and frequently cited Michigan study published in 1976 and 1979. The author provides a detailed analysis of that study's sampling frame, definitional criteria, measurement tools, data collection procedures, and statistically based conclusions.

Compelling reasons for questioning the reliability and validity of prevalence estimates cited in the Michigan study are provided, including methodological approaches, temporal social and clinical changes, and comparative national level data. The author discusses methodological issues generally applicable to pathological gambling research: data accessibility, privacy invasion and ethical considerations, denial and related reactive effects, interviewer/experimenter naiveté, and the appropriateness of data collection methods.

He concludes with a plea for researchers to pay better attention to key methodological issues, pursue a greater understanding of the subject that they are investigating, and develop awareness of and responsiveness to the individuals who are the subjects of research.

133 National Council of Welfare. (1996). Gambling in Canada: A report by the National Council of Welfare. Ottawa, ON: Ministry of Supply and Services Canada.

The National Council of Welfare chose to investigate gambling because of concerns about its adverse effects on Canadians, especially low-income Canadians. Based on available statistics and research, the report documents gambling's current status as a multi-billion-dollar industry and its importance as a source of revenue for provincial and territorial governments. It also surveys available research on prevalence and characteristics of problem gambling, as well as its social and financial impacts. Demographics and other characteristics of problem gamblers are summarized and problem gambling among women, youth, and Aboriginal people is discussed.

The report concludes with recommendations in four main areas: further restrictions on certain types of gambling; more help for problem gamblers; full disclosure of the extent and risks of gambling; and more research on gambling and its adverse effects.

086 National Gambling Impact Study Commission. (1999). The National Gambling Impact Study Commission. Washington, DC: National Gambling Impact Study Commission.

The National Gambling Impact Study Commission was charged with conducting a comprehensive legal and factual study of the social and economic implications of gambling in the United States. The Commission made site visits, commissioned original research, conducted literature surveys, and solicited and received input from a broad array of individuals and organizations. In addition, it held a series of hearings around the country to receive testimony from experts and members of the public.

This report presents the principal findings of these efforts, as well as recommendations intended to provide a coherent framework for action. Following an overview of gambling in the United States, the report presents findings and recommendations in the following areas: gambling regulation; problem and pathological gambling; internet gambling; Native American tribal gambling; and gambling's impact on people and places.

The report concludes with recommendations for future research, including a proposal that gambling components be added where appropriate to existing federal research in the substance abuse and other mental health fields. Appendices include statements by Commission members, text of the National Gambling Impact Study Commission Act, list of references, information sources and resources on gambling, glossary, and catalog of gambling legislation.

- 134 Shaffer, H. J., & Hall, M. N. (1996). Estimating the prevalence of adolescent gambling disorders: A quantitative synthesis and guide toward standard gambling nomenclature. Journal of Gambling Studies, 12(2), 193-214.**

The prevalence of adolescent gambling problems in the United States is examined in this review of published and unpublished studies, which attempts to facilitate inter-study comparisons among estimates of gambling prevalence. Nine non-duplicative studies from five different regions of the USA and Canada are included, comprising data collected from more than 7,700 adolescents aged 13-20 years. Conceptual and methodological differences, including diverse classification methods and data reporting strategies, are compared among these studies and a meta-analysis is employed to synthesize prevalence estimates. Within a 95% confidence interval, between 9.9 and 14.2% of adolescents are estimated to be at risk of developing or relapsing to serious gambling problems. Between 4.4 and 7.4% of adolescents meet the criteria for seriously adverse compulsive or pathological patterns of gambling activity. The authors suggest a generic multi-level classification scheme to reconcile conceptual and methodological differences among the studies that will facilitate inter-study comparisons. They propose a general data reporting system as a framework for future research.

- 135 Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. American Journal of Public Health, 89(9), 1369-1376.**

This study developed prevalence estimates of gambling-related disorders in the United States and Canada, identified differences in prevalence among population segments, and identified changes in prevalence over the past 20 years. A meta-analytic strategy was used to synthesize estimates from 119 prevalence studies.

Prevalence estimates among samples of adolescents were significantly higher than estimates among adult samples for both clinical and subclinical measures of disordered gambling within both lifetime and past-year time frames. Among adults, prevalence estimates of disordered gambling have increased significantly during the past 20 years. Membership in youth, treatment, or prison population segments was found to be significantly associated with gambling-related disorders. It is suggested that understanding subclinical gamblers provides considerable potential for lowering the social and public health costs associated with gambling disorders.

- 136 van Es, R. (2000). Identifying problem and compulsive gamblers. Canadian Family Physician, 46, 1323-1331.**

This article presents a meta-analysis of current research on the prevalence, identification, and treatment of problem and compulsive gamblers. Canadian studies indicate that about 5% of those who gamble are problem gamblers and about 1% are compulsive gamblers. Successful treatment of problem and compulsive gambling continues to be a challenge. Many therapeutic strategies have been explored, ranging from cognitive, behavioral, and pharmacologic approaches to group, residential, and self-change therapies. Although cognitive therapy has been the favored approach, a combination of several therapeutic approaches is advocated.

It is concluded that problem and compulsive gambling can present a significant health threat, and that it harms both gamblers and their families and friends. Aware and informed physicians can play an important role in the difficult process of identifying, acknowledging, and remediating problem and compulsive gambling.

137 Volberg, R. A. (1996). Prevalence studies of problem gambling in the United States. Journal of Gambling Studies, 12(2), 111-128.

This important and useful paper summarizes the results of 15 prevalence studies of problem and pathological gambling carried out in the United States. The author situates American prevalence studies in the recent history of expansion of gambling in the US, noting that this expansion has stimulated demands for information about the number and characteristics of problem and pathological gamblers in the general population. A useful review of methods used to assess problem gambling (the Cumulative Clinical Signs Method, CCSM: South Oaks Gambling Screen, SOGS) and their application in gambling prevalence studies is provided. The different approaches taken to obtain representative samples in the studies included in this paper are discussed also. The author does not attempt a meta-analysis of the studies reviewed. Rather, Volberg treats the studies chronologically from 1980 in three sections (early 1980s CCSM-based surveys; SOGS-based surveys 1986-1990; and SOGS-based surveys 1990-1996) and employs cross-jurisdictional averaging and cross-temporal averaging to facilitate comparisons. The survey results are discussed in light of methods and sampling design employed in each study. Prevalence rates estimated in each of the studies are shown and regional patterns are noted (for example, higher prevalence rates of problem and pathological gambling on the East and West coasts than in the Midwest). Substantial under-reporting of gambling involvement is noted in two early CCSM-based prevalence surveys (1984, 1985). Volberg contrasts these results with a series of surveys between 1986 and 1990 based on SOGS, which provided demographic characteristics and gambling involvement of non-problem gamblers as well. Between 1990 and 1996, 7 baseline surveys of gambling and problem gambling in the US general population were completed, and anomalous results (attributed to differences in the questionnaire or sampling design) are discussed.

Volberg notes that, while lifetime participation rates differ significantly across jurisdictions, the characteristics of persons who experience gambling-related problems are similar. In contrast with non-problem gamblers in the general population, they are more likely to be male, under 30 years of age, non-Caucasian, and unmarried. Further, they are usually less well educated. They started to gamble at a significantly earlier age, tend to wager frequently, and have significantly higher average monthly gambling expenditures. Annual household income levels are not lower, however. The author discusses several methods for screening at-risk individuals suggested by the data. Moreover, Volberg notes that the data provide solid evidence that problem gambling is reversible and treatable and suggests that existing treatment programs need to incorporate notions of natural recovery into their treatment regimes.

Volberg concludes that survey research, while expensive, provides consistent and cost-effective information when careful attention is paid to data collection methods. Although the SOGS is a more reliable and valid method for identifying problem and pathological gamblers than CCSM, Volberg suggests that SOGS is based on out-dated diagnostic criteria, and has questionable sensitivity and specificity when used in general population surveys. Furthermore, increasing non-response rates in telephone surveys are problematic. The need for longitudinal research to assess changes in gambling behaviour over time and measure the association of gambling with availability of different types of legalized gambling and estimate costs to society is underscored. Volberg notes that a variety of methods (including experimental, clinical, historical, ethnographic,

and survey approaches) is needed to resolve puzzles and discrepancies, as well as provide a depth of perception to the field of gambling studies.

- 138 Volberg, R. A., Dickerson, M. G., Ladouceur, R., & Abbott, M. W. (1996). Prevalence studies and the development of services for problem gamblers and their families. Journal of Gambling Studies, 12(2), 215-231.**

This article summarizes prevalence data for Australia, Canada, New Zealand, and the United States, and evaluates the development of services for problem gamblers and their families that have occurred as political response to the public concern about problem gambling that has followed expansion of gambling activities. The authors note the proliferation of prevalence surveys that occurred in the 1990s, largely with the intent of establishing and monitoring gaming initiatives in these countries and provide information on which to base education and treatment. Prevalence estimates and developments associated with the expansion of legalized gambling are reviewed country-by-country.

- 139 Walker, M. B., & Dickerson, M. G. (1996). The prevalence of problem and pathological gambling: A critical analysis. Journal of Gambling Studies, 12(2), 233-249.**

The authors of this study define prevalence of pathological gambling as the percentage of individuals in a given community at a given time who can accurately be labeled as pathological gamblers. This definition requires that the community be specified; that the time in which the count of cases is made be specified; and that the criteria for determining the presence of pathological gambling be specified. Published research on prevalence of pathological gambling is reviewed and evaluated in terms of these criteria. In many cases, the research fails to adequately meet these requirements.

The major error identified in all but the most recent surveys is the use of questions which ask whether gambling-related problems have ever occurred rather than whether they are currently occurring. This error leads to over-estimates of the prevalence of pathological gambling. The second major error identified in nearly all studies involves the accuracy of the screens being used to assess whether or not an individual is a pathological gambler. Concerns about the accuracy and efficiency of the South Oaks Gambling Screen have not yet been satisfactorily resolved. None-the-less, the widespread use of the South Oaks Gambling Screen has made a valuable contribution to international comparisons of prevalence studies. Sampling bias is discussed as another source of error.

Future work that explores the emerging relationship between levels of personal expenditure on gambling, types of gambling product and gambling-related problems are recommended.

- 228 Wenger, L., McKechnie, B., & Kaplan, G. S. (1996). Fastfacts on gambling. Winnipeg, MB: The Addictions Foundation of Manitoba.**

This monograph, published by and available from the Addictions Foundation of Manitoba (AFM), is a compilation of information on gambling in Canada, with a closer look at Manitoba, that will prove particularly useful for researchers who are new to gambling studies. Appropriately titled "FastFacts on Gambling", the book is a quick reference tool for definitions and types of gambling, statistics, motivations to gamble, profiles of people who gamble, historical perspectives, youth and gambling, the impact of problem gambling on families, and treatment/resources for problem gamblers. Moreover, complete citations are provided in the endnotes for all sources of the information covered. Helpful suggestions regarding the semantics of gaming/gambling and clarifying examples are provided. For researchers confused and frustrated by flip-flopping of

gaming/gambling terms, the definition provided gives clear criteria for preferential use of the term “gambling”, which is defined as any gaming behaviour involving the risking of money or valuables on the outcome of a game, contest, or other event, where the outcome is partially or totally dependent upon chance.

Six types of gamblers are identified: casual social gamblers, serious social gamblers, relief-and-escape gamblers, professional gamblers, antisocial or criminal gamblers, and pathological gamblers. For those researchers interested in problem gambling, concise information about problems associated with gambling and comparison with other forms of addictive behaviour (notably, substance abuse) is provided. Of particular value for planning studies are a chart describing the gaming industry across Canada, province-by-province, and an historical review of 25 years of legalized gambling in Manitoba. Highlights of the 1993 (general participation in gambling activities) and 1995 (prevalence of problem and pathological gambling) studies conducted in Manitoba by Volberg are provided in sufficient detail to form a general picture of gambling in that province, indicating that 93% of Manitobans have ever gambled. Thirty-six per cent gamble on a weekly basis. Unpublished data collected since 1995 by the AFM for its client population in adult treatment programs and HelpLine callers are summarized.

In light of the general interest in and perceived need for more information about youth gamblers, the chapter on youth and gambling will be particularly helpful for readers who are looking for a quick overview of gambling behaviours in this demographic group. This chapter summarizes, briefly, the limited information available from Canadian and Dutch studies, as well as unpublished assessment information gathered from youth clients in AFM’s alcohol and drug addiction program, where more than half of clients reported they had gambled at least once in their lives.

140 Wynne, H. J. (1994). A description of problem gamblers in Alberta: A secondary analysis of the gambling and problem gambling in Alberta study. Edmonton: AADAC.

The purpose of this study is to provide further, secondary analysis of data from an earlier study, *Gambling and Problem Gambling in Alberta* (Wynne, Smith, & Volberg, 1994), in order to gain more insight into the behavior of problem gamblers. The quantitative portion of the secondary analysis is based on telephone questionnaire responses from 154 lifetime and 99 current problem gamblers, and the qualitative analysis is based on interviews with 13 respondents identified as problem gamblers.

Results are presented in three major areas: 1) characteristics of problem gamblers in Alberta, including demographic profile, gambling history, place of residence, gaming preferences, and gambling frequency; 2) behavioral dimensions of problem gambling, including predispositional and psychological characteristics, as well as motivation for and attitudes toward gambling; and 3) impacts of problem gambling including personal, social, family, workplace, and financial effects. Also discussed are natural recovery, multiple addictions, and effects of introducing video lottery terminal gambling. The report concludes with a discussion of implications of the secondary analysis for prevention, education, treatment, and further research.

A summary report is available.

141 Wynne, H. J. (1994). Female problem gamblers in Alberta: A secondary analysis of the gambling and problem gambling in Alberta study. AB: AADAC.

The purpose of this study is to provide further, secondary analysis of data from an earlier study, *Gambling and Problem Gambling in Alberta* (Wynne, Smith, & Volberg, 1994), in order to gain more insight into the characteristics and behavior of female problem gamblers, as well as some of the

social and financial impacts of their out-of-control gambling behavior. The analysis is based on telephone questionnaire responses from 49 current problem gamblers who are female. Results are presented in three major areas: 1) characteristics of female problem gamblers in Alberta, including demographic profile, place of residence, gaming preferences, and gambling frequency; 2) behavioral dimensions of problem gambling, including motivation for gambling; and 3) impacts of problem gambling, including personal, social, and financial costs. Comparisons are made to female non-problem gamblers, current male problem gamblers, and male non-problem gamblers.

This investigation provides much information on female problem gambling that will be of value to field workers throughout Alberta. It is also a step toward addressing the paucity of empirical research on female problem gambling.

C. TREND STUDIES

- 142 **Cook, R. A. (1992). Towards understanding today's changing gaming participants. Journal of Travel & Tourism Marketing, 1(2), 63-70.**

Aimed at marketing strategists and researchers, this paper reviews demographic and social factors that contribute to an understanding of the current success and future prospects of the gaming industry. Expanded opportunities to participate in gaming activities and the interest and acceptance of gaming as a recreational activity have altered traditional demographic gamer profiles. Casual and occasional gamers have been attracted to the expanded range of gaming opportunities (e.g., lotteries), providing frequent repeat business and serving as opinion leaders in the diffusion and acceptance of this recreational activity. As the makeup of the United States population changes and the acceptance of lotteries increases, traditional demographic gamer profiles should be reconsidered. The author suggests that the expanded availability of gaming opportunities may well move the maturing gaming industry into a new phase of rapid growth.

- 143 **Emerson, M. O., & Laundergan, J. C. (1996). Gambling and problem gambling among adult Minnesotans: Changes 1990 - 1994. Journal of Gambling Studies, 12(3), 291-304.**

This article assesses changes in gambling and problem gambling in Minnesota from 1990 to 1994, a period of rapid expansion in the availability of gambling in this state. Surveys of 1,200 and 1,000 adult Minnesotans were conducted in the spring of 1990 and 1994, respectively, using the Minnesota revision of the South Oaks Gambling Screen (SOGS-M). An extensive discussion of methodology, including limitations such as sampling issues, is provided, and corrections are introduced for over-representation of females and non-metropolitan areas.

Findings indicate that while the percentage of Minnesotans gambling in the past year had not increased, those gambling in the past month increased from 23% in 1990 to 41% in 1994, suggesting that the frequency with which Minnesotans gamble had increased. Changes were also found in game preferences, with a marked increase in rates for lotteries and casinos. An increase in problem gambling was also found, with mean SOGS-M score increasing by 42% from 1990 to 1994. However, the proportion classified as probable pathological gamblers remained statistically unchanged. Thus the increase appears to have occurred at the lower ends of the problem gambling continuum, rather than at the probable pathological level. The authors call for additional research to address a number of questions that arise from the present study, and to inform policy decisions.

- 144 **Hermkens, P., & Kok, I. (1990). Gambling in the Netherlands: Developments, participation, and compulsive gambling. Journal of Gambling Studies, 6(3), 223-240.**

The purpose of this study was to review developments in gambling participation in the Netherlands between 1945 and 1988, differentiating between social participation and compulsive gambling. Participation data were gathered by means of a telephone survey of 2,200 adults, while data on compulsive gambling were obtained from a survey of compulsive gambling cases recorded by Alcohol and Drug Consultation Centers. Following a review of gambling laws in the Netherlands, developments in the following areas are discussed: lotteries, sports betting, casino gambling, slot machines, horse race betting, bingo/keno, illegal gambling premises, and tax revenues. Telephone survey results are then presented, offering a view of public participation in games of chance.

It was found that the range of games available in the Netherlands increased considerably over the study period, as has public participation. The more negative aspects of gambling become more evident throughout the period. Cases of compulsive gambling increased dramatically from only a

few cases before 1984 to between 1,100 and 1,200 in 1987. This increase is almost entirely the result of an increase in compulsive gambling among young people. Compulsive gamblers tend to be male, 50% are aged 15 or younger, 60% are addicted to slot machines, and 15% to 20% have been arrested, mostly for property offences.

The authors conclude that more research is needed to chart developments in this area, and governments and gaming organizations need to develop regulations to protect participants, particularly younger ones, against abuse and addiction.

145 Kiedrowski, J. (1995). Legal gaming in Canada: An overview. Canada: Research and Analysis Directorate, Department of Indian Affairs and Northern Development.

This report provides an overview of legalized gaming in Canada. Two studies on provincial and territorial gambling provide the basis for the report. The first was conducted in 1993 and consisted of a review of statutes and other government documents, as well as a survey questionnaire sent to provincial and territorial authorities. The second study in 1995, based on telephone conversations and correspondence with essentially the same agencies as the first study, updated the initial study and examined revenue distribution from gaming. Both studies focused on two types of legal gaming: activities managed by charitable/religious organizations or exhibitions, and lotteries operated by the provincial government through a Crown corporation.

The following major points are identified: charitable and religious organizations generate substantial revenue from gambling activities (\$723 million in 1993-94), as do government-operated lotteries (provincial revenues of \$1,610 million were generated in 1993-94); some provinces have regulations that control the commercial delivery of gaming services and supplies; there is a trend toward increasing Aboriginal control over gaming on reserves; video lottery terminals (VLTs) exist in most provinces, and several provinces are expanding the number of VLTs allowed; VLTs may be operated on reserves in Manitoba and Saskatchewan is following suit; and VLT revenue distribution agreements vary among provinces.

The remainder of the report provides the following information for each province and territory: provincial and territorial agencies responsible for regulating and controlling gaming, legislative mandates, types of gaming activities permitted, compliance mechanisms for controlling gambling, revenues, regulation of Aboriginal gaming, and future issues.

146 Ladouceur, R., Jacques, C., Ferland, F., & Giroux, I. (1999). Prevalence of problem gambling: A replication study 7 years later. Canadian Journal of Psychiatry, 44(8), 802-804.

This study investigates the relationship between availability of gambling activities and participation in gambling, maximum amount of money lost in one day to gambling, and prevalence of pathological gambling. The French version of the South Oaks Gambling Screen (SOGS) was used to survey two random representative telephone samples (first sample = 1,002; second sample = 1,257) of adults residing in Quebec. Chi-square analyses indicate that significantly more people (63%) reported having gambled in the last year (1996) in comparison with the first survey (1989). Moreover, losses were significantly higher and age at onset of gambling activity had increased. Lifetime rates of problem gambling remained relatively constant; however, lifetime pathological gambling increased. The incidence of pathological gamblers is estimated at an average of 5,421 new gamblers per year, although the percentage receiving help remains low. The authors provide relevant statistics in their report.

- 147 **Morgan, T., Kofoed, L., Buchkoski, J., & Carr, R. D. (1996). Video lottery gambling: Effects on pathological gamblers seeking treatment in South Dakota. Journal of Gambling Studies, 12(4), 451-460.**

Focusing on video lottery gambling, this study compares gambling behavior among three groups of pathological gamblers receiving treatment for addictive illness in two South Dakota hospitals. Following completion of demographic profiles and the Gambling Assessment Survey (GAS), 58 patients were assigned to three groups: video lottery only (pathological gambling status primarily attributable to video lottery gambling), video lottery mixed (gambled pathologically at both video lottery and other types), and not video lottery (reported no video lottery gambling). Group assignment was based on GAS responses, together with independent classification by each of the coauthors. Appropriate steps were taken to allow for consistency in classification among the investigators.

The three groups were compared with regard to recent type of gambling activity, most money lost on one occasion, and number of DSM-IV pathological gambling criteria met for each type of gambling. Of all gamblers, 87.9% had pathological involvement with video lottery, and video lottery gambling accounted for the highest level of recent activity. In the video lottery only and mixed groups, video lottery gambling led to greatest single-occasion monetary losses. In addition, significantly more DSM-IV criteria were met in the VLM group for video lottery gambling than for any other forms of gambling. Although the authors caution that sampling biases limit generalizability of these findings to other populations, results do indicate that video lottery gambling is the predominant type of gambling behavior engaged in by gamblers seeking treatment for addictive illness in South Dakota. They also support the clinical observation that video lottery gambling is associated with a more severe level of pathological gambling regardless of involvement in other types of gambling. The authors suggest that these findings could be associated with the availability and stimulus differences between video lottery and other types of gambling.

- 148 **Rosecrance, J. (1985). Compulsive gambling and the medicalization of deviance. Social Problems, 32(3), 275-284.**

This paper traces the process by which excessive gambling has been defined as both a disease and a serious social problem, a process the author suggests can be explained by the medicalization of deviance model (Conrad & Schneider, 1980). A review of the historical literature on gambling indicates that gamblers whose repeated losses lead to serious financial and psychological difficulties have been routinely labeled deviant, and are increasingly being labeled "compulsive" or "pathological." The prevailing illness model arose from clinicians, based on the self-reports of those seeking treatment to stop gambling. According to the author, researchers working in natural gambling settings have found little empirical evidence of compulsive behavior, yet various clinicians and non-medical help groups, such as Gamblers Anonymous, staunchly advocate a medical model. The latter groups, aided by increased middle-class awareness, had gained public support and controlled the maintenance of therapeutic programs in the mid-80's. According to the author, this control was based more on political dominance than on scientific achievement, thus bringing into question the efficacy of treatment programs available at this time.

The author suggests that the historical process of medicalization is likely to continue, and predicts that the medical monopoly over the definition and treatment of gambling will be strengthened as middle-class gambling is targeted as a major social problem in the mass media and by advocates of disease designations.

Conrad, P., & Schneider, J.W. (1980). Deviance and medicalization. St. Louis: Mosby.

- 095 Stinchfield, R., Cassuto, N., Winters, K., & Latimer, W. (1997). Prevalence of gambling among Minnesota public school students in 1992 and 1995. Journal of Gambling Studies, 13(1), 25-38.**

This article describes the results of the Minnesota Student Survey administered in 1992 and 1995 to students 6th, 9th and 12th grade public schools, which was the largest known sample of youth gambling data collected to date and provides a normative sample of youth gambling data. To answer questions about the generalizability of the findings of prevalence studies of adolescent gambling to the larger youth population, the authors administered a controlled questionnaire in a controlled setting (schools) at regularly timed intervals. The survey included questions pertaining to alcohol and drug use risk and gambling behaviours. In addition to prevalence data on youth gambling, rates are compared between 1992 and 1995. The data suggest, from a statistical standpoint, what levels may be considered common and uncommon among youth. Moreover, the relationship between gambling and other psychosocial and behavioural variables is measured. The results indicate gender, grade, and race effects in frequency, patterns, and problems related to gambling.

The study does not measure prevalence rates of pathological gambling among youth. Researchers interested in prevalence rates of pathological gambling among youth are referred to Shaffer and Hall's (1996) meta-analysis, where the serious problem or pathological gambling rate among youth is estimated at 4.4% to 7.4% (95% confidence interval). The authors review, briefly, the literature considered by Shaffer and Hall (1996), with an emphasis on prevalence of gambling rather than pathological gambling, including studies by Arcuri et al. (1985), Lesieur and Klein (1987), Ladouceur and Mireault (1988), Jacobs (1989), Volberg (1993), Wallisch (1993), Winters et al. (1993, 1995), Shaffer et al. (1994), Ladouceur et al. (1994), and Buchta (1995). Methodological weaknesses of these studies are discussed.

This article provides a clear description of the purpose, samples, instruments and procedures followed. Results are described in detail, with some discussion of statistical versus clinical significance, and the influence of large sample sizes. Chi-square statistics and details of stepwise multiple regression are provided for select analyses.

- 149 Winters, K. C., Stinchfield, R. D., & Kim, L. G. (1995). Monitoring adolescent gambling in Minnesota. Journal of Gambling Studies, 11(2), 165-183.**

Youth gambling was investigated in a longitudinal study of 532 Minnesota adolescents and young adults, aged 15 to 18 years, who responded to telephone surveys that included an adolescent version of the South Oaks Gambling Screen (SOGS-RA). The course of gambling behavior in the youth sample is described over a one-and-a-half year period. Of particular interest were the possible effects of two factors on the course of adolescent gambling: the onset of the Minnesota State Lottery, and reaching the legal age for gambling in Minnesota. Overall rates of gambling involvement and pathological gambling did not change across the 1.5 year interval. However, a preference for certain types of gambling activities (e.g. lottery, casino machines) significantly increased, whereas more informal and unregulated games (e.g. betting on games of personal skill) significantly decreased. It was also found that access to gambling activities by underage youths was high, suggesting the need for tighter controls of legalized games and greater awareness of this problem by the gambling industry and public health officials.

D. CORRELATION STUDIES

- 150 **Aasved, M. J., Schaefer, J. M., & Merila, K. (1995). Legalized gambling and its impact in a central Minnesota vacation community: A case study. *Journal of Gambling Studies*, 11(2), 137-163.**

This study examines the economic and social impacts of legalized gambling in the central Minnesota community of Brainerd-Baxter. Purposes of the study were: to inform the state's citizens and decision makers of the community impacts of legalized gambling, particularly the cumulative community revenue loss; to gather data to compare to a previous study of the Virginia community to assess regional variations in gambling rates and revenue losses; and to refine existing research methods. Data on gambling expenditures, losses, and profits in the study area were obtained from various state agencies. Additional data were collected using participant observation, and both structured and open-ended interviews of selected informants. Lottery and casino winners, for example, were interviewed to discover how their winnings were distributed. The study's research methodology is described in detail, and a number of methodological improvements over previous studies are noted.

Following a description of the community and the types of gambling available, annual player losses, profit margins, taxes, and resulting economic and social impacts are discussed. According to the authors, the most notable findings are estimates of annual player losses (\$3.3 million; \$205 per capita) and community revenue losses (\$2.2 million; \$138 per capita). Per capita lottery and charitable gambling player losses were 9.4% lower than those found in the Virginia community studied earlier; per capita community revenue losses were 7.6% lower. The study concludes with recommendations for increasing the reliability of future community impact studies. Suggestions include the use of community-specific sample surveys, collection of data on non-pathological or normative gambling, inclusion of subsamples of communities where impact studies have been done in order to provide follow-up data for time series analysis, and greater attention to the assessment of the influx of gambling money into a community.

- 151 **Abbott, D. A., & Cramer, S. L. (1993). Gambling attitudes and participation: A midwestern study. *Journal of Gambling Studies*, 9(3), 247-263.**

With the explosion of gambling in the Midwest of the United States, multiple forms of gambling can be easily accessed. This study, based on a random sample of 420 adults (196 men, 224 women), explores the extent of gambling in a Midwestern state and assesses differences in gambling attitudes and behaviour between men and women, in a variety of income groups, living in urban and rural areas. Opinions about legalized gambling were explored also. Respondents were contacted by telephone through a random digit dialling procedure and completed a survey questionnaire comprising 172 elements, with central elements adapted from a 1989 Gallup survey. Specific questions explored participation in a number of games, frequency of gambling, amount spent, opinions about legalized gambling, and the effect of gambling on the family.

The socio-demographic characteristics of the sample are described in detail. Results are provided concerning gambling participation, gender differences, urban and rural differences, income and gambling participation, effects of gambling on the family, and opinions about expansion of gambling. Results of statistical analysis are reported, and include, for various analyses, correlation coefficients, chi-square values, ANOVA (F statistics), t-tests, and Duncan's multiple range tests (M). Degrees of freedom and p values are provided for all statistics. The prevalence estimate is close to the 70% national figure and the sample results indicate behaviours among Midwesterners similar to other Americans regarding the kinds of gaming activities and monies spent. The data contradict the supposition that non-compulsive gamblers will only spend a set amount of money regardless of the number of gambling activities they participate in. As well, the younger the age at which a person

begins gambling, the more forms of gambling they are likely to participate in as an adult. No significant differences were demonstrated by race, sex, education, socio-economic class or residence; modest gender differences were apparent, however, with men playing more games and spending more money than women. Those at lower incomes were less likely to gamble than those in higher income groups, but tend to spend a greater percent of their income on gambling. Although the impact of gambling on the family was reported to be largely positive, the authors caution that extrapolation from the figures in this study imply nearly 34,000 families are adversely affected. Moreover, they predict that gender differences will decrease in future as more women participate in gambling.

The limitations noted by the authors include issues of self report common to all survey research. They conclude with recommendations for monitoring public participation, analyses of the social, individual and family impacts, government support of evaluations, and longitudinal studies.

152 Albers, N., & Hubl, L. (1997). Gambling market and individual patterns of gambling in Germany. Journal of Gambling Studies, 13(2), 125-144.

In this study, patterns of individual participation in legal forms of gambling in Germany are examined for the first time. Socio-demographic characteristics (age, gender, income, education, profession, family status) were examined in order to answer the question "who plays what and to what extent?" Also evaluated is the government practice of profiting from an activity regarded as demeritory.

Following a descriptive overview of the German gambling market, which is heavily dominated by state-operated games, data sources and methodology are described. Data come from 891 adult respondents to a survey carried out for the German lotto pool. The probit statistical model is used to assess the influence of socio-demographic factors on the probability of participating in each of the various legal games. Although little information is provided on the sample or sampling procedures, statistical procedures are described in detail.

It was found that most German gambling participants suffered no harmful economic consequences from gambling. In general, gambling participation tended to rise with income. The assumption that gamblers tend to be poor and unemployed was not supported. Only for gaming machines was participation higher for younger, unemployed and less educated adults. On the whole, findings suggest that gambling can be viewed as a widespread, normal consumption good or recreational service. The authors find no justification for the government view of gambling as demeritory and they reject the German model of a highly taxed state monopoly on gambling.

153 Barnes, G. M., Welte, J. W., Hoffman, J. H., & Dintcheff, B. A. (1999). Gambling and alcohol use among youth: Influences of demographic, socialization, and individual factors. Addictive Behaviors, 24(5), 749-767.

As noted by other authors, youth gambling research is in its infancy in comparison with studies of adults. Research indicates that youth are more likely to be identified as problem gamblers than adults. Moreover, significant correlations with alcohol use and other problem behaviours have been noted. The authors propose a conceptual framework for understanding adolescent gambling behaviours that is derived from theories concerning the development of adolescent alcohol misuse, which includes sociodemographic factors, socialization factors, individual/psychological factors, and co-occurring behaviours. A comprehensive review of the literature concerning each of these factors is provided.

Data from two general household samples in the Buffalo, NY area are reported in this prospective study of the co-occurrence of alcohol consumption and gambling behaviours among youth that explores the relative influences of the factors in this conceptual framework. The first study, a 6-wave longitudinal study of family influences on the development of adolescent alcohol misuse, involved a representative sample of 699 adolescents (aged 13-19 years at entry into the first wave) and their families. Black families were over-sampled. Youths and collaterals (family members and friends) were interviewed. The second study, a 3-wave longitudinal study on the relationship between substance abuse and criminal offending, involved a representative sample of 625 males (aged 16-19 years at entry into the first wave) and a family respondent familiar with the primary respondent's upbringing. The methodology for each study is described in detail, including weighting to an unbiased sample of young men, and completion and retention rates. References are given to additional published articles that provide details of the methodologies used.

The results of multivariate analyses are reported in detail for two dependent measures, alcohol consumption and gambling frequency, and independent variables from the four factors in the conceptual framework. Log transformations were applied for alcohol consumption, times gambled, cigarettes per day, illicit drug use, and adolescent delinquency. MANOVA, which allows for direct testing of interaction effects, was carried out separately for each study to examine the effects of the independent variables on adolescent alcohol consumption and gambling frequency. Predictor variables were entered into the analysis sequentially and each independent variable was tested for significance. The sociodemographic and behavioural measures for each sample are described, including differences by SES, gender and race. All statistics are provided, including cross-tabulations, F-statistics, and p values. The authors conclude that both gambling and alcohol consumption are more prevalent among youth; gambling and alcohol consumption co-occur, and heavier drinking among males is correlated with frequency of gambling. The results are less clear regarding gender differences. Both studies indicate that gambling and alcohol consumption are situated in a network of other youthful problem behaviours. These studies support occurrence of a syndrome of problem behaviours among young people who frequently gamble and use alcohol, suggesting that prevention strategies must go beyond prevalence rates and relationships between outcome variables, and examine predictors or "causal" factors in the development of youthful behaviours. In particular, the authors suggest attention be paid to impulsivity, moral disengagement, and delinquency.

Although this research is limited in the measurement of gambling and range of socialization measures, as noted by the authors, this article provides a systematic, theoretically informed, and methodologically robust exploration of youth gambling.

- 154 **Beaudoin, C. M., & Cox, B. J. (1999). Characteristics of problem gambling in a Canadian context: A preliminary study using a DSM-IV-based questionnaire. Canadian Journal of Psychiatry, 44, 483-487.**

The objective of this research was to develop a self-report instrument to assess diagnostic criteria and associated characteristics of pathological gambling in order to better understand the nature of problem gambling in a Canadian context. A sample of 57 adults seeking treatment for gambling problems at the Addictions Foundation of Manitoba were assessed using a measure developed to assess the frequency of DSM-IV diagnostic criteria for pathological gambling and solicit information on associated features of pathological gambling, help-seeking behavior, and suicidal ideation and attempts. In addition, South Oaks Gambling Screen (SOGS) file data were obtained for 45 of the respondents.

There was substantial variation in the presence of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) symptoms. Lying to family members or friends and "chasing" gambling losses

were frequently reported, while more serious consequences (e.g. relationship breakup, job loss) were less frequent. A lifetime presence of at least five symptoms was reported by 84% of respondents. A significant correlation ($r=.059$, $p<0.001$) was found between DSM-IV ratings and South Oaks Gambling Screen scores, which were all above the cutoff score for probable pathological gambling. Many individuals reported gambling as a way to alleviate dysphoric mood, and 30% reported receiving mental health services in the past, most commonly for depression.

Approximately 50% of respondents reported suicidal ideation and 16% reported past attempts, although recent suicide attempts were few. These results suggest that Canadian problem gamblers may differ from the profile suggested by many American studies, which often rely on older male pathological gamblers. It appears that video lottery terminals play a major role in the problem gambling experience seen in Canadian settings. This finding is consistent with Addictions Foundation of Manitoba data indicating that 87% of problem gamblers use VLTs daily or weekly. Study results also suggest that more systematic investigation of the presence of major depression and other psychiatric disorders should be undertaken among individuals seeking treatment for gambling problems.

The authors discuss study limitations, including use of self-report data and use of an institutional rather than a community-based sample, suggesting that results should be regarded as preliminary, and perhaps more useful for generating hypotheses for future investigation rather than for reaching definitive conclusions.

155 Bentall, R. P., Fisher, D., Kelly, V., Bromley, E., & Hawksorth, K. (1989). The use of arcade gambling machines: Demographic characteristics of users and patterns of use. British Journal of Addiction, 84, 555-562.

Machine users selected from arcades in the Liverpool area of England were interviewed about their machine using behaviour in this study. All age groups and occupational classes were included in the sample ($n = 213$), which included a disproportionately large number of young males. Methods are described briefly and comprise a representative sampling strategy among seven arcades selected to reflect varying characteristics of size, number of staff, number and type of machines, physical appearance, and immediate surroundings. Participants were selected through a pseudo-randomized process for a structured interview, copies of which are available from the authors.

The results are reported in detail for demographics, machine-using behaviour, and multi-variate (factor analysis, two-way ANOVA, Spearman correlation coefficients) analyses to assess the relationships between various aspects of arcade machine using behaviour. The first factor appeared to measure the amount of time and money spent, and was interpreted as a factor of machine dependency or habitual machine use. The second factor was interpreted as perceived luck. Selective usage of arcade machines and the extent of users history of arcade use were the third and fourth factors, respectively. Two-way ANOVA indicate that males score higher for the first factor, habitual use, than females. Significant correlation was noted between habitual machine use and age, with younger subjects more likely to be machine dependent. Statistics, including factor loadings, are reported in detail.

This article, which indicates that amusement arcade players are a highly diverse group, will be of particular interest to socio-cultural researchers interested in machine gambling, gambling in amusement arcades, and patterns of gambling among young males. The authors suggest that the findings support Dickerson's view that gambling behaviour is continuously distributed and discuss the methodological difficulties this presents for determining criteria for machine addiction apart from self-report. Limitations of the study design are discussed; however, this study remains a solid

contribution to the growing social epidemiological literature concerning amusement arcade gambling activity in Britain.

- 156 Bland, R. C., Newman, S. C., Orn, H., & Stebelsky, G. (1993). Epidemiology of pathological gambling in Edmonton. *Canadian Journal of Psychiatry*, 38(2), 108-112.**

Following a critical review of methodological issues in prevalence research, this paper presents the results of a study conducted in Edmonton, Alberta to assess the prevalence of pathological gambling in this city. Face-to-face interviews were conducted with 7,214 randomly selected adult household residents using the Diagnostic Interview Schedule (DIS), which is based on DSM-III criteria. A response rate slightly in excess of 71% was obtained. Sampling and other methodological procedures are described in detail.

It was found that 76.7% of men and 63.8% of women had gambled more than once, indicating that gambling is a widespread behavior. Thirty respondents met the DIS/DSM-III criteria for pathological gambling. The lifelong prevalence of pathological gambling was 0.42%, which is lower than that found in previous studies. Possible reasons for the lower rate are discussed and include methodological factors and regional variation. As in other studies, pathological gamblers tended to be male, with a 3:1 ratio of males to females. The peak age of onset was 25 to 29 years. Forty percent of pathological gamblers also had an antisocial personality disorder. High rates of comorbidity with other psychiatric disorders were also found. Pathological gamblers were likely to have made suicide attempts (13.3%), to have been convicted of offences (26.7%), to be spouse and child abusers (23.3% and 16.7%, respectively) and to have spent long periods unemployed (40%). In addition, 80% had trouble at home or work because of gambling, and 60% borrowed or stole to support their gambling activities.

- 157 Blaszczynski, A. P., & McConaghy, N. (1994). Criminal offenses in Gamblers Anonymous and hospital treated pathological gamblers. *Journal of Gambling Studies*, 10(2), 99-127.**

The purpose of this study was to compare the nature and prevalence of gambling and non-gambling related offences in samples of 152 pathological gamblers in an Australian hospital-based treatment program and 154 Gamblers Anonymous attendees who volunteered to participate in the study. Semi-structured interviews were used to obtain demographic data and details of the nature, frequency, and consequent legal action of criminal offences committed. Although the two samples were comparable in terms of gender and socio-economic distribution, the mean age of the hospital sample was significantly lower than that of the Gamblers Anonymous sample. Methodological limitations, such as the use of self-report data, are acknowledged and discussed.

Of the total sample, nearly two-thirds (59%) admitted to the commission of a gambling-related criminal act motivated exclusively by a need to obtain funds to main habitual gambling. Twenty-three percent admitted to a conviction. There was no difference in the proportion of hospital treated and Gamblers Anonymous subjects who offended. The most common gambling-related offences were larceny, embezzlement and misappropriation. Gamblers committed a median of 10 offences over an average 10-year period of pathological gambling. An average time lag of five years was found between the commencement of gambling and the onset of problematic levels of gambling. Except for the significantly older mean age of Gamblers Anonymous subjects, hospital treated gamblers did not differ from Gamblers Anonymous attendees on relevant demographic features or parameters of gambling behavior. The authors provide extensive discussion of their results in the context of related research. They interpret their results as suggestive of a possible causal link between pathological gambling and the commission of non-violent property offences, and suggest that interventions aimed at rehabilitation may be an effective strategy to reduce the risk of recidivism in this population.

- 158 Blaszczynski, A., & Steel, Z. (1998). Personality disorders among pathological gamblers. Journal of Gambling Studies, 14(1), 51-71.**

This paper reports findings on the prevalence of DSM-III-R diagnostic categories of personality disorders in pathological gamblers. Also reported are results on the association between manifest personality disorders and severity of pathological gambling behavior, type of gambling selected and associated psychological distress. The Personality Disorders Questionnaire-Revised (PDQ-R) and a battery of other psychometric measures, including the South Oaks Gambling Screen (SOGS), were administered to a sample of 82 consecutive admission pathological gamblers seeking treatment for gambling problems at an impulse control disorders research unit in Sydney, Australia. All subjects met DSM-III-R diagnostic criteria for pathological gambling. Seventy-three percent of subjects were male. The total sample reported having gambled a mean of 15 years of which, on average, the last 6.4 years were associated with problems.

Results indicated that the majority of subjects met diagnostic criteria for at least one personality disorder (93%), with an average of 4.6 personality disorders per subject. The majority of gamblers evidenced personality disorders from the Cluster B grouping with particularly high rates of borderline, histrionic, and narcissistic personality disorders which were found to be associated with high levels of impulsivity and affective instability. Antisocial and narcissistic personality disorders were both found to be possible mediators of the severity of problem gambling behaviors.

- 034 Bondolfi, G., Osiek, C., & Ferrero, F. (2000). Short communication: Prevalence estimates of pathological gambling in Switzerland. Acta Psychiatrica Scandinavica, 101(6), 473-475.**

This study, which involved telephone interviews with 2526 randomly selected individuals using the South Oaks Gambling Screen (SOGS) and CAGE screen for alcohol abuse, was conducted to evaluate the prevalence of pathological gambling and the link between pathological gambling and alcohol abuse in the Swiss adult population. The sample was proportionally stratified according to age, sex, and occupational status. Prevalence rates for problem and potential pathological gambling were estimated to be slightly higher than rates reported for other western countries, at 0.8% and 2.2%, respectively. Further, a clear association between pathological gambling and alcohol abuse was indicated.

The authors provide background information about the two screening instruments used in this study. Details of chi-square analyses that identified significant differences between the total sample and respondents classified as potential and problem pathological gamblers are provided for socio-demographic variables (age, sex, marital status, occupation, income, age of onset of gambling) and alcohol abuse. In particular and as in other country data, males, singles, people under age 29, and those who began this activity in adolescence comprised a significant majority of probable and potential pathological gamblers.

Socio-cultural researchers will find particularly useful the discussion of implications for research, treatment, prevention, and criminal justice.

- 159 Breslin, F. C., Cappell, H., Sobell, M. B., & Vakili, S. (1999). The effects of alcohol, gender, and sensation seeking on the gambling choices of social drinkers. Psychology of Addictive Behaviors, 13(3), 243-252.**

The authors review a number of decision-making models that have been applied to predicting risky behaviours such as betting and the relative influence of alcohol on decision making, which largely refer to cognitive disruptions associated with intoxication. The present study, based on

experimental research in alcohol and gambling, as well as theories concerning gender and sensation seeking, examines the relative influence of alcohol intoxication and individual differences, such as sensation seeking and gender, on the preference reversal effect using a gambling paradigm. Based on prospect theory, the primary hypotheses were that men and high sensation seekers would evidence risk seeking when choosing gambles, particularly when under the influence of alcohol. Further, they expected that women would exhibit a stronger preference-reversal effect than men.

In this study, social drinkers (men and women) recruited through local newspaper advertisement were randomly assigned to one of three conditions in a 3 (drink condition: alcohol vs placebo vs. no alcohol consumption) X 2 (gender: male vs female) factorial design. Following a brief phone screening, respondents were scheduled for an in-person screening. Specific inclusion criteria, described in the paper, were applied to derive a sample of 110 (53 men, 57 women) moderate to heavy social drinkers. Recent alcohol consumption was determined by means of the time line follow-back technique for the past 90 days. Alcohol-related problems were assessed by the Short Michigan Alcoholism Screening Test (SMAST) and the Alcohol Dependence Scale (ADS). T tests showed no difference in age or education level for men and women, although men's consumption levels were significantly higher. Select measures, described, were used to calculate sensation seeking and decision making scores. The experimental procedure used in this study is described in detail.

Reported results include subjective intoxication ratings (ANOVA). Significant differences were noted between alcohol and placebo, and alcohol/placebo and zero. Further, a main effect of drink condition was noted. Repeated measures multivariate analysis of variance (MANOVA) was calculated to evaluate the effect of alcohol and individual differences on decision making. Alcohol intoxication did not increase high-sensation-seeking participants' willingness to gamble, nor were gender differences in willingness to gamble apparent. The repeated measures MANOVA did indicate a main effect of betting domain, however. The authors suggest that the preference-reversal effect predicted by prospect theory is supported by this study for high-sensation-seeking participants, but not low-sensation-seeking participants. The study does not support the hypothesis that alcohol increases risk taking. The authors interpret the results in light of similar studies with conflicting results, suggesting that the alcohol-gambling link is correlational, not causal, and consistent with risk homeostasis theory. Implications for policy and further research are discussed.

160 Brown, D. J., Kaldenberg, D. O., & Browne, B. A. (1992). Socio-economic status and playing the lotteries. *Sociology & Social Research*, 76(3), 161-164.

From a social conflict perspective, lotteries have been described as a tax burden assumed by less privileged lower income groups, who perceive lotteries as a way to buy hope in a hopeless world, a perception perpetuated by alienation and economic frustration and constructed by elite groups to further their class interests. Observing that lottery expenditures are negatively correlated with income, several authors comment that the revenue generated through lotteries is regressive rather than proportional. The present study, examining the general theory that lottery play is influenced by social class, is concerned with the explanatory power of class differences for different forms of lottery play and examines the relative differences in various forms of lottery play between upper and lower ends of the middle class. The effects of education, occupation, and income as these factors relate to spending on the state lottery are examined in this study of a sample of residents in the 1990 Oregon Population Survey, a stratified (by region) statewide telephone study of 3,200 consumers, constituting a representative sample of adults in the state.

Details are provided of the sampling frame, units, and methods, as well as the questions included on the questionnaire (socio-demographics, measures of lottery participation). The frequency of play

was used to approximate lottery expenditures per respondent and as a ratio of household expenditures. Fifty-five percent of respondents had purchased lottery tickets in the previous year, with an average personal expenditure of \$42.00 (US) per year, indicating that a minor proportion of total household expenditure is spent per person on lottery play. Details of the authors' analyses of lottery play by educational attainment are provided (Scheffe tests, $p < .05$) and summary equations of the relationships between dollars spent (instant expenditure, total expenditure, and Lotto expenditure) and three measures of social class (education, income, and occupation).

Education is negatively related to lottery play and is the best predictor of amount of play. Occupation was the least important predictor of expenditures. The study is consistent with previous research indicating that persons of lower socio-economic status tend to spend a higher proportion of their income on gambling. The income effect disappears among the well educated with high income, with the higher status groups having a very low rate of play. The results partially support the argument that state lotteries differentially target less advantaged members of society and demonstrate that middle income earners contribute the greater proportion of state revenues generated through lotteries.

161 Brown, R. I. F. (1987). Pathological gambling and associated patterns of crime: Comparisons with alcohol and other drug addictions. *Journal of Gambling Behavior*, 3(2), 99-114.

Past research has shown statistical associations with patterns of criminal activity and both alcohol and drug abuse. This study was undertaken to examine patterns of crime among pathological gamblers. The pattern of convictions for various categories of crime in the general United Kingdom population was compared with the corresponding pattern in a sample of 107 addicted gamblers drawn from Gamblers Anonymous in the U.K. Questionnaires listed crimes and asked respondents to indicate number of times they had committed each crime, and number of times they had been detected and/or convicted. No demographic data were collected to assure anonymity. Chi-square was used to test for statistical significance.

A distinctive pattern of crime was found to be statistically associated with pathological gambling. Crimes tended to be non-violent, income-generating offences, usually against property. Fraud, forgery, embezzlement and petty theft are examples. This pattern was compared with other distinctive patterns associated with alcohol and drug addiction, and it was found to resemble most closely that of narcotics addicts.

The author acknowledges the limitations of comparing self-report to official report data, and cautions that these results do not indicate crime rate or causality. The possible role of gambling as a contributory cause of crime is discussed in the light of what is known of the issues surrounding other addictions as causes of their distinctive patterns of crime.

162 Browne, B. A., & Brown, D. J. (1993). Predictors of lottery gambling among American college students. *The Journal of Social Psychology*, 134(3), 339-347.

The aim of this research was to describe lottery play among college students, and to examine relationships between student gambling and parental gambling, peer gambling, and locus of control. Questionnaires that asked about gambling practices, peer and parental gambling, were completed by 288 students (111 women and 177 men) at a state university. The majority were aged 20 to 25, and the sample was restricted to persons who had grown up in the U.S. Subjects also completed the Nowicki-Strickland Internal-External Locus of Control Scale for Adults (ANS-IE).

Results indicated that most students were infrequent gamblers, with only 2% of the sample reporting frequent lottery play, and that gambling frequency was approximately the same for men

and women. Analysis of variance indicated statistically significant relationships between student lottery gambling and having parents and friends who were lottery gamblers. Having friends who gambled had a stronger relationship with student gambling for men than for women, and was related to both gambling more frequently and spending more money on lottery play. Students who were frequent lottery gamblers were more likely to participate in other forms of gambling and to have begun gambling at younger ages than less frequent gamblers. Locus of control was related to more frequent gambling among parents ($p < .004$) and only marginally ($p < .10$) related to more frequent lottery play among students. The authors suggest that perhaps different results would be obtained using a sample that was less restricted in its range of beliefs regarding locus of control. It was found that discriminant analysis using parental gambling, peer gambling, games played, sex, and locus of control could predict frequency of lottery playing for 72% of both gamblers and nongamblers. The most predictive variables in the equation were games played, parental gambling, and peer gambling. The authors suggest that the results of this study are consistent with a social learning interpretation of gambling behavior.

163 Bruce, A. C., & Johnson, J. E. V. (1994). Male and female betting behaviour: New perspectives. Journal of Gambling Studies, 10(2), 183-198.

Male and female betting behaviours are explored in this study of betting decisions made in off-course betting offices in the United Kingdom involving 50 betting offices (2009 males; 2015 females). During one week in 1991, betting slips were randomly selected, with all bets placed by females marked by the betting office staff. Three hypotheses were tested: 1-no difference between the performance of male and female bettors; 2-male bettors engage in more risk propensiveness behaviour than female bettors; and 3-females demonstrate less confidence in their betting decisions than males.

Results of chi-square analyses and two-tailed t-tests are reported, and limitations of the study design and interpretations discussed. Greater risk propensity is noted among male bettors in the sample; female bettors displayed lower levels of confidence in their choices and some degree of performance advantage over male bettors. The authors suggest that differences in motivational focus and gender differences in definitions of risk-taking and "successful" performance explain the study results. Although the study confirms significant gender differences in betting behaviour, further research is required to explore further gender differences in risk preference. Some ideas for future studies are suggested.

164 Bruce, A. C., & Johnson, J. E. V. (1996). Gender-based differences in leisure behaviour: Performance, risk-taking and confidence in off-course betting. Leisure Studies, 15, 65-78.

This study explored compared women's and men's participation in off-course horserace betting in a systematic random sample of single bets ($n = 1243$; 728 men, 515 women) placed at betting offices throughout the United Kingdom during April 1991. The random sampling procedure was based on the serial number of the betting slip, with all bets placed by women marked by betting office staff without the knowledge of the bettor. The authors review the relevant literature on horserace betting, and gender differences in leisure activity, decision performance, propensity to accept risks, and confidence in decisions.

Measurement procedures are described in detail. The results of chi-square and two-tailed t-test analysis are reported for a variety of comparisons. The results indicate that women enjoy a mild performance advantage over male bettors, contrary to earlier studies. Moreover, the results indicate significant differences in male and female bettors' perceptions and reactions to risk via their relative betting strategies. Traditional notions of greater male confidence are not supported. The

authors acknowledge that this study explores only one element of women's participation in leisure activities.

165 Campbell, F., Simmons, C., & Lester, D. (1998-1999). The impact of gambling on suicidal behavior in Louisiana. *Journal of Death and Dying*, 38(3), 235-239.

This study explores the impact of increasing opportunities for gambling on the suicide rate at the societal level by comparing suicide rates in Louisiana parishes prior to and after the introduction of lottery and video poker gambling. The authors summarize previous studies concerning correlates of suicide rates in Louisiana. The present study utilized suicide rates calculated for each parish in the periods 1989-1990 and 1994-95, numbers of video gaming systems in each parish in December 1993, per capita spending by parish from June to November 1993, and the number of suicide prevention centers and Gamblers Anonymous meetings each week in each parish.

An absolute change in the suicide rate rather than percentage change was used in the analysis. Of the variables examined, unemployment and per capita spending on lottery (but not video poker) were positively associated with the change in suicide rate (one- and two-tailed Pearson correlation coefficient). The presence of a suicide prevention center was negatively correlated with the change in suicide rate. A significant difference was noted between the increase in suicide rate in parishes with no suicide prevention center, on the one hand, and decreases in parishes with a suicide prevention center (two-tailed t-test). Only unemployment and per capita spending on the lottery emerged as significant predictors of change in the suicide rate in multiple regression analysis, however. The authors suggest that differences between changes in the suicide rate associated with either lottery and video poker playing may be explained by different groups of participants, however, more information is required on these differences before reasonable hypotheses can be proposed.

166 Castellani, B., Wootton, E., Rugle, L., Wedgeworth, R., Prabucki, K., & Olson, R. (1996). Homelessness, negative affect, and coping among veterans with gambling problems who misused substances. *Psychiatric Services*, 47(3), 298-299.

Pathological gamblers are noted in clinical studies to have higher levels of negative affect and poor coping in comparison to other clients. This brief report summarizes preliminary results from a study exploring psychological and sociological factors related to homelessness, addiction, and problem gambling, from an initial analysis of elements in a psychological profile. The sample comprises 154 formerly homeless veterans who misused substances and were assessed 6 months after. Details of the treatment program and assessment measures treatment (South Oaks Gambling Screen, SOGS; stability of housing arrangements and employment, from Homeless Veterans Discharge Forms; negative affect, SCL-90; coping, Coping Resource Inventory; substance misuse, DSM-III-R criteria) are provided. The key comparisons were between veterans with and without a gambling problem.

Subjects with a gambling problem had significantly higher scores on four subscales of the SCL-90 and scored lower on social, emotional, and spiritual subscales of the Coping Resource Inventory, as well as on the full scale. Chi-square analyses did not reveal significant differences between the two groups in housing and employment statuses. The authors conclude that problem gambling in substance misusers is associated with negative affect and coping problems after treatment discharge. They note, however, that the findings about employment stability and housing are less clear, suggesting that either the measures used may not have had the requisite level of sensitivity or a more exhaustive analysis of the relationship between clinical profiles of problem gamblers and their employment and housing situation is required.

Although limited to a preliminary analysis of the data, this study poses a number of methodological and conceptual questions for further research into the relationships among problem gambling, substance misuse, and other problems in living.

- 167 Chang, S. (1996). Impact of casinos on crime: The case of Biloxi, Mississippi. Journal of Criminal Justice, 24(5), 431-436.**

The objective of this study was to measure the impact of casinos on crime, focusing on the experience in Biloxi, Mississippi. With a population of under 50,000, Biloxi opened its first casino in 1992, with 10 casinos operating by the end of 1994. Data for 87 criminal offenses were obtained from the Biloxi Police Department and tested for statistical significance ($p < .10$) using a linear time-series model. An underlying assumption of the model is that statistically significant changes in crime occurrences are caused by casinos alone.

When crimes are grouped into eleven broad categories, a statistically significant decrease in mischief crimes and a significant increase in robberies were found following the opening of casinos. A substantial decrease in crime rates was noticed during the first full year of casinos, but crime rates appear to have returned to pre-casino levels in the second year. The authors conclude that overall, there was no increase in crime during the first two years of casino operation, but caution that the long-term impact of casinos on crime in Biloxi is yet to be tested.

- 168 Chantal, Y., Vallerand, R. J., & Vallieres, E. F. (1995). Motivation and gambling involvement. The Journal of Social Psychology, 135(6), 755-763.**

This study was carried out to assess how motivation relates to involvement in gambling. Within the context of self-determination theory, it was hypothesized that people who exhibited a high self-determined motivational profile (SDMP) (i.e., engage in gambling for fun and have a sense of choice) would report higher levels of gambling involvement than people with a low SDMP. In a survey conducted immediately before an evening program at a race-course in the Montreal area, 186 male and 59 female French Canadians who bet on horses completed two measures: the Gambling Motivation Scale, which is derived from the tenets of self-determination theory, and a measure of gambling involvement. Two indexes were computed prior to data analysis: the Self-Determination Index (SDI) and the Gambling Involvement Index (GII).

It was found that high-SDMP participants were more involved in gambling and more likely to continue gambling than low-SDMP participants, supporting the hypothesis that motivation is a key determinant of gambling involvement. High-SDMP participants engaged in gambling because it provided excitement, a sense of accomplishment, and an opportunity to broaden their knowledge, while low-SDMP participants gambled for external reasons, such as potential monetary reward. Gender was also found to be an important determinant of gambling involvement, with men reporting significantly higher involvement than women. The authors suggest caution in interpretation of these results due to sampling and design limitations.

- 169 Coups, E., Haddock, G., & Webley, P. (1998). Correlates and predictors of lottery play in the United Kingdom. Journal of Gambling Studies, 14(3), 285-303.**

An overall integrative framework is utilized in this study of lottery play among a community sample of 160 people in the United Kingdom. This study purports to transcend particularistic approaches to research that focus on either demographic, personality, cognitive, or social aspects of play. The focus of this study is on the impact of demographic, individual difference, cognitive, and social variables in predicting involvement in lottery play, newly introduced at the time of the study. In multiple regression analyses, Lottery play was positively correlated with friends'

participation, type of lottery play (“Instants”), frequency of other gambling, and cognitive distortions of probability, but negatively correlated with level of education.

Lottery play in the United Kingdom is described in detail and the literature concerning variables associated with gambling behaviour is reviewed, including demographic, individual differences, cognitive, and social variables. Details of the sampling frame are provided and elements of the questionnaire, including demographic, lottery/other gambling play, cognitive distortions, perceived illusion of control, locus of control, and sensation seeking are described. Moreover, the authors describe the derivation of scores for various measures utilized in the study. The results report on correlational analysis of Lottery play, friends’ Lottery play, Instants Lottery play, other gambling, misunderstandings of probability, perceived illusions of control, financial situation, education, locus of control, and sensation seeking (intensity and novelty). Analysis focused primarily on correlations between Lottery play and other variables.

The results highlight the social nature of Lottery play in a non-student population and discuss the results as an alternative to previous research that adopted social learning theory as an explanatory framework. The authors suggest that, among possible directions for future research, researchers explore the reasons people give for playing lotteries, related to social aspects of the Lottery.

- 170 Cross, M. E., Basten, J., Hendrick, E. M., Kristofic, B., & Schaffer, E. J. (1998). Student-athletes and gambling: An analysis of attitudes towards risk-taking. Journal of Gambling Studies, 14(4), 431-439.**

This study reports on attitudinal differences towards risk-taking among student-athletes who gamble on college sports and those who indicate no such gambling activity, and thus contributes to the general literature on gambling among post-secondary students. Data were collected in a random mailed survey of football and men’s basketball student athletes from NCAA Division I schools across the U.S. The final sample comprised 648 players; the response rate was 32.4%. Most received athletic grant-in-aid. The sample included 54.6% white and 40.5% African-Americans.

Details of the variables to measure risk-taking and gambling behaviour are provided. Means testing was used to detect differences in attitudes towards risk-taking between type of player, and gambler or non-gambler status. Statistics, including p values, are provided and indicate that the players who gambled on college sports had significantly different attitudes towards risk-taking than their peers who did not gamble. The authors note that this finding is consistent with current theory concerning risk-taking. Limitations of the study are discussed, including the design of the survey instrument and generalizability of the findings.

This research suggests that future studies should focus on comparing rates of gambling among college players with non-athlete peers, identify additional factors that may influence gambling among student-athletes, and focus on participants in other sports, as well as female participants.

- 171 Derevensky, J. L., & Gupta, R. (2000). Youth gambling: A clinical and research perspective. EGambling The Electronic Journal of Gambling Issues, (2).**

Based on an extensive review of the literature, this paper provides an overview of the current state of knowledge related to youth gambling problems. The goals and contributions of the McGill University Youth Gambling Research and Treatment Clinic are highlighted. The authors describe their clinical and research program findings within the context of identifying risk factors associated with problem gambling among adolescents. Specific recommendations include the need to change the focus from a disease or treatment of dysfunction model to a prevention model aimed at youth. Elements of such a prevention model are described. The authors conclude that youth gambling is

an important area in need of further basic and applied research. Also needed is a substantial infusion of funding to support empirically based studies and the development and implementation of responsible social policy. They call for stronger legislation and enforcement of existing underage gambling laws, as well as for collaborative efforts between the public, industry, legislators, clinicians and researchers to help resolve this growing problem.

172 Dube, D., Freeston, M. H., & Ladouceur, R. (1996). Potential and probable pathological gamblers: Where do the differences lie? Journal of Gambling Studies, 12(4), 419-430.

This important study explores the validity of two categories of gamblers, potential and probable pathological gamblers, as identified by the South Oaks Gambling Screen (SOGS). Previous studies indicated a link between pathological gambling, use of psychotropic drugs, eating disorders, and illegal activities. Among adolescents, pathological gambling is associated with a range of problematic behaviours, including suicide attempts, psychotropic drug use, and antisocial behaviour. In this study, the authors re-examine probable and potential pathological gamblers from a previous Quebec study of adolescents (age 16 to 23 years; n = 1, 471; 27.1% female, 72.9% male) to identify dimensions of gambling behaviour, substance abuse, and indicators of psychological distress among the subjects in the sample and distinguish between probable and potential pathological gamblers.

Details of the sampling method, procedures, and socio-demographic profile of subjects are provided. In addition to the SOGS, questionnaires explored use of psychotropic drugs, alcohol, and tobacco; overeating; suicidal ideation; worry about the future; and socio-demographics. The authors analysed the data by performing factor analysis of the items on the questionnaire, using principal component analysis to limit the number of variables and dimensions. Five factors were identified, accounting for 55% of the variance and included illegal behaviour (16%), heavy gambling (14%), eating disorder (11%), a factor reflecting less impulsive/parentally modeled behaviour and more stable characteristics (7%), and worry (7%). The authors provide details of canonical discriminant analysis, used to characterize the differences between the 41 probable and 81 potential pathological gamblers in the sample, and the total sample structure coefficients. The authors conclude that potential and probable pathological gamblers have distinct characteristics that go beyond the degree of gambling activity, which include particular types of gambling behaviour, illegal behaviour, and psychological distress. Each factor is discussed in detail in this paper and the authors conclude that probable pathological gamblers engage in a variety of other detrimental behaviours as well as pathological gambling, not only supporting the validity of the two categories identified by SOGS, but suggesting that these two categories represent wide-ranging behavioural profiles beyond gambling.

This study is of interest to both clinicians and socio-cultural researchers. For example, the data suggest that women's gambling habits appear to be related to different factors than those of men. The interrelationship between identified factors and pathological gambling indicated by this study may have important consequences in cases of legal psychological assessment, cross-addictions, and dual diagnosis. Moreover, the authors link the results of this study to their own clinical experience, noting that the "worry" factor makes good clinical sense in that many clients have great difficulties in solving their problems, due largely to cognitive and affective factors. The construct validity of SOGS is supported by the results. Areas for further study are suggested.

058 Fisher, S. (1999). A prevalence study of gambling and problem gambling in British adolescents. Addictions Research, 7(6), 509-538.

This study is the first national prevalence study of gambling and problem gambling among British youth ages 12 to 15 years. Although all forms of commercial and non-commercial gambling played

by young people were considered, the study focused on fruit machines and lottery scratchcards. A representative stratified sample of ten thousand students from classes in 114 schools (excluding special and private schools) were surveyed in England and Wales to test the hypothesis, and related hypotheses (e.g., higher prevalence of problem gambling in specific locations such as seashores due to the popularity of arcades in these places), that the National Lottery scratchcard tapped into an existing mature market for adolescent fruit machine gambling. The study also enquires into behaviours and experiences correlated to problem gambling and socio-demographic factors involved. A revised, youth-adapted version of the DSM-IV gambling screen (DSM-IV-MR-J) was used which incorporates response items suggested by previous research on youth gambling and includes nine dimensions of problem gambling. The full screen is provided in an appendix to the article. The results include lifetime and past week expenditures (legal and illegal), venues of sales and play, problem gambling compared to non-problem gambling (including prevalence, characteristics, frequency of play, and expenditures), and social costs associated with gambling among youth. The study explores aspects of parental gambling and attitudes associated with youth gambling also. Predictors (risk factors) of problem gambling were investigated through stepwise logistic regression analysis. All statistics are reported in full.

For the reader desiring an introduction to themes in youth gambling research literature, this article provides a brief summary: the popularity of gambling among young people, the prevalence of gambling problems among youth, and indicators and consequences of youth gambling. The current study situates youth gambling in the “mish-mash” of British policy and legislation concerning gambling by youth. The author provides a thoughtful discussion of “problem gambling”, presenting her view that problem gambling is the term of choice for population based studies, and suggesting that a diagnosis of pathological gambling is inappropriate outside of clinical settings.

This research situates youth problem gambling carefully within wider lifestyle phenomena, but suggests that its importance has been underestimated. Further, the significant role of family and life skills development, and societal responsibility for enforcement of policies and legislation concerning youth gambling, are discussed.

- 173 **Giacopassi, D., Nichols, M., & Stitt, B. G. (1999). Attitudes of community leaders in new casino jurisdictions regarding casino gambling's effects on crime and quality of life. *Journal of Gambling Studies*, 15(2), 123-147.**

Interviews were conducted with 128 key individuals in seven communities that had recently introduced casinos: Biloxi, MS; St. Louis and St. Joseph, MO; Alton and Peoria/East Peoria, IL; and Sioux City, IA. The individuals interviewed represented a variety of community sectors (elected officials, business leaders, law enforcement personnel, heads of social service agencies) to obtain a broad spectrum of community opinion on the positive and negative effects of casinos on communities. A series of core questions (a copy of which is appended) were asked of all 128 respondents followed by additional questions designed to elicit specific information based on the individuals' position. A content analysis was conducted comparing responses both within and between communities by leadership position.

Findings indicated that a clear majority (59%) of those interviewed were in favor of the casino in the community, believe the casino had a positive effect on the economy (77%), had a positive effect on quality of life (65%) and had little or no effect on crime (69%). Although a majority of community leaders viewed the impact of casinos favorably, responses varied both by community and by position within the community. For example, communities that depended heavily upon a casino for their economic well-being tended to view casinos more positively than communities where casinos play a minor economic role, and individuals in economic development positions

viewed casinos more positively than social service providers. The authors caution that since this group of community leaders was not selected randomly, it is possible that interview bias shifted these results in a positive direction.

- 174 Grichting, W. L. (1986). The impact of religion on gambling in Australia. Australian Journal of Psychology, 38(1), 45-58.**

Conflicting assertions concerning the impact of religion on gambling, situated in popular conceptions of Australian society, are explored in a probability sample (n = 318; 268 included in analysis) from the Quality of Life Studies in Townsville, North Queensland, Australia. The author begins by examining five prominent "self-evident truths", common misconceptions concerning gambling in Australia, and the contradictions inherent in these myths about Australian gambling. In addition to analysis of the gambling data from the Quality of Life Study, the article addresses the concept of religion (distinguishing among context, degree, and domain of religiosity) and the contaminating factors of gender and social class.

A two-stage sampling design was used; segments of the local population excluded from the sampling frame are identified. The author provides details of the survey questions and reports frequency data, interaction effects, relationship of extraneous variables, and the results of regression analyses and analysis of covariance (with two ratio dependent variables: frequency of gambling and amount spent on gambling; and a mixture of qualitative and quantitative independent variables) for response categories. Multiple regression was used to check on the risk of unbalanced analysis common to covariance design. Standard deviations and error estimates are reported in tables. The link between gambling frequency and expenditure with religiosity and socio-economic background is modeled in a path diagram. The author concludes that Catholics are disproportionately heavy gamblers, with rates of gambling positively correlated with religiosity. Protestants gamble also, however, but tend to gamble less as they claim higher religiosity. Sex and socio-economic statuses do not appear to affect these results. Lower classes appear to gamble more often and spend more on this activity; however the author's analysis demonstrates that income earned is not related to either gambling frequency or expenditure, while years of formal education are negatively correlated to both. Thus, relatively poorer people spend a relatively larger proportion of their income on gambling. The author suggests that more attention should be paid to the factor of religion in gambling behaviour.

- 175 Griffiths, M. (1993). Factors in problem adolescent fruit machine gambling: Results of a small postal survey. Journal of Gambling Studies, 9(1), 31-45.**

The results of a postal study of adolescents formerly addicted to fruit machine gambling are presented in this article. The research is situated in the context of gambling accessible to adolescents in the UK, which is restricted to fruit machines, in contrast to the wider range of gambling activities in which adolescents participate in the USA and Canada. The author summarizes the literature on prevalence of gambling and pathological gambling among adolescents, particularly young males, and including trend data that suggest an increase in the number of fruit machine referrals to treatment. Negative consequences associated with fruit machine playing among adolescents are noted. The reported research is the first study of problem adolescent gambling to use written self reported personal histories.

Data were collected through a questionnaire that included questions concerning socio-demographics, reasons and history of playing and gambling pathology, skill factors, mood variables, and a personal narrative account of fruit machine playing. Details of the sampling strategy are provided (19/90 were returned; 15 males, 4 females). Sixteen of the 19 were identified as pathological gamblers using the DSM-III-R criteria. The written personal histories provide rich

insight into adolescents' perceptions, including their experience of pathological gambling activity, motivations for fruit machine playing, perceived skill factors and mood factors, and additional factors such as graduation to other forms of gambling, personal strategies used to give up playing the machines, and descriptions of the emotional pain experienced.

Although of limited generalizability, the data reported in this study are of existential value, providing a "thick" description of adolescents' lived experience of pathological gambling. The role of peer or parental involvement in gambling, acting out "adult behaviour", escapism to relieve the symptoms of depression, and the excitement of the play and its venue were cited as significant factors in adolescents' experience of fruit machine playing. The author notes that, in the descent into addiction patterns of playing, adolescents gradually withdraw from social contacts, culminating in the adolescent developing a "love affair" with the machine, and in some instances "worshipping" it to the point of living in a "blur" or "trance". The author suggests that more research is needed to clarify legal implications of disassociative states and the existence (or not) of depressive moods before gambling, as well as heightened arousal states during gambling. Moreover, he suggests that unresolved adolescent problem gamblers graduate to horse track betting, which is regarded a more skilled level of play. Cognitive distortions and the role of family communication and support in intervention and treatment are discussed.

176 Griffiths, M. (1991). The observational study of adolescent gambling in UK amusement arcades. Journal of Community & Applied Social Psychology, 1, 309-320.

The purpose of this study was to observe the machine playing behavior of individuals across a number of arcades in order to gain insight into the social world of fruit machine players, the level of gambling within arcades, motivations for machine playing, and differences between machine playing in inland and coastal arcades. Data were collected through the monitoring of 33 UK amusement arcades employing participant and non-participant observation methodologies. The research approach was predominantly empirical and qualitative. According to the author, results should be interpreted as suggestive of hypotheses, but not as confirming fact.

Although the clientele of arcades differs depending on geographical location, with a greater variety found in seaside arcades, the heaviest users of high-stake fruit machines in all arcades appear to be young males, aged 16-25 years. More adolescents played machines in coastal arcades than in inland arcades. Level of gambling was found to vary with both time of day and time of year, with more adolescents frequenting arcades during the evening and the summer season. As with most previous studies, more males were found to play machines than females. Many regular male players appeared to conform to rules of etiquette and display stereotypical behaviors when playing fruit machines. Results also suggest that adolescents play fruit machines for a wide range of reasons including fun, to win money, to socialize, to escape, to show off skill, to show control, and for excitement. The author concludes that much additional research is needed in this area, and suggests that videotaping might be a useful means of gaining arcade behavioral data in future investigations.

177 Griffiths, M., & Sutherland, I. (1998). Short communication: Adolescent gambling and drug use. Journal of Community & Applied Social Psychology, 8, 423-427.

Cross-addiction of problem gambling and other forms of addictive behaviours has been explored among adults, providing evidence from clinical surveys and case studies for regular co-existing dependencies with pathological gambling among. This British study of adolescent gambling examines the relationship between underage National Lottery gambling, underage scratchcard gambling, cigarette smoking, drinking alcohol and drug use. A close link was indicated.

Data were collected by a questionnaire administered in 5 English secondary schools (n = 4516) in different geographical and socio-economic areas. The results of chi-square analyses describe

prevalence, patterns of gambling behaviours such as gender differences and preferred modes of play, and associations between gambling and other forms of addictive—including “alcopops” use—and other undesirable behaviours. The data suggest that illegal gambling is widespread among adolescents, particularly among males and adolescents who are involved in other forms of illegal or deviant behaviours. Moreover, a sizable proportion of younger adolescents (ages 11 and 12) report gambling. The author discusses the social context and explanations for these patterns and links. Limitations to the study design and results are discussed.

178 Griffiths, M. D. (1990). The acquisition, development, and maintenance of fruit machine gambling in adolescents. Journal of Gambling Studies, 6(3), 193-204.

The purpose of this study was to examine sociological, psychological and physiological factors in the acquisition, development and maintenance of gambling behavior in adolescent fruit machine players. Fifty adolescent fruit machine players participated in a face-to-face interviews and completed questionnaires on gambling behavior. Although the sample size was small, a number of trends were discerned.

Fruit machine playing appears to be a predominantly male activity. Nine participants, all males, were deemed to be pathological gamblers as measured by DSM-III-R diagnostic criteria. Although there were few differences in acquisitional factors between pathological and non-pathological gamblers, it was found that pathological gamblers started playing on fruit machines significantly earlier than non-pathological gamblers. In addition, pathological gamblers reported significantly more excitement and arousal during gambling activity than social gamblers. A number of negative consequences were reported by social gamblers, including spending more than intended, gambling debts, truancy and stealing. The author suggests that although conclusions should not be drawn from such a small sample, the pattern that emerges is one in which sociological factors appear to be important in the acquisition of gambling behavior, and in the development and maintenance of social gambling. In contrast, the development and maintenance of pathological gambling appears to be sustained by psychological and physiological variables.

179 Gupta, R., & Derevensky, J. L. (1998). Adolescent gambling behavior: A prevalence study and examination of the correlates associated with problem gambling. Journal of Gambling Studies, 14(4), 319-345.

This comprehensive study examines correlates of adolescent problematic gambling, including preferred types of play and degree of involvement; familial and social influential factors; cognitive perceptions of skill and luck; underlying motivational factors; and the occurrence of co-morbidity. Prevalence of pathological gambling among adolescents appears to be relatively high (3.5-8%, with another 10-14% at risk) in comparison with adults, but research in this area is at an early stage. Whether the prevalence of pathological gambling is rising among adolescents is indeterminable at present, given the few empirical studies completed. Moreover, various methodologies have been employed, few replication and follow up studies have been conducted, and the nomenclature used to refer to youth experiencing serious gambling-related problems is inconsistent and diverse. As the authors of this article point out, there is cause for concern about adolescent gambling beyond prevalence rates, because of the potential impact on young people who have not yet developed healthy, adaptive coping skills and subsequent increased risk of suicide and antisocial behaviours.

The authors provide details of this high school-based study involving 817 adolescents (417 males; 400 females; mean age 11.5 years of age) in Grades 7, 9, and 11 in Montreal. The DSM-IV-J screen for pathological gambling during adolescence and a revised version of a self-administered questionnaire previously developed by the authors were used. The latter provided descriptive information about gambling behaviours, cognitive perceptions, familial history, and co-morbidity.

Of the total sample, 80.2% report gambling in the past 12 months; 35.1% at least once per week. DSM-IV-J criteria for pathological gambling were met by 4.7% of the sample; 3.3% met the criteria for problem gambling. Gendered, familial, socially influenced, and developmental patterns of gambling and gambling-related theft and borrowing of money are reported, as well as patterns of other high-risk behaviours (alcohol, tobacco, and other drug use) and cognition. Chi-square statistics are reported for all associations. The authors conclude that a small number of adolescents have a significant gambling problem (4.7% of sample). Moreover, gambling among adolescents is the most popular potentially addictive behaviour in which this sample engaged on a regular basis. The results of this study indicate that adolescent problem and pathological gamblers are identifiable. Although differing prevalence rates by age group have previously been attributed to maturation (natural recovery hypothesis), the authors suggest that the data may indicate a cohort effect and underline the need for longitudinal studies. The results appear to support Jacob's General Theory of Addictions, which contends that addictions serve the common purpose of escape, as well as social learning theory, which suggests that individuals imitate and model those individuals they value, such as parents, siblings, and peers.

This study links empirical evidence with theoretical stances and environmental contexts of adolescent gambling. Researchers interested in the socio-cultural domain will find in this paper a sophisticated and thought-provoking discussion of current evidence and future research directions for understanding and dealing with adolescent gambling.

180 Gupta, R., & Derevensky, J. (1997). Familial and social influences on juvenile gambling behavior. *Journal of Gambling Studies*, 13(3), 177-272.

This study seeks to provide a clearer understanding of the familial and social factors contributing to juvenile gambling behavior. Within the context of social learning theory, early gambling behavior of children is examined, including reasons underlying gambling behavior and environmental factors that may influence such behavior.

A sample of 477 Montreal school children aged 9 to 14 completed questionnaires about their gambling activities and their perceptions of their gambling behavior. It was found that 81% of the total sample had gambled at one point in their lives and 52% of those children reported gambling once a week or more. Eighty-six percent of children who gambled regularly reported gambling with family members – 53% with siblings, 40% with parents, 46% with other relatives, and 75% gambled in their own homes. These results suggest that parents and other relatives play a significant role in conveying that gambling is an acceptable activity with no potentially harmful affects. Eleven percent of the sample reported that gambling makes them feel important. Twenty-seven percent feel they gamble more than they desire to do so, and 10% feel that they gamble in excess. These rates were higher for boys than for girls, and tended to decrease with increasing age. Only 10% of grade 8 students feared being caught gambling, suggesting that gambling activities are a socially acceptable behavior.

The authors conclude that the early onset of gambling behavior is significantly influenced by familial gambling patterns and the community influences that determine choices of gambling activities. They assert that greater public awareness concerning potential problems associated with juvenile gambling is essential, and more basic research in this area is needed.

181 Gupta, R., & Derevensky, J. L. (1996). The relationship between gambling and video-game playing behavior in children and adolescents. *Journal of Gambling Studies*, 12(4), 375-394.

Retrospective studies of adult problem gamblers indicate that the onset of their gambling commonly begins between the ages of 10 and 19 years of age. Further studies suggest that

alarmingly high numbers of children are engaging in gambling behaviour, with males involved more often than females. A behaviourist paradigm suggests that the variable ratio schedule (intermittent reinforcement) common to most gambling activities and commercial video-games, as well as other common properties, contributes to the development of addictive behaviours. This school-based exploratory study investigates the relationship between gambling activities and commercial video-game playing among 104 children aged 9 to 14 years (Grades 4, 6, 8), and examines children's perceptions with respect to both activities.

The authors collected data on two groups of children who were classified as high frequency (n = 49) and low frequency (n = 55) video-game players. A specifically designed questionnaire inquired about video-game playing and gambling activities, including questions about perceptions of degree of skill and luck involved; frequency of visits to arcades; perceptions of skills; desired abilities; frequency and types of gambling; reasons for engaging in gambling and video-game playing; monies wagered; and whether or not gambling made them feel important. A variety of gambling activities were included. Further, a computerized blackjack game was used to measure risk-taking behaviour on a gambling task. No significant differences were found across grades. The results are thus collapsed across grades for all comparisons described. Reported measures of association included t-tests and chi-square analyses for perceptions of luck versus skill in playing either video-games or gambling, patterns of wagering, gross winnings. The analyses include comparisons between males and females, high frequency and low frequency players. Detail results of this study are provided, emphasizing the link between high frequency video-game playing and gambling. The authors stress the need for longitudinal studies to clarify causal relationships between underlying cognitive, personality, social, environmental, and societal factors and patterns of video-game playing, as well as the relationship between excessive video-game playing and gambling activities.

066 Hendriks, V. M., Meerkerk, G. J., Van Oers, H. A. M., & Garretsen, H. F. L. (1997). The Dutch instant lottery: Prevalence and correlates of at-risk playing. *Addiction*, 92(3), 335-346.

This paper reports on a randomized study of 4497 instant lottery players in the Netherlands during the year following introduction of the instant lottery. The purpose of the research was to evaluate possible negative side effects of instant lottery playing in terms of excessive playing or addiction. At-risk players (4.1%) were differentiated from recreational players on the basis of involvement in the instant lottery, impaired control, and negative consequences experienced. The methodology and results are described in detail, including chi-square and other statistics. Significant differences between at-risk and recreational players were noted on playing behaviour, socio-economic background, playing motivation, participation in other games of chance, and involvement in alcohol use and use of marijuana.

This study focuses on at-risk behaviours as an alternative to the addiction-oriented approach, which generally uses the South Oaks Gambling Screen (SOGS). Details of this alternative conceptual approach are provided. The results of this study are compared to the results of other gambling studies, particularly gender, ethnicity, and socio-demographic variables such as living alone, having a low income, and being unemployed. Negative motives and emotions were strongly correlated with at-risk playing. This study provides support for a general relationship between various types of addictive-like behaviours such as problem or pathological gambling and alcohol or other drug dependency.

- 182 Hoffmann, J. P. (2000). Religion and problem gambling in the U.S. Review of Religious Research, 41(4), 488-509.**

Several Christian denominations in the United States have attempted to reduce the spread of legalized gambling, although a continuum from clear proscription to care for potential problem gamblers is evident. Catholics, Jews, and those who profess no denominational affiliation are more likely than Protestants to gamble and have gambling problems. The reasons behind these patterns are not evident, however. This study addresses the impact of religious practices or beliefs, as measured by attendance at religious services and importance of faith in God, on gambling behaviour or problems among a nationally representative sample of American adults (n = 2, 406).

The literature linking religion and gambling problems, restricted to studies of mainstream American denominations, is reviewed in detail. The sampling strategy and measurement variables (principal outcome variable of problem gambling is defined by DSM-IV criteria) are described. Ten of the seventeen survey questions asked about problems associated with gambling. Involvement in a variety of gambling activities were explored. Two interaction terms were computed: attendance-gambling frequency and importance of God-gambling frequency. Key predictor variables assessed attendance at religious services and importance of faith in God in one's life. Two principal stages of analysis included: first, modeling of the selection process by which adults sort themselves into gamblers and nongamblers, estimated by the probit model; secondly, likelihood estimation of problem gambling among the subsample who report any lifetime gambling (Poisson regression model). In the second stage, the authors include a selection term from the first stage of analysis to control for the selection process and control for heterogeneity due to co-variants affecting the decision to gamble. The authors discuss their approach to analysis, including bias, effect on standard error estimation, and weighting in detail.

Mixed results were obtained for the hypothesis that religion attenuates gambling problems. Frequent attenders were less likely than others to report gambling problems; self-reported faith in God had no effect on problem gambling. Several alternate explanations are discussed. The authors suggest that the social integration afforded by religious attendance is more important than intra-personal religious salience in effect on problem forms of gambling. Limitations are discussed, including research design, measurement issues, causal order of variables, confounding factors and underlying correlates.

- 183 Hraba, J., & Lee, G. (1996). Gender, gambling and problem gambling. Journal of Gambling Studies, 12(1), 83-101.**

Gender comparisons are rare in gambling research outside of problem gambling, but are required for both treatment and prevention program planning. This study compares men's and women's self-reported gambling behaviour (characterized by scope, frequency, amount of money wagered, amount of leisure time spent on gambling) and problem gambling (defined in this study as progression into more gambling and heavier wagering, resulting in loss of control over gambling and disruption of one's life). Men and women were compared also on the etiology of their problem gambling. The authors situate this research in the limited theory concerning gender differences in gambling (gender role socialization) and problem gambling theories such as "love for action", "the big win", "the bad beat", and locus of control.

A stratified (by county) random sample (n = 1,011) of working telephone numbers, proportional to population size in each county, was selected in Iowa in 1989 to assess connection between the state lottery and problem gambling. Respondents were randomly selected from among telephone contacts. The response rate was relatively high (79%). This article reports on a gambling sub-sample (n = 736; 45.4% male; 54.6% female). The authors provide details of response items and how the

data were treated to construct a standardized gambling behaviour scale; relevant statistics (means, standard deviations, Cronbach's Alpha reliability coefficient) for the gambling response items are provided also. Problem gambling was measured as loss of control over gambling and consequences experienced.

Although women respondents participated in a narrower range of gambling behaviours, no significant gender differences were noted in problem gambling. The authors noted significant gender differences in predictors of problem gambling. For example, women's estrangement from a conventional lifestyle and integration into the social world of gambling explained women's experience of problem gambling. Men's gambling, on the other hand, was predicted by patterns of alcohol consumption.

This study provides socio-cultural researchers with important insights into gender differences in gambling participation, factors influencing problem gambling, and related problems.

184 Kaplan, G. S. (1996). Addictions Foundation of Manitoba gambling clients: Two profiles. Manitoba: Addictions Foundation of Manitoba.

The first part of this report describes demographic differences between adult clients of the Addiction Foundation of Manitoba's Gambling Program and clients receiving treatment for substance abuse. Data were from two samples: 3,697 clients who attended residential or community-based substance abuse treatment programs in 1995-96, and 356 clients in the AFM's Gambling Program during the same period. It was found that clients in the Gambling Program, when compared to clients being treated for substance abuse, were more likely to be male; to be 30 to 50 years of age; to be married; to have completed high school or post-secondary education; to be employed; to own their own homes; and to have annual household incomes of \$50,000 or over.

The second part of the report explores the relationship between gender and factors such as abuse history; suicidal ideation; gambling practices and preferences; dollars spent on gambling activities; and the reported effects of gambling. Data were obtained from 353 clients in the AFM's Gambling Program in 1995-96, and chi-square was used to test for statistically significant differences. It was found that females were more likely than males to report a history of both physical and sexual abuse, to have seen a counselor for emotional or mental problems, and to feel depressed about their gambling. Males were significantly more likely to acknowledge the need to cut down on their gambling, to feel guilty about gambling and to gamble until all of their money was gone. Gambling patterns and games of choice were similar except that females were significantly more likely to prefer bingo while males were significantly more likely to prefer sports betting. VLTs and slot machines were the preferred activities of both males and females. Similar responses were provided by males and females in regard to suicide and money spent on gambling. The author notes that these results should be regarded as preliminary, and that much research remains to be done regarding problem and pathological gambling.

185 Ladouceur, R., Boudreault, N., Jacques, C., & Vitaro, F. (1999). Pathological gambling and related problems among adolescents. *Journal of Child & Adolescent Substance Abuse*, 8(4), 55-68.

This study evaluates the prevalence of pathological gambling among adolescents and its association with delinquent behavior, cigarette smoking, drug and alcohol use, and academic achievement. Questionnaires were administered to 3,426 students ages 12 through 18 from eight junior and senior high schools in the Quebec City area. In addition to questions on academic performance, drug and alcohol use, and suicidal behaviors, the questionnaire included the South Oaks Gambling Screen (SOGS) and the Self-Reported Delinquency Scale (SRDS). Results indicate that 87% of adolescents have gambled in their lifetime, 77% have gambled in the last 12 months,

and 13% gamble at least once at week. More than twice as many boys (18.8%) than girls (8%) gamble every week. The current rate of pathological gamblers among adolescents is 2.6%. This rate is higher among boys (3.7%) than girls (1.5%). Adolescents who have parents who gamble are more likely to be pathological gamblers.

Pathological gambling is also associated with cigarette smoking, drug and alcohol use, poor grades, suicidal ideation, suicide attempts, and delinquent behaviors. The practical and theoretical ramifications of these results are discussed.

- 186 Ladouceur, R., & Dube, D. (1995). Brief Report: Prevalence of pathological gambling and associated problems in individuals who visit non-gambling video arcades. Journal of Gambling Studies, 11(4), 361-365.**

This brief report examines gaming activity in arcades and other behaviours among young adults that are correlated with development of pathological gambling. The sampling venues were arcades where gambling machines are not available. Measures of association and correlation are reported, with standard errors and p values. The results indicate a significant relationship between pathological gambling, as measured by the South Oaks Gambling Screen (SOGS), and frequency of visits to arcades among respondents who ranged in age from 11 to 38 years. Additionally, the SOGS scores for this sample were positively correlated with drug use, visits to arcades for non-gambling activities, and missing school in order to gamble. Although age correlated negatively with SOGS scores, low numbers of female respondents preclude gender comparisons.

On the basis of the relationships suggested among variables in this study, the authors call for further investigation of correlated behaviours: in which order do these behaviours appear? How do they influence each other? The authors recognize also that more precise research into the influence of arcade-type games on development of excessive gambling habits is required. The need for further investigation into gender similarities or differences is not highlighted, however.

- 187 Ladouceur, R., Jacques, C., Ferland, F., & Giroux, I. (1999). Parents' attitudes and knowledge regarding gambling among youths. Journal of Gambling Studies, 15(1), 83-90.**

Little is known about the role of parental knowledge and attitudes in the relative efficacy of prevention programs targeting youth gambling. This study assesses parents' attitudes toward youth gambling (ages 5 to 17 years) and their degree of knowledge about young peoples' gambling. The authors surveyed by telephone parents in 279 households in the Quebec City area. The questionnaire included questions from the South Oaks Gambling Screen (SOGS), as well as questions about their gambling habits, attitudes concerning youth gambling in general, degree of knowledge about youth gambling activities, and attitudes toward gambling activities of their own child.

Prevalence of gambling more than once weekly among participants was 74%. Gambling was not perceived to be problematic except in one case. Details of parent responses are described, with frequency distributions provided in detail for each question. The authors conclude that parents overestimate the age when children begin to gamble and parents perceive gambling activities as socially acceptable. Few try to control their children's gambling; 50% do not worry about their children's gambling. The authors suggest that liberal attitudes toward gambling, promoted by positive media coverage, prevail among adults. Parents have little knowledge about gambling, potential negative consequences, and the impact of their own gambling behaviours, however.

This study will be of much interest to researchers involved in the design of prevention programs targeting adolescent gambling.

- 188 Lesieur, H. R., Blume, S. B., & Zoppa, R. M. (1986). Alcoholism, drug abuse, and gambling. Alcoholism: Clinical and Experimental Research, 10(1), 33-38.**

Although it was suspected by the 1980s that pathological gambling, alcoholism, and other drug abuse were related, the evidence was inconclusive. This American study at South Oaks Hospital examined gambling behaviour among patients (n = 458) in an alcoholism and drug dependency treatment facility. A pathological gambling signs index was constructed according to modified DSM III criteria and validated using independent procedures.

The authors describe the sample and methods in detail. Frequency distribution of the results are provided, as well as correlates of the pathological gambling index with counsellors' independent assessment scoring and the scores of family members' assessment of the existence or extent of gambling problems. Further, the index was correlated with socio-demographic variables (only sex showed statistically significant differences), gambling among close kin, patterns of gambling, and alcohol/other drug use and abuse (including use of alcohol and other drugs while gambling and the extent of gambling -related problems).

This article provides historical information about the development of pathological gambling screens and the socio-demographic and other correlates of pathological gambling. Moreover, this study provides data concerning the extent and significance of dual addiction, suggesting that common pathways exist in the pathogenesis of problem gambling and alcohol and other drug addiction. The authors suggest that future research should focus on how gambling combines with alcohol and other drugs to influence the rehabilitation process. Specific recommendations for clinical practice are discussed.

- 189 Lesieur, H. R., Cross, J., Frank, M., Welch, M., White, C. M., Rubenstein, G., Moseley, K., & Mark, M. (1991). Gambling and pathological gambling among university students. Addictive Behaviors, 16, 517-527.**

This study focuses on the question of the extent of pathological and problem gambling among college and university students, and the association between pathological gambling, other forms of deviant behavior, and parental problems. A sample of 1,771 students from six colleges and universities in New York, New Jersey, Oklahoma, Texas, and Nevada was surveyed concerning their gambling behavior and the rate of pathological gambling. The South Oaks Gambling Screen (SOGS) was used as the primary indicator of pathological gambling.

Results indicate that gambling is widespread among college students. Over 90% of males and 82% of females had gambled. One third of the males and 15% of females gambled once a week or more. Slot and poker machines were the most popular forms of gambling. Gambling rates varied by state, with students in the northeast and Nevada gambling more than students in Oklahoma and Texas. Rates of pathological gambling were four to eight times those found in adult populations, ranging from 7.6% in New York to 3.6% in Nevada, with an overall estimate of 5.5%. Fifteen percent experienced some gambling-related problems. Rates of problem and pathological gambling were significantly higher in males than in females. In addition to gender, pathological gambling was significantly associated with racial/ethnic background and religion. Blacks, whites and American Indians had lower rates than Hispanics and Asians, while rates for Jews and Catholics were higher than those for Protestants, atheists and agnostics. Pathological gambling was also associated with non-traffic arrests, having parents with gambling problems, and having parents who abuse alcohol and other drugs. Pathological gambling was only weakly correlated with age, religion, lower grade point average in school, overeating, living in neighborhoods that are "poorer than most," family

income, and parental drug use. It was not correlated with academic year in college, marital status, parent occupation, parental alcohol, and bulimic behavior.

The implications of the findings for further research and social policy are discussed.

081 Lesieur, H. R., & Klein, R. (1987). Pathological gambling among high school students. Addictive Behaviors, 12, 129-135.

The purpose of this study was to explore the extent of pathological and problem gambling among high school students. Eight hundred and ninety-two eleventh and twelfth grade students from four New Jersey high schools were given a questionnaire that asked students what forms of gambling they engaged in, the extent of their gambling, the extent to which gambling created problems in their lives, and also asked for various socio-demographic data.

Ninety-one percent of the students had gambled at least once in their lifetime, 86% gambled in the last year and 32% gambled at least once a week. The most popular form of gambling was card playing for money, followed by casino gambling, sports betting, playing numbers or lotteries. Use of the Pathological Gambling Signs Index, an index based on DSM-III criteria for pathological gambling, indicated that 5.7% of the students showed clear signs of pathological gambling. Socio-demographic variables found to be significantly correlated with the Pathological Gambling Signs Index were sex, parental gambling problems, grade average, and the extent of gambling by the student.

This study shows clearly that pathological gambling exists among youth. This raises the question of the need for education and counselling for pathological gambling in the schools in much the same way as education and counselling are available for drug and alcohol related problems.

190 Lindgren, H. E., Youngs Jr., G. A., McDonald, T. D., Klenow, D. J., & Schriener, E. C. (1987). The impact of gender on gambling attitudes and behavior. Journal of Gambling Behavior, 3(3), 155-167.

Even when other demographic factors are controlled, gender remains a consistent predictor of gambling behaviour. Gender role socialization is most often invoked as an explanation, although the validity of this explanation has not been examined. This study tested the hypothesis that the consistent relation between gender and gambling behaviour is attributable to gender role socialization by examining three aspects of gender role socialization: a double standard of morality, a "guardian of the hearth" role for women, and a "dualism of orientations".

A two stage sampling method was followed. First, a purposive sample of 11 communities in North Dakota was selected because of the rapid expansion of gambling in those areas. This sample included the largest community in each of the state's eight planning regions, and included also three rural communities. Second, individuals within each community were selected to receive a mailed questionnaire through systematic sampling from telephone directories. The return rate was 62% (n = 1,964). The authors identify limitations to their sampling strategy and report, in detail, the relative frequency of responses to questionnaire items by gender. Neither relevant statistics to demonstrate significant differences nor analytical methods are reported, however.

The results offer only modest support for the influence of the double standard on gendered patterns of gambling when respondents are questioned about the moral offensiveness of a range of gambling activities. Support for the guardian dimension, i.e., women's heightened concern about potential threats to the family, is mixed. Small gender differences in knowledge about the legal status of most legal and illegal games is seen to indicate that women and men do not differ

significantly in the dualism of orientation dimension of gambling. The authors conclude that there is only partial support for the gender role socialization hypothesis to explain gender and gambling. They suggest that changes in gender role socialization, particularly decreases in traditional gender role differentiation, explain the lack of consistent findings. Further, they suggest that observed differences may be an artifact of past attitudes in the process of change and warn against over-emphasis on the role of gender in gambling, which may reinforce traditional gender role stereotypes rather than enhance understanding of gambling.

191 Meyer, G., & Fabian, T. (1992). Delinquency among pathological gamblers: A causal approach. Journal of Gambling Studies, 8(1), 61-77.

The aim of this study was to gather empirically based information concerning the delinquency of gamblers who commit illegal acts in order to obtain money for gambling, and to examine causal relations between pathological gambling and delinquency. Data are based on interviews with 437 gamblers from 54 Gamblers Anonymous groups in West Germany. Questionnaires covered a wide range of gambling behavior and characteristics, and included DSM-III-R criteria for pathological gambling as well as the Freiburg Personality Inventory (FPI-R).

Just over half of the sample (54.5%) stated that they had committed illegal actions, mostly nonviolent property offences, in order to obtain money for gambling. Comparisons of this subgroup with those interviewees who did not admit having committed criminal offences showed a number of significant differences. Those who admitted illegal activity were more excessive in their gambling behavior, gambling more frequently, for longer periods of time, for higher stakes, and with greater losses. They also experienced a higher degree of subjective satisfaction through gambling. The delinquent interviewees also showed more pronounced problem gambling behaviors and more psychosocial problems related to gambling. Multiple regression within the framework of path analysis was used to explore causal links between pathological gambling and delinquency.

The results support the hypothesis that pathological gambling can lead to criminal behavior. The article concludes with a discussion of the implications of these results for forensic assessment of the delinquent behavior of pathological gamblers.

192 Meyer, G., & Stadler, M. A. (1999). Criminal behavior associated with pathological gambling. Journal of Gambling Studies, 15(1), 29-43.

The purpose of this study was to investigate the influence of addictive gambling behavior on criminal behavior. A sample of male pathological gamblers from German in- and outpatient treatment centers and Gamblers Anonymous self-help groups (N =300) and a sample of high and low frequency male gamblers from the German general population and army (N=274) completed questionnaires which assessed social attachment, personality, pathological gambling and criminal behavior variables. A number of psychometric test scales were included as well.

Due to difficulties with assembling the two samples, it was not possible to achieve comparable samples with regard to sociodemographic factors, although the samples were similar in age and education level. A causal analysis was carried out using the Lisrel Model. It was found that addictive gambling behavior is an important criminogenic factor. However, this predisposing factor alone cannot sufficiently explain criminal behavior associated with pathological gambling. Personality variables also directly influence the intensity of criminal behavior. Social attachment variables have only an indirect effect. As far as property offences are concerned, it was found that the direct causal effect of addiction behavior is greater than that of personality.

It is suggested that in cases where addiction leads to property crimes, the treatment of pathological gambling behavior is an effective strategy to reduce the risk of relapse as far as criminal offenses are concerned.

- 193 Miller, W. J., & Schwartz, M. D. (1998). Casino gambling and street crime. The Annals of the American Academy, 556, 124-137.**

This article reviews the relationship between casino gambling and street crime. Authors find no compelling evidence to suggest that there is something unique about casinos that causes an increase in street crime. Gambling casinos are no different from any other tourist attraction.

Although the article links crime associated with casinos as being comparable to any tourist attraction, the question remains whether there is a special causal relationship between casino gambling and crime.

- 194 Mok, W. P., & Hraba, J. (1991). Age and gambling behavior: A declining and shifting pattern of participation. Journal of Gambling Studies, 7(4), 313-335.**

Chronological age was negatively related to gambling behaviour in this random telephone survey of 1,011 Iowa residents. Moreover, people of different ages participated in different types of gambling. Historical, developmental, and cohort effects are cited to explain observed patterns across age categories.

The authors provide a succinct and comprehensive review of the relevant literature on age and gambling behaviour; aging effects and human development literature (excluding the cross-cultural literature); self-presentation in American culture; activity, disengagement and continuity theories; cohort effects; and other correlates of gambling, such as social class, marital and employment statuses, gender, community size, religion, and "social worlds" of gambling.

The sampling strategy is described in detail. Similarly, the authors provide detailed information concerning the dependent (addictive gambling behaviour scale constructed from the scope, frequency, amount of money wagered, and amount of leisure time spent), independent (age), and control (mean scores on gambling behaviour constructed via dummy variable regression analysis) variables. Relevant statistics are reported in full in this paper, including means, R^2 , and p values, as well as graphical representations of the results of rate of participation analyses across different types of gambling. Age stratification, anomie, and Veblenian theories (arguments for positive correlation with social class) on gambling were not supported by the results of this study. The relationship between age and gambling behaviour in this study is parabolic; further, a clear linear decline in gambling behaviour with age is demonstrated. Interactive effects are noted among control variables, which the authors note require further study. Historical, developmental, and cohort trends are identified. Policy issues are discussed concerning legalization and regulated gambling.

The authors situate the variable of "age" in the overall picture of gambling, reminding us that this is but one of the many factors involved. Further, they suggest that their interpretation of the results of this study are highly speculative and encourage further research into the dynamics of aging and gambling.

- 195 Moore, S. M., & Ohtsuka, K. (1997). Gambling activities of young Australians: Developing a model of behaviour. Journal of Gambling Studies, 13(3), 207-236.**

As more gambling venues open in Australia, youth gambling as problem behavior has been identified. The aim of this study was to assess youth gambling, including behaviors, attitudes, beliefs and social norms, in a population with easy access to gambling. In addition, the study was designed to evaluate the adequacy of a model for predicting adolescent gambling frequency and problem gambling. The model comprised a combination of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), personality variables (venturesomeness, impulsiveness), and cognitive bias variables derived from Weinstein's (1980) propositions concerning unrealistic optimism about future life events. Questionnaires were administered to a sample of 1,017 adolescents aged 14 to 25 from a university and schools in Melbourne, Australia.

Results indicated relatively low frequencies of gambling and low scores on the problem gambling scale (a modified version of the South Oaks Gambling Screen), with males scoring higher than females on both measures. The TRA was supported with about 30% of the variance of each of gambling behavior and problem gambling accounted for by intentions, attitudes, and subjective norms. Personality factors added significantly to the prediction of gambling. The cognitive bias variables, although independently not statistically significant, further contributed to prediction.

The authors conclude that gambling is a frequent, normative, and approved activity among youth, and can be quite well predicted by a rational decision-making model of behavior, although non-rational factors such as personality and cognitive bias do contribute to the prediction.

- 196 Ochrym, R. G. (1990). Street crime, tourism and casinos: An empirical comparison. Journal of Gambling Studies, 6(2), 127-138.**

This study examines street crime and tourism in five New Jersey communities, three tourist centers (Atlantic City, Seaside Heights, and Wildwood) and two non-tourist areas (Newark and Camden). Only one of the tourist centers, Atlantic City, offers casino gambling. The study also compares crime in Atlantic City before and after expansion of its tourist industry. Crime rates were compared using analysis of variance and multiple regression. Although not dealt with extensively in the interpretation of results, the author notes that while resident population figures are used to determine crime rates, a tourist destination may have a daily tourist population that is several times its resident population.

Results indicated that the three tourist destinations had similar mean crime rates, and that the two non-tourist urban areas had significantly lower mean crime rates compared to the three tourist destinations. This suggests that, at least in New Jersey, tourist destinations have higher mean crime rates than urban centers. When Atlantic City crimes were compared in the period before and after tourism expansion, larceny, robbery and rape were found to be significantly related to tourism. These results are consistent with the findings of previous research, where these same types of crime have been significantly associated with tourism at tourist destinations which did not offer gambling. The author concludes that casino gaming is a catalyst for tourism and one of the social consequences of tourism is increased crime. He suggests that gambling policymakers should view both tourism and street crime as consequences of the legalization of gaming, and that the effects of tourism with respect to street crime will still need to be considered when deciding to offer gambling-free tourist attractions.

- 197 Powell, J., Hardoon, K., Derevensky, J. L., & Gupta, R. (1999). Gambling and risk-taking behavior among university students. *Substance Use & Misuse, 34*(8), 1167-1184.**

Does sensation seeking or risk taking distinguish problem from pathological gamblers? Are risk taking and gambling behaviour positively correlated for male and female university students? This study examines the relationship between risk taking, sensation seeking, and level of gambling involvement in a sample of 63 subjects, 92% (n = 58) having gambled during the past year. A number of scales, including the Sensation Seeking Scale (SSS), Arnett Inventory of Sensation Seeking (AISS), Risk-Taking Questionnaire (RTQ), and South Oaks Gambling Screen (SOGS) were used in this study. Descriptive statistics and results of ANOVA and correlations are provided.

Probable/pathological gamblers reported significantly greater risk taking and sensation seeking behaviour than gamblers exhibiting no problems related to gambling. Further, the RTQ distinguished probable/pathological gamblers from problem gamblers. The SSS and AISS results supported previous research indicating that problem gamblers were significantly greater sensation seekers than social gamblers. Female problem gamblers were strikingly similar to male gamblers with no problems. The authors suggest attributes of and correlations among the scales that may account for some of the results. Weaknesses of the current study are discussed, including potential sampling biases.

This study suggests that the RTQ is an applicable measure for gambling research and serves to distinguish between problem and probable/pathological gamblers. Moreover, similarities between males and females on reported risk-taking and/or sensation seeking are noted. A further useful feature of this paper is the summaries that the authors provide, in tabular form, of adult and adolescent gambling prevalence estimates and instruments used in various studies to measure sensation-seeking and risk-taking. The authors conclude with implications for future research, suggesting that this study supports using multiple measures in combination with longitudinal approaches.

- 198 Smart, R. G., & Ferris, J. (1996). Alcohol, drugs and gambling in the Ontario adult population, 1994. *Canadian Journal of Psychiatry, 41*(1), 36-45.**

This study explored the link between gambling, alcohol, and drug problems among Ontario adults, and examined the relationship between expenditures on gambling and type of gambling with gambling problems. The data were collected in a telephone survey of 2,016 randomly chosen adults, using a gambling problems scale and an alcohol problems scale, both of which are described in the article. Details are provided concerning the data collection method. A demographic profile of respondents by involvement in gambling activities is provided.

The results of cross-tabulations and logistic regression are given in detail, with the results of the latter analyses reported as odds ratios. The amount spent on gambling in the past 30 days was the most significant predictor of gambling problems; alcohol dependence (on the ICD-10 scale) and age were important predictors also. The results indicate that heavy drinking and drinking problems are associated with higher levels of spending on gambling and self-report of gambling problems.

Although of interest, the study findings will be difficult to compare to the larger literature on gambling prevalence and other correlation studies based on the South Oaks Gambling Screen (SOGS). The implications for treatment of co-morbidity are discussed.

- 199 **Smith, G., & Wynne, H. (1999). Gambling in Canada: Triumph, tragedy, or tradeoff? Gambling and crime in Western Canada: Exploring myth and reality. Calgary, AB: Canada West Foundation.**

This study was commissioned by the Canada West Foundation as one of a series of research efforts dealing with gambling issues in Canada and examines linkages between gambling and crime and the complications created for law enforcement agencies and the criminal justice system. Three aspects of gambling and crime comprise the focus of the report: illegal gambling, crimes associated with legal gambling, and crimes committed by problem/pathological gamblers. Of particular interest to socio-cultural researchers is the discussion of the history and status of Canadian law on gambling, amount and types of legal and illegal gambling currently available in western Canada, and criminal behaviour linked to gambling. The authors consider how gambling-related crime is monitored and enforced, and discuss the policy implications of their findings.

The study is exploratory and intended to generate hypotheses for further research, in accordance with grounded theory methodology. Data for this study were gleaned from official police and governmental regulatory agency accounts, media archives, and perceptions of senior law enforcement, criminal justice, and gaming industry officials obtained from face-to-face and telephone interviews. Illegal gambling appears to be concentrated in major urban centres in western Canada. Patrons of illegal gambling are predominantly male, from a range of professional and blue-collar occupations. Expanded legal gambling has had a dampening influence on illegal gambling; similarly, licensing and regulatory procedures have had a positive impact on corruption in legal gambling, which does not appear to have been infiltrated by organized crime. The authors discuss the types of crimes against persons and property commonly associated with problem gambling. Moreover, certain types of gambling venues such as casinos and racetracks attract certain types of crimes. Few gambling-related cases appear before the courts; crimes brought before the courts are generally related to payment of debts or illegal gambling.

A summary report, highlighting the main findings, is available.

- 200 **Templer, D. I., Moten, J., & Kaiser, G. (1994). Casino gambling offense inmates: What are these men like? *Journal of Gambling Studies*, 10(3), 237-246.**

This study examines characteristics of men incarcerated for casino gambling offences in Nevada. Data on 28 inmates at a correctional center near Las Vegas were obtained from pre-sentence investigation reports and medical charts, and included demographics, present crime, criminal history, and scores on the Raven's Standard Progressive Matrices and the Minnesota Multiphasic Personality Inventory (MMPI, including the MacAndrew Alcoholism Scale).

Twenty-seven of the inmates cheated using slot or video poker machines. Compared to the general inmate population, a disproportionate number was white; there were no black or Native American inmates incarcerated for this crime. Gaming offenders were significantly older (57% over 40) than the general population, where 27% were over 40. They also had significantly more aliases than the general population inmates. None of the gambling offenders had a history of violent felony convictions. They had, however, a history of marked social, marital, occupational, and financial instability, in addition to a criminal life style. Scores on the MacAndrew Alcoholism Scale, MMPI, and Raven's did not differ significantly from those of the general prison population.

While acknowledging the need for inferential caution due to methodological limitations, the authors conclude that if there is a casino gambling offence "type" it could be characterized as manifesting criminality, dishonesty, inadequacy and social instability. Practical implications for management, rehabilitation and prognosis are discussed.

201 Thomas, W. (1996). Senior citizen gambling study for the Whitecourt area of Alberta. Whitecourt, AB: AADAC.

The purpose of this study was to establish baseline statistics for the Whitecourt area on seniors' gambling behavior. The study focuses on the relationships between gambling and addictions, long-term health problems, conflicts with loved ones and financial problems. It also examines potential reasons for seniors' gambling and their attitudes and perceptions concerning gambling. Data were gathered through surveys completed by a stratified sample of 134 adults aged 55+. Details of survey methodology and instrument development are provided, and a copy of the survey instrument is appended.

Two per-cent of respondents reported that they had a gambling problem, while 5% admitted to gambling once a day, 3% reported borrowing money to cover gambling debts, and 10% had conflicts with loved ones over gambling. One-quarter of those surveyed believed betting with a friend for money was not gambling, nor was playing the stock market (19%). Although 90% of respondents gambled, 25% disapproved of gambling and 39% approved but felt it should be more strictly regulated. Lottery tickets, raffles and bingo were the activities of choice. Males tended to be more in favor of gambling and gambled more frequently than females. Thirteen percent of seniors admitted to losing track of time when gambling, while 5% of those who drank alcohol admitted to drinking more in lounges since gambling was introduced. Seniors who were in the lower income bracket, were part-time employed or drank alcohol in lounges were most likely to view depression as a reason for gambling.

The author concludes that although seniors are quite well informed about gambling, more gambling education is needed and information on agencies that can provide help for problem gamblers needs to be more widely available. He also urges local agencies and communities to get more involved in providing alternatives to gambling for seniors.

202 Toneatto, T., & Skinner, W. (2000). Relationship between gender and substance use among treatment-seeking gamblers. e Gambling Research, The Electronic Journal of Gambling Issues, (1).

Little research attention has focused on gender differences in psychoactive substance use among gamblers. The purpose of the present study was to describe the relationship between gender and patterns of legal, illicit and prescribed psychoactive substance use in a sample of pathological gamblers. Two hundred individuals (150 males and 50 females) seeking treatment for problem gambling were assessed with respect to lifetime and current use and abuse of licit and illicit substances. Gambling problem severity was measured using the DSM-IV criteria for pathological gambling and the South Oaks Gambling Screen (SOGS). The Gambling Behavior Questionnaire was used to assess other aspects of gambling behavior.

As a group, they were found to have experience with psychoactive substances exceeding that reported for the general population. There were no gender differences in reported rates for problems with, or treatments for, drug, medication or alcohol use. However, female problem gamblers reported significantly greater experience with psychotropic medications, in particular anti-depressants, anxiolytics, and sedatives, both over the lifetime and during the treatment follow-up period.

This result parallels the relationship observed between gender and psychiatric medications in the general Canadian population. While substance use among treatment-seeking problem gamblers does not appear to be a relevant clinical issue, the elevated rates of psychotropic drug use,

especially among females, suggest that there may be considerable psychiatric comorbidity in this population. The authors call for additional research to evaluate the impact of current medication use and/or psychopathology on treatment outcomes.

- 203 Trevorrow, K., & Moore, S. (1998). The association between loneliness, social isolation, and women's electronic gaming machine gambling. *Journal of Gambling Studies*, 14(3), 263-284.**

Although women's participation in gambling has increased with the introduction of electronic gaming machines (EGMs) and androgynisation of gambling venues in Australia, little research has explored female gambling patterns and motives. This study examines the hypothesis suggested by previous research that the most common motivations for women gambling were boredom, loneliness, and isolation. In particular, the study was designed to explore the extent to which women EGM gamblers experience loneliness, the role of social networks, and perceived gambling norms. The research literature on women and gambling, as well as related themes, is reviewed.

Comparative data were obtained from a survey of 95 adult female English-speaking non-clinical sample of EGM gamblers and non-gamblers, matched for age, education, and geographic location (Melbourne, Australia). Four different measures were used: gambling frequency, gambling amount, length of a typical gambling session, and problem gambling (South Oaks Gambling Screen; SOGS). The revised UCLA Loneliness Scale was used as a measure of loneliness and the Gambling Social Norms Scale to investigate participants' perceptions of approval of gambling among significant others. Social network adequacy was assessed, albeit crudely, through measurement of friendship satisfaction and whether she was partnered/unpartnered, employed/unemployed, and a member of a social/sporting organization or not. Friendship satisfaction was assessed by responses to a set of statements about friendship status. The authors report, in detail, procedures followed and relevant chi-square and correlation (F test with Scheffe comparison) statistics.

Chi-square analysis revealed no significant differences between women in the sample who gamble or do not gamble on the variables age and level of education. In general, women who gamble did not report higher levels of loneliness or social isolation; women classified as problem gamblers were significantly more lonely and involved in social networks where gambling was normative, however. Limitations of the study design are discussed. Although the authors suggest various explanations, they argue that issues raised by this study require longitudinal studies for resolution.

- 204 Trott, J. C., & Griffiths, M. (1991). Teenage gambling: A pilot study. *Psychological Reports*, 68, 946.**

This brief report describes a study of 40 adolescent fruit machine players in southwest England (51 males, 2 females). A structured questionnaire explored socio-demographics, gambling patterns, and weekly expenditures. The authors note that the reported patterns are quite costly to sustain, yet only one person admitted to stealing and only two claimed they were "addicted". They conclude that this activity is male-dominated and tentatively suggest that gambling leads to dependency for a small minority of these gamblers.

This study is limited by small sample size and self-reported assessment of dependency. No assessment of dependency other than self-report is mentioned.

- 205 Vitaro, F., Ferland, F., Jacques, C., & Ladouceur, R. (1998). Gambling, substance use, and impulsivity during adolescence. Psychology of Addictive Behaviors, 12(3), 185-194.**

This study examined the relationship between problem gambling and substance use in adolescents, and whether gambling and substance use problems have a common link with impulsivity. Data were collected from a community sample of 765 adolescent boys from disadvantaged neighborhoods in Montreal, Quebec. The sampling procedure assured homogeneity in ethnicity and socioeconomic status. Gambling and substance use were assessed when adolescents were 17 years old using the adolescent version of the South Oaks Gambling Screen (SOGS-RA) and the Personal Experience Screening Questionnaire (PESQ). Self-reports of impulsivity and venturesomeness (risk taking) were assessed using the Eysenck Impulsiveness and Venturesomeness (Risk Taking) scales when adolescents were 13 and 14 years old, and teacher ratings of impulsivity were collected using three items from the Social Behavior Questionnaire when the boys were 12 and 13 years old. Extensive discussion is given to the validity and reliability of the research instruments. Participants were separated into three groups: problem gamblers only (N=23), problem substance users only (N=40), and a comorbid group of both problem gamblers and problem substance users (N=22).

Results indicated that 5% of the total sample were problem gamblers, 6.9% were problem substance users, and 2.9% were comorbid. Problem gamblers were more at risk of also being problem substance users, and vice versa, than nonproblem participants, with 39.5% of problem gamblers and 24.5% of problem substance users being comorbid. Analysis of variance and regression analysis were used to test for differences in impulsivity scores and teacher impulsivity ratings. It was found that comorbid participants were significantly more impulsive than either problem gamblers only or problem substance users only. These findings are discussed in light of the possibility that problem gambling and substance use develop simultaneously during adolescence and share a common impulse-control deficits origin.

- 206 Vitaro, F., Ladouceur, R., & Bujold, A. (1996). Predictive and concurrent correlates of gambling in early adolescent boys. Journal of Early Adolescence, 16(2), 211-228.**

The rapid proliferation of legalized gambling and involvement of adolescents in gambling activity has sparked interest among researchers in the links between early onset of gambling and other behaviours. The authors of this study begin by reviewing the literature on adolescent gambling, including prevalence studies indicating that gambling is now relatively common among adolescents and begins at early ages. Pathological gambling patterns are found among these younger gamblers at disturbingly high levels. Moreover, gambling is linked to other behaviour problems including alcohol and other drug use and abuse, delinquent behaviours, and antisocial personality or criminality. They note that our understanding of the development of similar personality correlates among gamblers, delinquents, and substance abusers is unclear, however, particularly concerning the antecedents of these behaviours in early adolescence. The literature suggests that the common antecedents among these habits may lie in personality correlates of aggressiveness, novelty seeking, and harm avoidance. The present study of boys (n = 631; Quebec) explores the relationship between gambling, substance abuse, and delinquency in early adolescence, and seeks to determine the common underlying personality correlates of those habits.

The study employed both person-oriented (focusing on individual profiles, to explore non-linear relationships between variables) and variable-oriented (focusing on associations between variables, to establish concurrent and predictive links between variables) approaches. In addition to 13-year olds' self-reported gambling, delinquency and substance abuse at ages 10 and 11, the study included teachers' and mothers' reports on hyperactive/inattentive, impulsive, aggressive/antisocial, and anxious/withdrawn behaviours at ages 10 and 11. Socio-economic

variables were controlled. A group of 13-year old frequent gamblers was compared with a contrast group of non-gamblers. Details of the sampling strategy, measurement scales, group classification criteria, and procedures are provided. Correlation coefficients were calculated to verify the stability and concordance of teacher-parent ratings, as predictors of delinquency and dependent measures for gambler and non-gambler group comparisons. Pearson's correlation coefficients, calculated between gambling and substance use and delinquency, indicated that the three habits were related in varying degrees at age 13 years. Similarly, teacher and parent ratings, analyzed by semi-hierarchical regression analyses, variously predicted delinquency, substance use, and gambling. Multivariate analyses of covariance (MANCOVAs) and ANCOVAs compared frequent gamblers to non-gamblers on concurrent measures of delinquency and substance abuse, and investigated whether these two groups can be distinguished by behavioural characteristics. Significant group effects were obtained for a number of comparisons. All statistics are reported.

This study provides rigorous empirical evidence suggesting that delinquency, substance use, and gambling as concurrent outcomes with partly similar antecedent variables, such as low harm avoidance (inhibition deficits). The results do not support alternate hypotheses that co-morbidity between substance abuse and pathological gambling was related to inadequate impulse control and high distractibility. The authors discuss the several explanatory hypotheses that may account for these results observed in this study. The linkage of low harm avoidance among gamblers to cognitive distortions is less successfully integrated into their discussion. Limitations of the research design are described.

207 Volberg, R. A., Reitzes, D. C., & Boles, J. (1997). Exploring the links between gambling, problem gambling, and self-esteem. *Deviant Behavior: An Interdisciplinary Journal*, 18, 321-342.

In this study, a probability sample of 1,551 gamblers, non-gamblers, and problem gamblers in the general population of the state of Georgia provided data for a descriptive analysis of demographic and social psychological characteristics. The authors begin with a review of major sociological and social psychological theoretical approaches to problem gambling and the development of the South Oaks Gambling Screen (SOGS). The present study tests the assumption that problem gamblers have low self-esteem as suggested by addiction behaviour theory, in contrast to suggestions that problem gambling is a matter of impulse control. The relevant sociological literature on deviance and psychological literature on addiction (in which the discussion is limited to disease models only) and impulse control are reviewed and the relative lack of social psychological data is noted. The South Oaks Gambling Screen and revised versions (SOGS, SOGS-R), and its application in measuring problem gambling at the population level, is discussed in some detail.

The authors describe the sample design and variable construction. The data were analyzed by means tests and logistic regression analyses. Three groups in the general population of the state of Georgia were identified: non-gamblers, non-problem gamblers, and problem gamblers. Logistic regression analysis identified factors that distinguish among the 3 groups and clarify the relationship between problem gambling and low self-esteem, as well as between non-problem gambling and high self-esteem.

Detailed descriptions of the findings are provided in extensive tables, including demographic profiles and psycho-social characteristics. Although the 3 groups overlap in some characteristics, distinct differences emerged also in predictive variables of race, gender, marital status, employment status, and self-esteem. Non-gamblers were most likely to be older white women with modest education and income; problem gamblers were most likely to be young, non-white blue-collar males with significantly lower self-esteem scores and embedded in a subculture that supported gambling.

The authors conclude that the data confirm a relationship between gambling and self-esteem and are consistent with a socio-cognitive model of problem gambling. Implications for potential increases in problem gambling during economic downturns, in the context of expanded legalized gambling and marketing of new forms of gambling to women and young people, are discussed.

- 112 Westphal, J. R., Rush, J. A., Stevens, L., & Johnson, L. J. (2000). Gambling behavior of Louisiana students in grades 6 through 12. *Psychiatric Services*, 51(1), 96-99.**

The prevalence of problem and pathological gambling behavior, the average age of onset of gambling behavior, and the co-occurrence of gambling disorder with substance use were studied in the Louisiana student population grades 6 through 12. A sample of 12,066 students in Louisiana schools was surveyed about gambling using the South Oaks Gambling Screen—Revised for Adolescents (SOGS-RA). It was found that fourteen percent of students never gambled, 70.1% gambled without problems, 10.1% indicated problem gambling in the past year, and 5.8% indicated pathological gambling behavior in the past year. Weekly or more frequent lottery play was reported by 16.5%. The average age of onset of gambling behavior was 11.2 years. Fifty-nine percent of the students with problem and pathological gambling behavior reported frequent alcohol and illicit drug use. A significant minority of Louisiana students in grades 6 through 12 (15.9%) acknowledged gambling-related symptoms and life problems.

The association of problem and pathological gambling with use of alcohol, tobacco, and marijuana provides preliminary support for the inclusion of gambling among other adolescent risk behaviors.

- 208 Winters, K. C., Stinchfield, R., & Fulkerson, J. (1993). Patterns and characteristics of adolescent gambling. *Journal of Gambling Studies*, 9(4), 371-386.**

The growing popularity of gambling activities among adolescents has stimulated interest in the nature of gambling among young people. This telephone survey, which employed a state-side sample of 15 to 18 year olds (n = 702), compares groups defined by gender, age, geography, and psycho-social correlates of adolescent gambling. The authors of this study review the data on adolescent gambling since the mid-1980s that, based on high school data, indicate widespread involvement in gambling and high rates of problem and probable pathological gambling. They note that estimating the rate of problem or pathological gambling among adolescents presents challenges to researchers, largely due to the range of gambling activities available and the questionable validity of criteria and scales used to estimate rates of problem and pathological gambling among adolescents.

The sampling strategy and characteristics of participants are described. Questions concerning the representativeness of the sample, which were addressed through post-hoc chi-square analyses, are discussed. The telephone questionnaire is described in detail, particularly the construction of a revised adolescent South Oaks Gambling Screen (SOGS-RA). Statistical analyses included descriptive statistics of gambling involvement variables, and chi-square and Student's t-tests to assess the statistical significance of group differences. All statistics are reported for the following analyses: lifetime and past year gambling patterns, onset activities, gender and locality, problem severity, grade of onset, amount of money gambled, activities played by problem gamblers, and psycho-social factors.

The authors note that the data indicate that gambling is not a problem for most youth, with gambling typically occurring infrequently, little money being spent, and an absence of problem signs and symptoms among most adolescents. Preferred forms of gambling are noted, with most appearing to be benign and recreationally-oriented. Other forms require adult involvement or illegal acquisition from a vendor, however. Several demographic and psycho-social correlates of

adolescent gambling were identified in this study, consistent with previous studies. For example, study subjects who were males, regular drug users, and youth with a history of delinquency, poor grades, and with parents who gamble were more likely to be involved with gambling and have higher problem severity scores. The authors note that the link between delinquent behaviour and problem gambling is reminiscent of Jessor's problem behaviour theory of adolescent alcohol abuse, thus suggesting that heavy gambling may be an appropriate addition to the cluster of adolescent problem behaviours. Further research is suggested, including studies on the influence of perceived liabilities and assets on the development of gambling and related problems, family studies concerning parents' contributions to youthful gambling, and longitudinal studies. Methodological challenges are discussed also.

209 Wood, R. T. A., & Griffiths, M. D. (1998). The acquisition, development and maintenance of lottery and scratchcard gambling in adolescence. Journal of Adolescence, 21, 265-273.

This study examined the acquisition, development and maintenance of National Lottery and instant scratchcard gambling among adolescents in the UK. Other factors, such as attitudes toward gambling and levels of problem gambling, were also examined. Questionnaires on gambling behavior, incorporating DSM-IV-J criteria for pathological gambling, were administered to 1195 adolescents aged 11 to 15 years. It was found that large numbers of adolescents had played the National Lottery (48%) or instant scratchcards (30%). In general, lottery and scratchcard activities were not perceived to be forms of gambling. A statistically significant correlation ($p < .0005$) was found between parental and child participation in both the National Lottery and scratchcards. Most participants had their lottery tickets (71%) and scratchcards (57%) bought for them by their parents. A significant number of adolescents reported that they thought they would win lots of money on these activities. Six per cent of adolescents fulfilled the DSM-IV-J criteria for pathological gambling, the majority of which were males. The authors conclude that although the full social implications of National Lottery and scratchcards have yet to be determined, there is evidence that they could contribute significantly to an increase in problem gambling.

210 Yeoman, T., & Griffiths, M. (1996). Brief Report: Adolescent machine gambling and crime. Journal of Adolescence, 19, 99-104.

In the UK, fruit machine gambling is a legal and popular activity among adolescents and children. Considerable evidence suggests that fruit machine gambling is problematic for a minority of adolescents and linked with socially unacceptable behaviours such as theft. This survey explored the relationship between criminal activity and gaming machine use among adolescents ($n = 1851$) from Juvenile Forms revised to include information about problem gambling that were completed by police officers during a one-year period. Frequency data by gender, mean ages, schooling, family background, and type of offense are reported, indicating that 3.9% of the cases ($n = 72$) had some association between the offence recorded and machine playing. Several typical cases are discussed in detail. The data suggest that adolescents involved with heavy gaming machine use are largely from lower income families, with strained family relationships. Most were first-time offenders.

Limitations of the survey design and data are discussed. The authors suggest that this study should be replicated in other parts of the UK. Moreover, they urge that a greater depth of information is required concerning the role of problem gambling in juvenile crime.

E. DESCRIPTIVE AND POLICY STUDIES

- 211 **Abt, V., McGurkin, M. C., & Smith, J. F. (1985). Toward a synoptic model of gambling behavior. Journal of Gambling Behavior, 1(2), 79-88.**

The authors of this article propose that gambling behavior is not strictly motivated by an underlying pathology. Traditional explanations of this behavior, which emphasize idiosyncratic or psychopathological motivations for gambling behaviour, ignore the impact of the socialization process. This article examines the social construction of gambling behaviour and attempts to integrate macro level (social, cultural) and micro level (individual) causes of gambling behaviour in a synoptic, general, and inclusive model.

Gambling is widely accepted in our society, is something that most people will try at some point in their lives, and achieves meaning from the social and cultural contexts in which it occurs. Like any other 'drug' that people may try, the user is socialized to understand how to use it. Over time, as the gambler becomes more familiar with cultural texts or rationales provided by the context in which gambling occurs, the gambler internalizes cognitive rules. The synoptic model proposes a process by which gamblers continuously compare their gambling behavior with the cognitive rules by which they define gambling. The degree of consonance gamblers perceive between their own gambling behavior and their cognitive image of the standard gambler determines the gambler's behavior in subsequent gambling events.

The authors compare the social construction of gambling behaviours among non-gamblers, gamblers, and pathological gamblers, although citations to support the typology and descriptors are not provided. Eight sets of variables, at the macro and micro level, are suggested to conceptually differentiate the gambler's reality. Macro level variables include status, situational, contextual, social transformation rules, and gambling event. Micro level variables include psychological and transformation rules, gambling action, and social feedback signals. Each of these variables is described in detail and linked to the current literature. This article provides researchers interested in the socio-cultural context of gambling with a lively discussion of the model and critiques conventional approaches as leading to emphasis on psychopathological gambling.

This article makes an important link between social theory, particularly structural and dramaturgical sociology, and cognitive psychology in understanding gambling behaviour. More investigation of the synoptic model, and the influence of culturally different contexts, will need to take place.

- 125 **Betbeze, J. P. (1987). Les jeux populaires français et leurs mecanismes de diffusion. Ethnologie Française, 17(2/3), 189-197.**

This article, which reports on gambling in France, describes different forms of gambling activity and the impact of positive upturns in the national economy. Different forms of gambling are examined, such as sports lotteries, casinos, national lotteries, and para-mutual betting. Researchers interested in international experiences with gambling will find this article informative in its description of the structure and availability of gambling, as well as trends in gambling activities in France. Variation amongst different forms of gambling are noted; the general rules underlying various forms are the same, however. The author estimates that at least half the population is involved in gambling on a regular basis, but no reference is given for the source of this information. **Note:** The article is written in French.

- 212 Blaszczynski, A., & Farrell, E. (1998). A case series of 44 completed gambling-related suicides. Journal of Gambling Studies, 93-109.**

Case records from 44 suicides where a putative gambling problem was noted by the State Coroner, occurring between 1990 and 1997 in the State of Victoria, Australia, were analyzed in this study, which sought to describe the characteristics of suicides where gambling was considered a major contributing or motivating factor. The literature concerning links between suicide and gambling is reviewed. Data related to demographic information, method of suicide, suicide notes, evidence of co-morbid psychiatric conditions, history of prior suicide attempts, past help seeking behaviours, gambling activities, criminal offences, and other significant psycho-social factors were extracted from case records. The data were categorized by gender. The authors note limitations to interpretation of the data, such as inconclusiveness of the role of gambling in the suicide (i.e., as the singular or predominant motivation), and provide examples to support the significance of gambling in these cases.

Detailed socio-demographic data are provided, as well as data related to the suicide methods and other variables, but the validity and reliability of the information remain problematic as noted by the authors. Despite methodological issues, but consistent with previous studies, this study supports the emerging profile of a potential suicidal gambler as that of a 40 year old male of lower socio-economic status experiencing a current financial and relationship crisis, depression, and a history of prior help-seeking and suicidal behaviours. Further, the authors suggest that the highest risk period may follow a serious loss, where there is imminent disclosure of a criminal offence or extent of gambling-related debts.

- 213 Blevins, A., & Jensen, K. (1998). Gambling as a community development quick fix. The Annals of the American Academy, 556, 109-123.**

Four gold-mining towns in South Dakota and Colorado turned to the legalization of limited-stakes gambling as a means of economic revitalization. Differences in state legislation resulted in different patterns of development. In Deadwood, South Dakota, many small casinos were established while in the three Colorado communities fewer but much larger casinos emerged. Retail businesses were cannibalized as gambling became the dominant industry in all four towns. Resident populations and schools experienced little change with most of the change occurring in vehicular traffic, law enforcement, and infrastructure. The authors suggest that gambling may be just an inefficient form of taxation that cannibalizes other businesses.

This paper links gambling, increases in crime, and need for law enforcement, but does not delve into socio-cultural issues extensively.

- 214 Campbell, C. S., & Smith, G. J. (1998). Canadian gambling: Trends and public policy issues. The Annals of the American Academy, 556, 22-35.**

This article takes a broad look at Canadian gambling. Canadian gambling laws are discussed; each province in Canada is given authority over implementing these laws and there are several different ways of interpreting them. Thus, several models of gambling regulation have emerged across the country. The prevalence of problem gambling in Canada is discussed while focusing on the methods of gambling, the people who gamble and the programs that are in place to help those who develop a gambling problem. Differences between gambling in Canada and in the United States are illustrated as well as the growing backlash of Canadian society against certain types of gambling that seem to be particularly problematic (i.e., VLT's). This article concludes with a brief critique of Canadian gambling policies.

This article is a useful sociohistorical review of Canadian gambling laws.

- 215 Dixey, R. (1987). Bingo, the 1960 betting and gaming act, the culture industry, and...revolution. Leisure Studies, 6(3), 301-313.**

This paper is an attempt to place bingo within the economic and political realities of the world by discussing the implications of the 1960 Betting and Gaming Act for leisure in working class British life. Bingo is an activity that is said to have emerged from what is called the 'culture industry' in Britain. The culture industry is said to exist in order to ensure that people can enjoy their leisure time with as little effort and thought as possible, perhaps marking.

The article includes references and discussion of the historical literature on bingo in popular culture, particularly working class life, in Britain and provides a provocative discussion of the culture industry. For example, the author suggests that gambling functions to dramatize and parody economic life and one's economic position, enabling those who have little opportunity to do so in the work place to exercise decision making, discussion of options, and collection of knowledge. It is pointed out that bingo, as a game of pure chance, is pursued largely by women and low status groups, who have the least economic power.

The author makes some important links in describing bingo as the perfect product of the culture industry, and suggests that the influence of the supply structure in shaping demand is underestimated by leisure studies. Further, this article provides a critique of leisure studies which tend to ignore the structural bases of an activity such as gambling, and general theories of gambling that tend to shift the focus from situational determinants to the individual personality or attitude of the gambler.

- 216 Fessler, J. L. (1996). Gambling away the golden years. Wisconsin Medical Journal, 95(9), 618-619.**

This article highlights the problem of very little research available on the issue of elderly problem gambling. The elderly may be an elusive population who are not isolated from convenience stores and casinos, however, older adults are a vulnerable population and problem gambling symptoms may be difficult to detect. The number of elderly is growing and this issue needs to be accurately addressed.

This article points out the obvious need for more research on gambling and the elderly.

- 251 Gabriel, K. (2000) Gambling and spirituality: A new anthropological perspective [Web Page]. URL <http://www.nmia.com/~kgabriel/myths.html>.**

Based on the book Gambler Way, also written by the author (out of print, but available from the author), this article explores issues concerning gambling among Native American groups in terms of spirituality. The positions of proponents and detractors of gambling are described and a "middle ground" position, spiritual rather than secular, is advocated. The historical linkage of gambling with spirituality in pre-industrial societies is discussed, with examples drawn from ancient Egypt and biblical texts, as well as mythology and ritual in Icelandic, Hindu, ancient Chinese and Greek, and other early societies. The experience of early colonizers in North American with gambling, the origins of moral judgments about gambling, and the severance of gambling and spirituality in western thought, are treated briefly.

Ethnological records dating to the fifteenth century provide evidence of the historical depth of gambling, and problems associated with excessive gambling, among Native American societies. The role of ritualized gambling in revitalization movements is described also, with some detail concerning the Pawnee Converted Ghost Dance hand game. The author comments about the role of

traditional gambling in contemporary cultural revitalization movements and, having surveyed more than a hundred gambling myths from the Arctic to Meso-America, concludes that gambling played a large metaphoric role in Native spiritual thought and beliefs, functioning to balance good and evil, and is commonly used as a metaphor for spiritual growth. In fact, concludes the author, gambling addictions are a form of spiritual seeking in which the gambler is looking for a personal transformation in the moment of exhilaration, with often cataclysmic results.

This essay is a succinct introduction to gambling and spirituality, providing a wide-angle lens view of the spiritual aspects of gambling across many different societies. The primary manuscript from which this essay is drawn is, unfortunately, out of print.

- 217 Griffiths, M. D. (1990). *Addiction to fruit machines: A preliminary study among young males. Journal of Gambling Studies, 6(2), 113-126.***

Typically, gambling is seen as an adult problem, but this paper illustrates the growing existence of adolescent gambling problems. Eight adolescent 'self confessed' slot machine addicts were studied and the findings are outlined in this paper. The author focused his study on several aspects of the adolescent gambling problem including: influence of the peer group, factors influencing the onset of gambling, other gambling activities the youth may be participating in, the excitement and thrill that is experienced while gaming, the role of skill in playing and what problems they may have experienced in their life as a result of gambling.

All participants were white, English males. There was not a formal screening for DSM3R criteria. The study did generate some important themes of adolescent gambling for further research.

- 218 Kaminer, V., & Petry, N. M. (1999). *Gambling behavior in youths: Why we should be concerned. Psychiatric Services, 50(2), 167-168.***

The authors point out the current lack of knowledge about and failure to respond to adolescent gambling behavior. Rates of problem gambling among adolescents are higher than in the adult population, with a subgroup being vulnerable to developing future gambling problems. Levels of gambling severity as well as correlates of gambling behavior are reviewed. A call for a systematic effort into the epidemiological and clinical assessment, prevention, and treatment of adolescent gambling is made.

The need for the examination of gender, race, ethnicity, and sociodemographic variables of adolescent gambling is specifically addressed.

- 219 Kelly, J. M. (1988). *Compulsive gambling in Britain. Journal of Gambling Studies, 4(4), 291-300.***

This article describes the effects of the Gaming Act passed in England in 1968. Legislators in the House of Lords actively debated ways to help compulsive gamblers. Parliament adopted the "48 hour rule", designed to make the impulsive gambler have to wait for two days, put severe restrictions on casino check cashing, and limited the number of slot machines to two per club. A proposed certificate of exclusion for compulsive gamblers was defeated. Sadly missed, however were the amusement machines in public arcades paying small cash prizes. With unlimited availability, these machines have proved to be a serious problem for children.

The author describes how legislation can help deal with the problem of compulsive gambling, and how serious omissions can result in serious social problems such as youth gambling in amusement arcades. The impact of the article would have been enhanced by more comparison to other jurisdictions and approaches.

- 220 Lorenz, V. C. (1990). State lotteries and compulsive gambling. Journal of Gambling Studies, 6(4), 383-396.**

Since gambling was legalized there has been a dramatic increase in the amount of compulsive gambling. It has been claimed that state lotteries in particular have contributed to this increase. The active advertising campaigns of these lotteries often include depictions of other types of gambling (i.e., cards and horse racing), which is thought to contribute to an increase in all types of gambling and, thus, all types of problem gambling. It is also thought that this advertising has broadened the profile of a compulsive gambler, which is no longer limited to middle aged, middle class, white businessmen. The problem of compulsive gambling has grown to encompass all population demographics. Public policy issues including lottery advertising, vendor responsibility and legislative/lottery support given to address the problems of compulsive gambling are discussed in this paper.

The article reviews need for constructive action in dealing with pathological gambling.

- 221 McMillen, J. (1996). Gambling cultures: Studies in history and interpretation (Culture: Policies and politics. London, England: Routledge.**

The emergence of gambling as a legitimate field for scholarly work has occurred as gambling has become both a pervasive and diverse cultural expression as well as a growing field of political and commercial activity. This important book explores the complex nature of gambling from an international perspective that emphasizes the diversity of gambling activities and the rich potential for future research. Moreover, represented among the multidisciplinary collection of writings in this edited book are social history and cultural analysis, political economy, philosophy, feminist theory, social psychology, and law.

One key theme discussed is the relationship between gambling policy and the socio-cultural environment. A second theme is the rapid global spread of commercial gambling and technology, including impacts on traditional cultures and social practices. The separate chapters provide a rich and stimulating discussion of theoretical developments in gambling studies; the transformation of gambling in various historical and geographical contexts; different forms of gambling as distinct cultural practices; the relationship between modern commercial gambling policies, cultural practices, and social structure; and the future directions of gambling policies from a variety of theoretical perspectives. The editor points out that the collection of writings included in this book represent analyses from the perspective of western industrialized societies, particularly the private sector, and do not include perspectives from Asia or contrasts between socialist and capitalist countries.

Despite these limitations, this book fills an important gap in the study of socio-cultural dimensions of gambling by providing a scholarly and compelling multidisciplinary treatment of gambling which is situated in contemporary social science theory.

- 222 Nova Scotia Lottery Commission. (1993). Gaming in Nova Scotia. Nova Scotia: Government of Nova Scotia.**

This document is the initial report of the Nova Scotia Lottery Commission, which was directed to study all current gaming issues in Canada and to report and make recommendations to the Government on the impact of such issues on Nova Scotia. Based on written submissions, telephone comments, public meetings, and the results of an independent public opinion survey, the

Commission found that Nova Scotians are particularly concerned with video gambling, possible casino operation, and bingo.

The report begins with an overview of the results of a public opinion survey, conducted by Omnifacts Research Ltd., of 607 adult residents drawn randomly from the Nova Scotia general population. Methodological details for the survey are not provided. Results indicated that the Nova Scotia public was generally opposed to video lottery, was not receptive to placement of VLTs in convenience stores, did not favor the introduction of casinos into Nova Scotia, and preferred government to private ownership and operation of gaming activities. The report then presents detailed discussions of video gambling, casino operation, bingo, and ticket lotteries, and offers recommendations and draft regulations for each of these gaming activities. The document concludes with brief comments on a number of subjects, including aboriginal gaming and gambling education, which the Commission had begun to review and intended to include in its next report to the Government.

223 Panelas, T. (1983). Adolescents and video games: Consumption of leisure and the social construction of the peer group. Youth & Society, 15(1), 51-65.

Video games potentially play an important role in the construction of peer groups and social identity, primarily because they are played mostly by adolescents (though not exclusively) and because this group is thought to be very impressionable in their development. This article emphasized the importance of investigating how game playing affects social development among its users. From a sociological perspective, video game playing represents the existing symbiosis between the social life of teenage peer groups and the marketing practices of the popular culture and leisure industries. Moreover, the products of the video game industry come to form part of the symbolic raw material out of which a subculture is fashioned, complete with distinctive rituals, values, forms of solidarity, and standards of membership. Thus, the author suggests that, by studying the significance of video games as both cultural texts and organized social activities, this research offers a chance to learn about social solidarity formation among youth.

The leisure time playing of video games can be played in two primary arenas: the public arena and the private arena. Each of these places facilitates different types of social interaction. The public sphere tends to facilitate interaction among one's peer group, offering opportunity to meet peers, relieve boredom and act on emerging sexual identities. The private sphere may promote further consolidation of the family unit. This article explores the attempt of popular culture to influence the development of these peer groups.

This article predicts the potential future importance of home gaming systems, while recognizing how much a part of our lives these systems are, but does not make an explicit link to gambling behaviour.

224 Preston, F. W., Bernhard, B. J., Hunter, R. E., & Bybee, S. L. (1998). Gambling as stigmatized behavior: Regional relabeling and the law. Annals of the American Academy of Political and Social Science, 556, 186-196.

Gambling has passed through several periods of acceptance and prohibition, but historically, gambling has been viewed as a stigmatized behavior world wide. Many U.S. states in recent history have recognized and accepted gambling as a potential economic windfall for their states, citizenry and communities. For example, Nevada was the first state to legalize gambling and many of those states which are following are attempting to adopt the Nevada model of gambling control and regulation. Because of the stigma attached to both gambling and gamblers, it is necessary to attempt to neutralize this stigma before and new gambling legislation can be passed, however. The

neutralization techniques are not universally successful; regional differences are also important considerations in the success or failure of gaming enterprise.

The article is only a descriptive paper and not research based. An interesting comparison to big tobacco companies is made, however. Is this a forecast of future responsibilities of casino owners to citizens who develop compulsive gambling problems? Techniques of stigma neutralization are discussed (exceptionalize, excuse, normalize) and their efficacy is illustrated.

- 225 Reno, R. A. (1996). The diceman cometh: Will gambling be a bad bet for your town? Policy Review, 76, 40-45.**

The surge in gambling popularity and in particular youth gambling has ripple effects in young lives that undermine families, communities, and civic order in America. Gambling could rival drugs as the addiction of choice among teens, yet the level of public awareness remains low. The government's addiction to gambling revenues has been transmitted to the public. Experts predict that the number of gambling addicts is still on the rise. The scope of the problem has been underestimated largely because so little research has been undertaken regarding gambling's impact on the family. Spousal and child abuse and neglect are other problems attendant to gambling addictions; as well, children of compulsive gamblers suffer in other ways. Compulsive gamblers are also at much greater risk for other harmful behaviors. Gambling interests have targeted several key states for expansion and, if successful, will put many more millions at risk.

This article draws out the increasing problems associated with the surge in gambling such as youth gambling and negative impacts on the family, yet resorts to zestful rhetoric to establish its key points.

- 226 Thompson, W. N. (1998). Casinos de juegos del mundo: A survey of world gambling. The Annals of the American Society, 556, 11-21.**

This article examines the difference between the mass-marketed casinos of North America and the restricted casinos of Europe. Several explanations for the different styles are offered. Casinos in other industrial nations as well as in less developed nations are examined, as are lottery operations. It is suggested that big casino developments in the near future will be found in North America, and the North American pattern will not soon be adopted in Europe or in any wide spread way in other parts of the world.

The article addresses the important issue of the influence of political-economic climates for the expansion of Las Vegas styled casinos.

- 227 Wasserman, M. (1982). Alcohol, no! gambling, yes: A matter of survival in Aztec society. British Journal of Addiction, 77(3), 283-286.**

This article reviews the reasons gambling was condoned in Aztec society of ancient Mexico, whereas alcohol was emphatically forbidden. The Aztec's condemnation of alcohol and acceptance of gambling was related to the survival value accorded each activity. Alcohol could put a warrior's life in jeopardy because he was not clearheaded during combat, but for the Aztecs the state of mind needed to be a successful gambler might actually have had the effect of prolonging a person's existence.

The article makes interesting connection between gambling and warrior qualities supported by references to other cultures that may be of particular interest to researchers using archetypal theory to explain attitudes and values found among gamblers.

228 Wenger, L., McKechnie, B., & Kaplan, G. S. (1996). Fastfacts on gambling. Winnipeg, MB: The Addictions Foundation of Manitoba.

This monograph, published by and available from the Addictions Foundation of Manitoba (AFM), is a compilation of information on gambling in Canada, with a closer look at Manitoba, that will prove particularly useful for researchers who are new to gambling studies. Appropriately titled “FastFacts on Gambling”, the book is a quick reference tool for definitions and types of gambling, statistics, motivations to gamble, profiles of people who gamble, historical perspectives, youth and gambling, the impact of problem gambling on families, and treatment/resources for problem gamblers. Moreover, complete citations are provided in the endnotes for all sources of the information covered. Helpful suggestions regarding the semantics of gaming/gambling and clarifying examples are provided. For researchers confused and frustrated by flip-flopping of gaming/gambling terms, the definition provided gives clear criteria for preferential use of the term “gambling”, which is defined as any gaming behaviour involving the risking of money or valuables on the outcome of a game, contest, or other event, where the outcome is partially or totally dependent upon chance.

Six types of gamblers are identified: casual social gamblers, serious social gamblers, relief-and-escape gamblers, professional gamblers, antisocial or criminal gamblers, and pathological gamblers. For those researchers interested in problem gambling, concise information about problems associated with gambling and comparison with other forms of addictive behaviour (notably, substance abuse) is provided. Of particular value for planning studies are a chart describing the gaming industry across Canada, province-by-province, and an historical review of 25 years of legalized gambling in Manitoba. Highlights of the 1993 (general participation in gambling activities) and 1995 (prevalence of problem and pathological gambling) studies conducted in Manitoba by Volberg are provided in sufficient detail to form a general picture of gambling in that province, indicating that 93% of Manitobans have ever gambled. Thirty-six per cent gamble on a weekly basis. Unpublished data collected since 1995 by the AFM for its client population in adult treatment programs and HelpLine callers are summarized.

In light of the general interest in and perceived need for more information about youth gamblers, the chapter on youth and gambling will be particularly helpful for readers who are looking for a quick overview of gambling behaviours in this demographic group. This chapter summarizes, briefly, the limited information available from Canadian and Dutch studies, as well as unpublished assessment information gathered from youth clients in AFM’s alcohol and drug addiction program, where more than half of clients reported they had gambled at least once in their lives.

229 Wynne, H. J. (2000). Gambling on the edge in Alberta. EGambling: The Electronic Journal of Gambling Issues, (1).

Alberta has the widest array of gambling options available in North America and nine out of ten adult Albertans gamble on some form of legally sanctioned ‘game’. In this article, the author recounts some of the recent events in the gambling history of the province. The author discusses the government’s reliance on gambling revenue, the long running debate surrounding video lottery terminals, the potential of hotel operators in future gambling expansion, the necessity of the government to act on internet gambling and the unfortunate reliance of charities on gambling revenues and the ethical questions that the brings up for the groups.

The author identifies four “gambling mega-trends”, an effective way of highlighting the future of gambling activities, given Alberta’s bell-weather status as Canada’s gambling hotbed.

F. ETHNOGRAPHIC AND OTHER QUALITATIVE STUDIES

- 230 Fisher, S. (1993). **The pull of the fruit machine: A sociological typology of young players.** The Sociological Review, 41(3), 446-474.

This paper discusses the use of fruit machines by youth (ages 11 to 20 years) in the U.K. The study is done in ethnographic form, with the researcher posing as cashier in an amusement arcade for an extended period of time. The author first discusses some of the perceived explanations for beginning to gamble and then develops a typology based on these explanations and ethnographic observations.

The author provides a review of the sociological perspective on gambling, noting that most sociological literature has emphasized the social problems approach, thus neglecting to explore the compelling social rewards and failing to explore the social dimensions of gambling. Social theory applied to gambling is reviewed briefly.

Details of the method employed are provided, including participant observation, in-depth interviews with young players, and group interviews with children at a secondary school, as well as a rich description of fruit machine gambling and various strategies employed by players. A 5-part typology that describes the primary orientation of young fruit machine players emerged naturalistically from the field work: Arcade Kings and their Apprentices, Machine Beaters, Rent-a-Spacers, Action Seekers, and Escape Artists. The classifications, describe in detail, include both "addicts" and "social gamblers". The author discusses the limitations of the study, for example, for generalization, noting that none of the explanations offered is on its own sufficient to explain why people gamble. This typology does reveal the multi-dimensional nature of fruit machine gambling as a leisure pursuit, however. Moreover, this study provides insight into the rich subculture surrounding the play as well as some of the social processes surrounding addiction.

- 231 Goodale, J. C. (1987). **Gambling is hard work: Card playing in Tiwi Society.** Oceania, 58(1), 6-21.

This paper examines the gambling activities of Tiwi women and men of North Australia, situating the activities within an anthropological analysis of work in this society. Gambling for money serves to redistribute unequal cash resources; gambling for beer redistributes this equally available resource unequally. The author notes there are few anthropological (i.e., employing participant-observation methods) studies about the introduction of gambling with cards in fourth-world, colonial, or post-colonial societies, largely because few researchers are interested in playing cards themselves. References to the few Australian Aboriginal studies on the subject and a summary of this research in mainland Australia and on Melville Island are provided.

This paper includes a discussion about Tiwi card-playing as both work and leisure, contrasting implicit Western values associated with work and leisure with traditional Tiwi approaches that integrate card gambling and associated activities as adaptive responses to contemporary township environments. Gendered patterns of involvement in card-playing activities are described and cultural explanations offered to explain observed differences in light of traditional gender roles and meanings given to card-playing. A number of common card games are described in detail. Moreover, the economic and social consequences of winning and losing are discussed, the most obvious being the redistribution of available cash across age groups and genders. The author suggests that Tiwi use cards to find money as an extension of their traditional subsistence economy, and offers several theoretical and comparative ideas and cultural explanations as to why and how Tiwi peoples both play with and work for money using cards.

- 232 Griffiths, M. D. (1990). Arcade clientele and gaming preferences: A long-term study. Perceptual and Motor Skills, 70, 1258.**

This brief report summarizes the findings of long-term monitoring, using participant and non-participant observation methodologies, of an amusement arcade in a seaside town in southwest England. Gender differences were noted, with males outnumbering females, especially in winter months. Most male participants were between 10 and 16 years old and tended to concentrate on video games and fruit machines in addition to other games that were competitive in nature. Some games were played by all age groups universally, including the elderly. Young men were observed to frequent games where groups played against each other. Older women were observed to play on cheap stake fruit machines and coinpushers. Young couples preferred games offering prizes. Pinball machines were used infrequently, usually by solitary older male adolescents and young men.

The results confirm previous American findings. The author suggests that more study is needed concerning people who use amusement arcades excessively.

- 233 Griffiths, M., & Minton, C. (1997). Arcade gambling: A research note. Psychological Reports, 80, 413-414.**

This paper reports observational data on slot machine gamblers that were collected over three months in two arcades in the winter months in Plymouth. Arcades were frequented largely by males (94%); most of them appeared to be adolescent (84%). Much of the slot machine gambling appeared to be non-social.

The study consisted of preliminary observation only with some inconsistency to time of observation. Relatively low numbers of subjects were observed over the three month study period.

- 234 Hallebone, E. (1997). Saturday night at the Melbourne Casino. Australian Journal of Social Issues, 32(4), 365-390.**

This article attempts to describe a Saturday night at the Melbourne casino (Australia) for some of the patrons. The author conducted an empirical study in two parts. The first part was an ethnographic study involving participant observation on a series of Saturday nights and other occasions, during which the researcher identified key topics through unstructured conversation and focused interviews with 26 casino patrons. The second stage of this study involved asking the same questions as in the first stage to a community snowball sample (n = 71, including 12 Vietnamese) outside of the casino environment. Some of the factors examined include: frequency of visits, amount of financial investment (loss) and the games that they play. The participants also shared their reasons for visiting the casino, their perceptions and the attitudes on the impacts of gambling in the community, as well as their understanding of problem gambling and gamblers.

The author summarizes the history of gambling in the state of Victoria. Socio-cultural researchers will find value in the review of recent sociological (social structural) and psychosocial literature on gambling and leisure, which includes critical and cultural perspectives on modern leisure activities, with specific reference to casino gambling.

This article suggests that institutionalized forms of gambling represent the new face of capitalism and highlights the negative impact of gambling on other forms of social life as an example of the institutionalization of leisure processes. Moreover, the author notes the cultural shift to include women in the formerly masculine activity of gambling, and suggests that women's involvement in gambling represents an attempt to enhance or change dominant relations of leisure. She proposes

that further research could explore a range of theoretically-situated themes suggested by this study such as the social construction of ritual, role-play, and leisure as critiques of everyday life. Some brief mention is made of alternate, largely negative, meanings given to participation in gambling by the Vietnamese respondents in this study.

- 235 Hallebone, E. (1999). Women and the new gambling culture in Australia. *Society and Leisure*, 22(1), 101-125.**

This study is a cross-cultural look at the experience of women who gamble in Australia, in light of new electronic forms of gambling that attract increasing numbers of female participants. The first part explores the various factors that encourage the development of gambling problems, including language barriers that prevent a culturally diverse population from participating in alternative social activities, as well as unemployment and gambling as a last hope for financial gain. The results of several studies conducted by this author are summarized, including focused interviews in four culturally diverse settings in Victoria (Indochinese, Chinese, Greek, and Italian communities) and a micro-sociological study with female problem gamblers attending counselling services in Melbourne. Personal narratives from these in-depth interviews with ten female gamblers (ages 33 to 71 years) are the basis of the second portion of the study. Common themes included loss and attempted regain of identity, escape from domestic abuse including rape, social isolation, loneliness and boredom. The narratives highlight the collective meaning given to the search for social relevance, warmth, company, and better monetary fortune. The paradoxical restrictions of addiction and debt are discussed.

The article provides a summary of the social scientific research literature concerning women, gambling and harmful gambling, and structural and individual foundations of possible risk and harm. In addition to providing key references to feminist and other critical analyses, this review highlights the paucity of research conducted on gendered experiences of gambling and the relative emphasis on pathology in the gambling literature. The author notes that some studies focusing on exclusively male subjects have generalized their findings to both sexes. The discussion of gender bias in prevalence research points to data indicating socio-demographic variation in gambling involvement, expenditure, motivations, and types of gambling, as well as the differential impact of various forms of gambling such as electronic gambling machines have been observed to have on women. Finally, the author compares and contrasts socio-economic status and gambling from the political conflict perspective (Brown et al.) with reflexivity (Giddens) and modernity (Habermas) perspectives.

The multicultural aspect of this article highlights cultural patterns that affect gambling behavior. Moreover, the narratives of female problem gamblers exemplify how the flight to freedom can be restricted by a gambling addiction and accompanying financial debt.

- 236 Hayano, D. M. (1989). Like eating money: Card gambling in a Papua New Guinea Highlands village. *Journal of Gambling Behavior*, 5(3), 231-245.**

Card-playing was introduced relatively recently to the Awa peoples of rural highland Papua New Guinea by labour migrants returning from urban work camps. Gambling at cards has not been well integrated into Awa society, and has remained a seasonal and recreational activity in most villages, which tend to be relatively inaccessible and socially and geographically isolated from patrol stations and urban centres. In villages where economic development has occurred, card playing has become less recreational and a more divisive social, economic, and political area of competition. In contrast to many other ethnographic reports about tribal peoples to whom card playing was introduced, this activity appears to be neither a functional substitute for traditional activities nor a microcosmic mirror of traditional society.

The author reports on two years of ethnographic research in Awa villages in 1969-70, 1981 and 1987, during which he participated in the daily life of the village. Although gambling was not the focus of the research, the author noted that gambling at cards influenced many other patterns of village life. Shifts in gambling activity to card playing were observed and attributed to concomitant changes in male wage labour migration and the growing availability of money in the Awa economy. Other contributions to the anthropology of gambling among Highlands labour migrants, which have drawn attention to the importance of drinking and card playing among migrants as leisure time activities pursued in urban settings, are noted by the author.

The results of the current study are situated in the growing body of cross-cultural evidence about the global distribution of gambling games. The author notes, for example, that gambling in band, nomadic, and/or tribal societies tends to be rare and relatively underdeveloped in contrast to stratified, state-level societies marked by socio-economic inequality. Two theoretical approaches to the study of gambling in the social sciences, functionalism and "mirror of society" hypotheses, are discussed in light of the patterns of gambling noted among the Awa. The author suggests that card playing among the Awa is best understood in the context of colonialism and recent, rapid urbanization and economic change.

237 Heine, M. K. (1991). The symbolic capital of honor: Gambling games and the social construction of gender in Tlingit Indian culture. *Play & Culture*, 4, 346-358.

This article discusses factors influencing game participation in traditional Tlingit culture from an ethnohistoric reconstruction perspective, with particular focus on gender differences. Tlingit society is traditionally a fishing and gathering culture located in coastal regions of southeastern Alaska. Gaming that involved exchange of property involved women less frequently than men; although game participation was not consciously proscribed for women, the author notes that numerous injunctions against excessive gambling existed, directed at men.

Traditional Tlingit peoples enjoyed substantial leisure time, free from the constraints of material production. The potlatch ceremonies exemplified the social significance of giving away of property, which was a major prerequisite for attainment of social status, personal identity, rank and prestige. The author suggests that two structural constraints operative in traditional Tlingit society contribute to gender differences in participation in gambling: gendered divisions of labour, with women working longer than men, and social relations of ownership. In the latter instance, goods typically exchanged in the gambling scenario are owned almost exclusively by men, effectively excluding women from the process of publicly displaying a position of wealth, honour and prestige. Although women had access to (and often controlled) economic capital, they enjoyed only limited access to the symbolic capital of honour available through potlatches or gambling games.

The article situates patterns of gambling within technical and symbolic properties of the gendered division of labour and social relations of ownership of personal wealth, pointing out key social structural and symbolic patterns that explain gender differences in gaming in traditional Tlingit culture. The exchange of wealth that occurs during gambling is presented as analogous to other symbolic significations that publicly mark identity, social rank, and prestige.

238 Hunter, E. M., & Spargo, R. M. (1988). What's the big deal?: Aboriginal gambling in the Kimberley region. *The Medical Journal of Australia*, 149(11-12), 668-672.

Gambling among Australian Aborigines in the remote Kimberley region of northwest Australia and its disproportionately negative impacts are described by a psychiatrist and physician. The information provided is acknowledged to derive from preliminary unpublished data from a

continuing survey of a random sample of 637 Aborigines from across the entire region. No details of data collection or analysis are provided. At the time of publication, 202 persons had been interviewed and 50.5% were identified as gamblers, both men and women. In addition to providing detailed descriptions of the games, stakes, and players, the authors address the physical, psychological, and social consequences of Aboriginal gambling in the context of the brutal social and economic realities of Aboriginal Australia. The authors warn against the potential medicalization of complex social problems such as gambling, drawing a parallel with alcoholism. They regard the medical profession as strategically placed to focus attention on long-term perspectives, however, and suggest that gambling among the Kimberley Aboriginal population needs to be recognized as an issue of major public health concern.

239 Kassinove, J. I., & Tsytsarev, S. V. D. I. (1998). Russian attitudes toward gambling. Personality & Individual Differences, 24(1), 41-46.

The primary goal of this study was to assess attitudes toward gambling in Russia, where the restructuring of society has led to a marked increase in gambling opportunities. Also assessed with respect to gambling attitudes were religion and religiosity, risk taking, liberal thinking, amount of gambling experience, and social desirability. A Russian version of the Gambling Attitude Scales (GAS), which measure general attitudes toward gambling and specific attitudes toward casinos, lotteries, and horse races, was administered to 171 university students. Methodological details are provided, including internal consistency statistics for the scales in the research instrument. Analysis of variance and Pearson correlation were used to test for statistical significance.

Results indicated that the Russian Gambling Attitude Scales are internally consistent measures that can be used to assess gambling attitudes in Russia. Attitudes toward lotteries, casino betting, and betting on horse races did not differ significantly. Russian women reported more positive attitudes than men toward lotteries. In contrast to the results of U.S. studies, a significant relationship was not found between religiosity and gambling attitudes. However, attitudes toward gambling were found to be positively related to risk taking, liberalism, and previous gambling experience. This study expands knowledge in an area where research has been virtually nonexistent. The authors urge caution in the interpretation of results, however, due to methodological limitations and the probable instability of attitudes and behavior patterns in a society undergoing rapid change.

240 Nickerson, N. P. (1995). Tourism and gambling content analysis. Annals of Tourism Research, 22(1), 53-66.

In this study, the author used content analysis of tourism and gambling issues in Deadwood, South Dakota, USA, taken from over five years of newspaper accounts. Three newspapers portrayed five general categories of information: economics, regulatory concerns, initial questions on gaming, logistics and planning needed, and negatives toward gaming. Gaming was a vital player in economic and tourism revival. Negative issues such as crime and social issue appear to become more prevalent after gambling has been initiated in a small community.

The benefits of gambling were emphasized 3:1 over negative issues in the newspaper articles, indicating that coverage of gambling issues in the media is unbalanced. A fully developed discussion of social and negative issues did not result from this study.

- 258 Nixon, G., McGowan, V., Frank, L., Grimshaw, M., Coghlan, S. (in preparation). Mythic structures underlying cognitive distortions among problem and pathological gamblers: A cross-cultural perspective on interpretative phenomenological approaches and therapeutic deconstruction.**

This article examines cognitive distortions among problem and pathological gamblers from a phenomenological perspective and explores the mythic structures underlying these cognitive patterns. Interest in cognitive distortions commonly utilized by pathological gamblers, such as chasing losses, belief in cognitive control of random events, or reliance upon lucky objects, predominate in gambling research and underpin an explosion in therapeutic interventions seeking to realign irrational cognitive patterns with rational thought processes. The authors examine how cognitive distortions derive from archetypal symbols and are constituted as objects of experiences by Euro-Canadians and Blackfoot peoples in this article that reports on the results of two pilot studies.

Following initial screening by DSM-IV criteria, eleven Euro-Canadian and Blackfoot gamblers described lifetime gambling in loosely structured, in-depth, chronological interviews employing reflective questioning and invitations to amplify gambling-related fantasies and motivations. Blackfoot Elders identified relevant mythic themes, as these themes are contextualized in contemporary Blackfoot societies. Euro-Canadians described “winner” and “good luck” mythic themes typical of mainstream cultural norms; Blackfoot gamblers depicted a mixture of Blackfoot and mainstream themes. The hero’s journey, for example, is evident in the discourse of either group. The authors discuss implications for counselling practice, including questions concerning the historical and cultural specificity of psychotherapeutic categories. Further, they critique the construction of pathology from a cross-cultural perspective and suggest further areas for research in cognitive patterning among gamblers that will involve First Nations peoples.

- 241 Rubinstein, R. L. (1987). The changing context of card playing on Malo, Vanuatu. *Oceania*, 58(1), 47-59.**

The organization of a card game called Last Chance reflects the rules that guide society-at-large in this ethnographic report of card-playing on Malo, Vanuatu. Both inner rules and an outer domain of interactions (such as tactics and strategies) are observed to explicitly regulate peoples’ card-playing behaviours. Gambling functions to redistribute wealth and provides a means of expression for power situations, particularly situations that are at odds with social norms that promote universalism and equality among Maloese. The author suggests that, through card playing, Maloese express tensions about land possession and power, providing an arena for expression of tensions created by change in post-colonial times. Thus, card-playing can be seen to resonate with and express individual psychological needs in a given socio-political environment. As these needs and environments changed, however, card-playing lost its significance and popularity to kava, a native drink.

By identifying structural analogies, this article parallels the pursuit of gambling at cards with traditional and introduced cultural values and changing socio-political environments. Moreover, it demonstrates how gambling serves as a venue within which certain emotions (such as aggressive mastery), usually held in check, can be expressed. Moreover, the contextual nature of gambling is identified.

- 242 Saunders, D. M., & Turner, D. E. (1987). *Gambling and leisure: The case of racing*. Leisure Studies, 6(3), 281-299.**

This article discusses betting from the point of view of a leisure time activity and discusses the everyday experience of 'having a bet' by non-problem gamblers in the U.K. Some of the changes that have been made and how they have affected the customer and traditional small-time bookmaker are explored, based on ethnographic research in betting offices within Cardiff, South Wales and previously published research.

Betting on racing is a popular form of gambling in the U.K., usually discussed in the context of compulsive and problematic gambling. Recent amendments to the Betting and Gaming Act as well as changes in technology have changed the way people bet, and off-track betting offices are now more widely used. A detailed description of off-course betting in Britain and a typology for betting office populations, associated with differing experiences, perceptions, ambitions, and expectations about gambling on races, is provided.

The authors review the major concepts associated risk taking involving both money and emotional experience of excitement, compare and contrast race-track and off-track betting, and discuss variations in leisure styles and ideologies associated with these different forms of betting. They observe the predominant focus in gambling research on motivation from a patho-psychological perspective and political interests in control of betting and present a compelling discussion of Goffman's theoretical works on everyday life as a counterpoint, where gambling is perceived as a pursuit associated with norms, roles, and mores constantly negotiated by groups rather than isolated individuals. The authors make an important link between gambling behaviour and changes in technology and legislation.

- 243 Sexton, L. (1987). *The social construction of card playing among the Daulo*. Oceania, 58(1), 38-46.**

This article describes gambling at cards among the Daulo peoples of Eastern Highlands, Papua New Guinea as observed by the author who conducted ethnographic research in Daulo villages. Various conflicting evaluations of card-playing among the Daulo people are noted. In fact, most people participated in this activity, but there is some disagreement about its acceptability. Competition is valued as a leisure activity, for example, but organized village groups are opposed to card-playing on the grounds that in promoting individual benefit over the good of the group, card-playing conflicts with traditional values. Thus, Daulo people are ambivalent about gambling at cards, being both attracted to and critical of card-playing.

The author discusses participation in and societal reactions to card-playing across age, gender, and occupational strata in a society recently introduced to a cash economy. Of particular significance to socio-cultural investigators is the construction of meaning concerning gambling activities and the management of deviance in Daulo society. For example, card-playing is congruent with traditionally competitive economic and leisure activities; criticism of card-playing occurs as a reaction to anti-social outcomes, including excessive alcohol consumption, perceived wasting of time and money, and pursuit of personal gain without evidence of skill or creativity. In contrast to a number of other tribal societies such as the Gende and Tiwi, money won at cards in Daulo society is not subject to rules regarding redistribution of wealth. Daulo gambling activity, and organized opposition to card-playing, is thus situated by the author in the traditional ideology of Daulo society and contemporary economic activities.

- 244 Tubery, A. (1987). Usages et symboliques de la machine a sous dans la Sierra Norte de Seville. Ethnologie Francaise, 17(2/3), 184-188.**

This article describes the types and symbolism associated with gaming activity in mountain villages north of Seville, Spain, contrasting these activities with urban patterns. The villages examined in the article are removed from major metropolitan centres, but are not isolated, as migrants pass through regularly. The author considers socio-demographic variations in participation in various forms of gaming, for example, by occupation, age, education, and gender, within the villages. Traditions tend to be maintained, but modern items are introduced occasionally by migrants. Gaming is a traditional form of socializing in rural areas, especially for men. The type of game played is a social marker, and serves also to reaffirm group identity and solidarity. Winning is less important than participating in the gaming activities of the village. Traditional games, such as dominos, are favoured over newer forms of gaming introduced by migrants from the cities.

Note: This article is written in French.

- 245 Zimmer, L. J. (1987). Gambling with cards in Melanesia and Australia: An introduction. Oceania, 58(1), 1-5.**

Aboriginal communities throughout Melanesia and Australia are playing card games. This article is a brief summary of a series of articles that detail how these communities adopted and adapted a typically European game as their own and the purposes that these card games serve in the various communities that play them. Some communities use this type of gambling as a method of redistributing income throughout the community. In other communities it may serve as a way for youth to gain prestige and acceptance among elders. Either way, this type of card playing and gambling is not viewed as a compulsive or pathological development, but rather an enjoyable pastime that unites rather than divides the communities in question.

This is an interesting article that summarizes a series of ethnographic studies of card-playing in the post-colonial period in Papua New Guinea.

- 246 Zimmer, L. J. (1987). Playing at being men. Oceania, 58(1), 22-37.**

The author reports on card-playing observed during ethnographic research among young Gende men in Madang Province in Papua New Guinea, where card-playing has been adopted by younger players to help resolve problems associated with economic inequality and uncertainty. The author notes conflicts between older and younger players about card games such as Last Card, and proposes that this game is the functional equivalent of traditional male initiation. Although they will sponsor new players, older men often refuse to play Last Card on the grounds that skilful strategies may be overturned by a young man's lucky draw. In playing this card game, young men are able to demonstrate publicly their readiness (and means) to assume adult male responsibilities, thus attracting "investors" and potential brides and establishing mutual help relationships with other young men. Thus, gambling at cards is situated in responses to the unequal distribution of wealth that has grown since European contact in the 1930s, and associated negative social effects such as limited access to land and marital partners among young men. Young men's economic independence achieved through card playing is perceived as a threat to the authority of older men and women. Moreover, card playing is often only a means of "playing at being men" among younger men with little income and poor marital prospects in this contemporary Melanesian society.

The author summarizes previous research concerning card-playing among the Gende and discusses the role of card-playing among young men in changing socio-economic and political contexts.

G. STUDIES CONCERNING FIRST NATIONS PEOPLES

027 Azmier, J. J. (2000). Gambling in Canada: Triumph, tragedy, or tradeoff? Canadian gambling behavior and attitudes: Summary report. Calgary, AB: Canada West Foundation.

This Canada West Foundation report is the first independent national study of gambling in Canada, and presents the results of a random sample telephone survey administered in June 1999 to 2,202 respondents age 18 years of age or older. Designed to provide data concerning public policy issues, the study explored four areas: the impact of gambling on the non-profit sector; opinions, attitudes and public policy implications of gambling; the history and scope gambling in Canada; and the socio-economic impact of gambling on communities. Detailed information is provided concerning the methodologies employed and overall research design, including the source and structure of interview instruments to measure behaviours (e.g., participation, frequency, motivation) and attitudes (e.g., acceptability, regulation, charitable gaming, First Nations gambling, usage of gambling revenues, impact on individuals and communities). The questionnaire was developed from existing gambling opinion surveys, including research in Canada and an important set of surveys conducted in Australia. Details of sampling within the five "lottery regions" of British Columbia, Western Canada, Ontario, Quebec, and the Atlantic provinces are provided, with weighted adjustment factors and standard deviations reported. Regional, historical, and circumstantial factors are considered in this report. Data were subjected to regional, weighted and segmentation analyses. Only the weighted sample analysis is presented in the 32 page summary report, but all three forms are described in the main report. Both reports are available on request from the Canada West Foundation.

The study discerned a range of motivations, perceptions, types, and categories of gambling in Canada. The latter include regulated gambling, informal betting, illegal gambling, and stock market speculation. Among various types of gambling, the report discusses VLT and internet gambling, and notes that gambling seems to have its greatest appeal to young adults (81% or 18-19 year olds, in contrast to 65% among those over 65 years). The reader interested in attitudes towards gambling will find useful the population/sample comparisons presented in the summary report, which compare and contrast demographic characteristics of age, gender, income, education, and employment. Overall, a modest pro-gambling bias is concluded; the majority of Canadians (57%) do not participate in gambling activities, however, although there is a perception among respondents that opportunities to participate are readily available. Public attitude toward First Nations-controlled gambling is ambivalent, and varies with age and region. The majority of respondents do not appear to support First Nations as the preferred choice to operate gaming in Canada, however.

For the reader interested in socio-cultural issues concerning gaming and gambling, this report provides a detailed and thoughtful picture of behaviours and attitudes across regions of the country. The report highlights the general ambivalence of Canadian attitudes toward gambling and regional variation in gambling behaviours and attitudes. Moreover, areas for further research are identified, such as trends among younger Canadians.

247 Cozzetto, D. A. (1995). The economic and social implications of Indian gaming: The case of Minnesota. *American Indian Culture and Research Journal*, 19(1), 119-131.

This paper discusses Indian gaming in the United States in the context of economic and social problems on reservations and tribal governments' demands for sovereignty. Native American perceptions of the potential social and economic benefits that are expected to accrue from the Indian Gaming Regulatory Act of 1988 are summarized, including self-determination, employment, education, expanded economic growth on reservations, and enhanced political clout among tribal

leaders. The author provides an overview of important issues concerning Indian gambling in Minnesota, based on a preliminary analysis of evidence representing both Indian and non-Indian interests. Indian gaming has been legalized in Minnesota since 1982.

For the socio-cultural researcher, this paper provides an overview of the dominant discourses concerning social and economic impacts of Indian gaming based on the Minnesota experience. For example, inter-tribal animosities have surfaced as a result of competition for gaming revenues. In some instances, profits have gone to non-Indian interests. Further, private non-Indian businesses protest competition from Indian-run casinos and promote the expansion of VLTs, which is expected to have a significant impact on casino revenues. Finally, tribal sovereignty is seen as a barrier to venture capital investment by commercial banks, thus limiting the ability of communities to raise capital necessary for economic development. On the positive side, economic indicators include investment of gaming revenues in education, substance abuse treatment programs, and housing on reservations. Others point to the perceived empowerment of native communities as a result of successful casino operations, job creation, and increased education and training opportunities. The increasing incidence of pathological gambling remains a major concern, however. The author acknowledges the skepticism of Indian leaders about research that has focused on the negative social impacts of gambling, but suggests that tribal leaders need to be proactive in recognizing trends in pathological gambling and providing programs to address the problem.

248 Cozzetto, D. A., & Larocque, B. W. (1996). Compulsive gambling in the Indian community: A North Dakota case study. *American Indian Culture and Research Journal*, 20(1), 73-86.

This paper discusses high-stakes gambling on two Indian reservations in North Dakota (Chippewa and Sioux) in the context of tribal self-rule, reservation economic development, increases in social problems, and gambling-related social dysfunctions in an empirically based study of correlations between rapid growth in numbers of tribal casinos and the incidence of pathological gambling activity. Recent studies of adolescents and adults are summarized that demonstrate extraordinarily high rates of pathological gambling among Indian populations and significant differences between pathological and potentially pathological gambling behaviours in the Indian population compared to non-Indian populations in the USA. Moreover, the results of these studies demonstrate consistently a correlation between alcoholism, poverty, and unemployment rates on reservations and gambling-related problems.

The research methodology of the present study comprised random and quota samples from five different sources, including a random sample for comparative purposes of adults from the general population of North Dakota, two Indian communities, and Indians who gamble at reservation casinos. Male and female representation was consistent across the quota samples. Tribal affiliation was confirmed in all quota samples to ensure that non-Indians were not included. The South Oaks Gambling Screen (SOGS) was administered to assess prevalence of pathological and potentially pathological gambling behaviours. Two additional demographic questions about gender and age were included and the instrument was pre-tested to ascertain absence of cultural bias. Contingency table analysis was completed using SOGS-based classifications of pathological, potential pathological, and non-pathological gambling as dependent variables and age, gender, and gender-under-thirty as independent variables. Chi-square statistics were calculated ($\alpha = .05$), followed by Cramer's V measure of association for significant results. All statistics, including frequencies, are reported. Significant differences in pathological and potentially pathological gambling behaviour in the Indian population relative to the general population are noted. The authors suggest that the emerging trend in increasing rates of pathological and potentially pathological gambling should concern tribal leaders in rural states. Questions concerning funding of further research, provision of professional treatment programs, and the role of tribal governments are raised.

In addition to the empirical data contributed by this research, the authors also provide a social history of traditional gaming activities, and note that most wagering occurred during tribal ceremonies, celebrations, or other special events. The authors contrast the cultural context of gaming in traditional Indian societies with contemporary objectives of gambling for fast, large profits. Despite conflict among tribes over casino gambling and its effects on Indian culture, casino gambling is described by some tribal leaders as the “new buffalo”—a cure-all for the economic problems that plague native communities. The history and legislation of contemporary Indian gaming in the United States is summarized. The authors suggest that political issues are to blame for the comparative lack of empirical data concerning pathological gambling in minority communities in general, and the Indian community in particular. A proactive role for tribal leaders is suggested.

249 Duffie, M. K. (1998). Goals for fourth world peoples and sovereignty initiatives in the United States and New Zealand. American Indian Culture and Research Journal, 22 (1), 183-212.

This article discusses native gaming in the context of parallel sovereignty initiatives among Native Americans and New Zealand Maori peoples. A brief comparative summary of the colonial histories of the indigenous peoples of the United States (Native Americans) and New Zealand (Maoris) to the present day is provided. With reference to Ritchie’s suggested goals for economic development strategies, the author tests Ritchie’s hypothesis by comparing the gaming movement in the United States and land settlement initiatives in New Zealand. Tribe-controlled gaming operations, legislation, and revenues are described. Court challenges to tribal sovereignty are discussed. The growing importance of gaming revenues for revitalization of Native American communities and culture is noted, including descriptions of initiatives where gaming revenues are applied to programs concerning cultural distinctiveness such as culturally appropriate curriculum enhancement and alcoholism treatment programs, and land repurchase. New wealth provided by gaming has resulted in factionalism within native communities, however, undermining efforts to revitalize communities and cultures.

250 Elia, C., & Jacobs, D. F. (1993). The incidence of pathological gambling among Native Americans treated for alcohol dependence. The International Journal of the Addictions, 28(7), 659-666.

The first study to measure pathological gambling in a Native American population, this investigation addresses the incidence of comorbidity, specifically alcoholism and pathological gambling, in a sample of 85 male Native American veterans in an alcohol treatment program. The South Oaks Gambling Screen (SOGS) was used to assess pathological gambling. Fifty-three subjects were Caucasian, and 32 were Native American, with Sioux tribal affiliation being predominant. Results showed that 22% of the Native Americans studied (compared to 7.3% Caucasian) scored in the range indicating a probable pathological gambling addiction. Furthermore, 41% of the Native Americans studied (compared to 21.3% of Caucasians) admitted to some difficulty with gambling. The comorbidity of alcoholism and pathological gambling among Native American sample was three times (22% vs 7.3%) that of the Caucasian group. Participants in this study comprised a representative sample of Native American and Caucasian patients residing in the treatment setting. A socio-demographic profile of participants (age, marital status, religious affiliation, war veteran status, predominant tribal affiliation) is provided. Moreover, the literature on co-morbidity among Native American populations is summarized briefly and results of this investigation are provided in detail, including descriptive statistics and the distribution of relevant SOGS scores in the sample.

The authors note that this study requires replication to ascertain the generalizability of results. Questions and concerns are raised about the differential vulnerability of specific groups to patterns of multiple addictive behaviours, however. Education and treatment is encouraged to help stem

projected radical increases in pathological gambling and related problems among this cultural group as Native American gambling becomes more widespread.

- 251 **Gabriel, K. (2000) Gambling and spirituality: A new anthropological perspective [Web Page]. URL <http://www.nmia.com/~kgabriel/myths.html>.**

Based on the book *Gambler Way*, also written by the author (out of print, but available from the author), this article explores issues concerning gambling among Native American groups in terms of spirituality. The positions of proponents and detractors of gambling are described and a “middle ground” position, spiritual rather than secular, is advocated. The historical linkage of gambling with spirituality in pre-industrial societies is discussed, with examples drawn from ancient Egypt and biblical texts, as well as mythology and ritual in Icelandic, Hindu, ancient Chinese and Greek, and other early societies. The experience of early colonizers in North America with gambling, the origins of moral judgments about gambling, and the severance of gambling and spirituality in western thought, are treated briefly.

Ethnological records dating to the fifteenth century provide evidence of the historical depth of gambling, and problems associated with excessive gambling, among Native American societies. The role of ritualized gambling in revitalization movements is described also, with some detail concerning the Pawnee Converted Ghost Dance hand game. The author comments about the role of traditional gambling in contemporary cultural revitalization movements and, having surveyed more than a hundred gambling myths from the Arctic to Meso-America, concludes that gambling played a large metaphoric role in Native spiritual thought and beliefs, functioning to balance good and evil, and is commonly used as a metaphor for spiritual growth. In fact, concludes the author, gambling addictions are a form of spiritual seeking in which the gambler is looking for a personal transformation in the moment of exhilaration, with often cataclysmic results.

This essay is a succinct introduction to gambling and spirituality, providing a wide-angle lens view of the spiritual aspects of gambling across many different societies. The primary manuscript from which this essay is drawn is, unfortunately, out of print.

- 252 **Goldin, N. S. (1999). Casting a new light on tribal casino gaming: Why congress should curtail the scope of high stakes Indian gaming. *Cornell Law Review*, 84(3), 798-854.**

This relatively lengthy article provides a comprehensive, thoroughly annotated, history of casino gambling in the United States, with a focus on federal-tribal relations and gaming on Indian reservations in the context of federal Indian policy. The scope of contemporary gaming on Indian reservations is discussed, with emphasis on rapidly spreading bingo and casino activities. Of particular interest to socio-cultural researchers is the section on the adverse impact of the recent expansion of casino gambling in American communities. The author contends that despite short-term gains in new jobs, homes, and programs, Native American communities have paid a hefty price in adverse economic and social consequences. The author predicts, as has followed every prior surge in gambling in American history, that a public backlash will ensue. He calculates that for every dollar collected from gambling, three dollars must be expended to cover new expenses including additional police and criminal justice services, infrastructure repairs, social welfare, and addiction counselling services, and local businesses suffer as casinos cannibalize the surrounding economy as people spend their paychecks at the casino.

The author discusses four categories of social consequences that will follow the surge in casino gambling: criminal activity, problem gambling, erosion of family cohesion, and diminished quality of life. Moreover, casino gambling has an adverse impact on charitable gambling, diverting donations that organizations raise through charitable gambling activities. Seen as an answer to the

desperate need for solutions to financial hardships experienced by Indian communities, high stakes gambling has instead had a devastating impact on their economic and social well-being.

The author acknowledges the politically charged issues concerning Indian gaming and concludes with a recommendation to curtail the scope of legal tribal casino gambling. Specifically, he urges that Indian gaming be limited to those types of activities that are permitted by a state for general commercial purposes.

253 Gordon, J., Brassard, R., Coutts, D., Laing, B., & Oberg, L. (1996). Native gaming committee report and recommendations on Native gaming. AB: Government of Alberta.

This report is the result of a five-member MLA Committee's examination of the issue of native gaming in Alberta. Although the report is independent of the Lotteries Review Committee (LRC) report, each member of the MLA Committee that authored the present report are from the LRC. The report details the activities of the MLA Committee, which consulted with First Nations representatives (described as First Nations leaders), visited two American Indian gaming projects, studied First Nations gaming models and policies in other jurisdictions, and reviewed casino operations.

Public opinion on the type and location of casino gambling is described, and stresses that the people of Alberta feel that the beneficiaries of regulated gambling in Alberta should continue to be charitable organizations providing relief of the aged and disadvantaged, supporting advanced education and learning, or other providing programs to help the community. The socio-cultural researcher will find in this report a brief summary of gambling models in place in Alberta, including charities, religious groups, and native gambling, and public attitudes towards casinos. Regulations that apply to First Nations gambling, and the distribution of revenues are described. The challenges presented by problem gambling are cursorily discussed, however.

The report concludes with a statement concerning the need to find 'balance' between the potential benefits and harms from gaming and a set of recommendations. Appendices provide brief summaries of the two American Indian gaming operations and First Nations gaming operations in British Columbia, Saskatchewan, Manitoba, Ontario, and New Brunswick.

237 Heine, M. K. (1991). The symbolic capital of honor: Gambling games and the social construction of gender in Tlingit Indian culture. Play & Culture, 4, 346-358.

This article discusses factors influencing game participation in traditional Tlingit culture from an ethnohistoric reconstruction perspective, with particular focus on gender differences. Tlingit society is traditionally a fishing and gathering culture located in coastal regions of southeastern Alaska. Gaming that involved exchange of property involved women less frequently than men; although game participation was not consciously proscribed for women, the author notes that numerous injunctions against excessive gambling existed, directed at men.

Traditional Tlingit peoples enjoyed substantial leisure time, free from the constraints of material production. The potlatch ceremonies exemplified the social significance of giving away of property, which was a major prerequisite for attainment of social status, personal identity, rank and prestige. The author suggests that two structural constraints operative in traditional Tlingit society contribute to gender differences in participation in gambling: gendered divisions of labour, with women working longer than men, and social relations of ownership. In the latter instance, goods typically exchanged in the gambling scenario are owned almost exclusively by men, effectively excluding women from the process of publicly displaying a position of wealth, honour and

prestige. Although women had access to (and often controlled) economic capital, they enjoyed only limited access to the symbolic capital of honour available through potlatches or gambling games.

The article situates patterns of gambling within technical and symbolic properties of the gendered division of labour and social relations of ownership of personal wealth, pointing out key social structural and symbolic patterns that explain gender differences in gaming in traditional Tlingit culture. The exchange of wealth that occurs during gambling is presented as analogous to other symbolic significations that publicly mark identity, social rank, and prestige.

254 Hewitt, D. (1994). Spirit of Bingoland: A study of problem gambling among Alberta Native people. Edmonton, AB: Nechi Training and Research & Health Promotions Institute/AADAC.

This study, prepared under the senior authorship of D. Hewitt, focuses on problem gambling among First Nations peoples in Alberta. The snowball sample comprised 156 people between 15 and 82 years of age who were identified within their communities as being heavily involved in gambling. Seventy-nine percent reported they were status Indians, and most lived on reserves (56%) or in rural areas (20%). Fifty-eight percent were women. Detailed socio-demographic and economic characteristics of the sample are provided and the results are presented in this context. The research literature on prevalence of problem gambling in the general population and among Natives is summarized briefly.

The questionnaire used in this study was based on the South Oaks Gambling Screen (SOGS) modified to better reflect the current situation in Native communities; the questionnaire also includes psychosocial and demographic questions and the Texas Inventory of Grief, broadened to include other losses such as job, leaving home, or a personal relationship. A copy of the questionnaire is appended to the report. The report does not provide information concerning validation of these modifications prior to its use in the present study, however. Details of the methods and results are provided in tables and discussions, but only frequencies are reported. Statistically significant results are indicated in a number of tables, but the statistics themselves are not reported.

The primarily social context of gambling and gambling related problems among this sample is noted. Approximately 95% of respondents experienced at least one significant problem with gambling and are discussed in detail. Economic and social (primarily related to family) problems were commonly reported. The authors provide a detailed description of problem gamblers identified in this study, highlighting social issues such as family problems including care of young children, the low age at which most had begun gambling, characteristically low income levels, the presence of family/friends who have gambling problems, the experience of other significant problems or difficulties in their lives such as grief and loss, and the experience of residential schools. The results of this study suggest that gambling problems are significant but not recognized, particularly among youth, and treatment programs are needed urgently.

255 Hewitt, D., & Auger, D. (1995). Firewatch on Aboriginal adolescent gambling. Edmonton, AB: Nechi Training, Research & Health Promotions Institute.

This study examines gambling prevalence among Alberta Aboriginal youth and the social, cultural and personal factors related to gambling and problem gambling in this group. A total of 961 Aboriginal students enrolled in grades 5 through 12, in 28 Alberta schools, completed questionnaires based on the South Oaks Gambling Screen (SOGS-RA). A copy of the questionnaire is appended. A profile of gambling activity is presented, including prevalence (89% had gambled in the past year) favorite gambling activities, gambling history, reasons for gambling, gambling as a

social or solitary activity, and gambling expenditures. Results are also presented regarding students' own and parents' use of alcohol, drugs and tobacco; participation in cultural, sport, and community activities; experiences with death, violence and sexual abuse; gambling problems and problem severity; impact of parents' gambling; and family structure. It is estimated that 28% of respondents are problem gamblers and 21% are at risk of developing a problem.

This research provides a baseline with respect to gambling and associated factors in Aboriginal adolescents, and provides valuable information which can be used at the community level to increase awareness about adolescent gambling problems and to stimulate the development of problem prevention strategies.

010 Hsu, C. H. C. (1999). Legalized casino gaming in the United States: The economic and social impact. Binghamton, NY: The Haworth Hospitality Press.

Focusing on the American gaming industry, this book provides a comprehensive overview of the literature on history, development, legislation, and economic and social impacts of riverboat, land-based, and Native American casino gaming. Of particular interest to the reader interested in socio-cultural aspects of gaming and gambling are the sections that discuss social impacts of gaming in Native American and non-native communities, including crime, quality of life, and availability of entertainment, recreation and cultural activities; how the industry affects the reputation and aesthetics of a community; and local residents' attitudes toward gaming in their community. The author discusses impacts of casino gambling in the form of case studies of Las Vegas and Atlantic City, pointing out that the enormous social (as well as economic) dynamics experienced in these cities may overshadow, eventually, any economic benefits gained. Previously unpublished data are presented by the author that compare demographics, traffic and transportation, crime, costs of living, health care environment, and government expenditure in Las Vegas and Atlantic City with other communities.

The chapter on social impacts of Native American casino gaming is based on a comprehensive literature review and makes clear the mixed blessing of gaming in native communities. Among the social impacts identified are intra-tribal divisions, at times resulting in violent deaths, concerning use of casino profits, and management and establishment of casinos. The literature is sparse, however, and there is a dearth of relevant, objective research for proper assessment of the real impacts of gaming for Native American communities, as well as non-native communities in surrounding areas.

145 Kiedrowski, J. (1995). Legal gaming in Canada: An overview. Canada: Research and Analysis Directorate, Department of Indian Affairs and Northern Development.

This report provides an overview of legalized gaming in Canada. Two studies on provincial and territorial gambling provide the basis for the report. The first was conducted in 1993 and consisted of a review of statutes and other government documents, as well as a survey questionnaire sent to provincial and territorial authorities. The second study in 1995, based on telephone conversations and correspondence with essentially the same agencies as the first study, updated the initial study and examined revenue distribution from gaming. Both studies focused on two types of legal gaming: activities managed by charitable/religious organizations or exhibitions, and lotteries operated by the provincial government through a Crown corporation.

The following major points are identified: charitable and religious organizations generate substantial revenue from gambling activities (\$723 million in 1993-94), as do government-operated lotteries (provincial revenues of \$1,610 million were generated in 1993-94); some provinces have regulations that control the commercial delivery of gaming services and supplies; there is a trend

toward increasing Aboriginal control over gaming on reserves; video lottery terminals (VLTs) exist in most provinces, and several provinces are expanding the number of VLTs allowed; VLTs may be operated on reserves in Manitoba and Saskatchewan is following suit; and VLT revenue distribution agreements vary among provinces.

The remainder of the report provides the following information for each province and territory: provincial and territorial agencies responsible for regulating and controlling gaming, legislative mandates, types of gaming activities permitted, compliance mechanisms for controlling gambling, revenues, regulation of Aboriginal gaming, and future issues.

- 256 Kinsella, C., & Carrig, H. (1998). Therapeutic models of intervention for Aboriginal problem gamblers 1998. South Australia: Aboriginal Drug and Alcohol Council (SA) Inc. 1998//Relationships Australia (SA) Inc. 1998.**

This report provides an overview of Aboriginal and Torres Strait Islander gambling in Australia and current models of interventions from a community consultation perspective, summarizing the results of gambling studies in indigenous populations in Australia and overseas. The greater popularity of continuous forms of gambling and significantly higher expenditure patterns among Aboriginal and Torres Strait Islander populations are noted. As a result of high unemployment rates and lower incomes, vulnerability to gambling related problems and experience of negative impacts of gambling among these populations is greater than in the non-indigenous population of Australia. The social meaning of gambling and the role of risk factors in the etiology of gambling among Aboriginal communities, especially externally imposed factors such as dispossession, colonization, low socio-economic status, and rapid social change, are discussed. An intervention framework for Aboriginal problem gambling is suggested.

Although the purpose of the report was not to investigate prevalence rates and related aspects of gambling, the authors urge this research be undertaken to provide demographic, social, and economic information that will guide the development and evaluation of best practice models.

Socio-cultural researchers engaged in applied gambling research will find this report thought-provoking. For example, the authors critique the notion of a “homogeneous model of best practice”, given the cultural and experiential heterogeneity of Aboriginal and Torres Strait Islander populations. Further, the authors provide a succinct summary of the social, cultural, historical, and economic context for gambling in Aboriginal communities and a rationale for using participatory action research methods in these contexts.

- 257 Long, P. T. (1995). Casino gambling in the United States: 1994 status and implications. Tourism Management, 16(3), 189-197.**

This article discusses gaming and gambling activity in the United States, focusing on casino gambling in Native American communities. The author provides an overview of the growth and distribution of gaming activity across the USA and the community-level debates that accompany gaming activities.

Many small communities may be struggling to remain financially viable and vibrant. Few job opportunities make it difficult to keep young people in the town and because of this out-migration these towns are facing imminent death. The communities of Deadwood, South Dakota, and Black Hawk, Central City and Cripple Creek Colorado have implemented a limited stakes form of casino gambling in the hopes of renewing failing economies through gambling tourism. This article is a discussion of some of the early impacts experienced by these communities in the first few years

with limited stakes casino gambling and might be seen as a cautionary tale. Gambling does offer a huge windfall for these communities but not without significant costs.

In particular, the author discusses the relationship between gaming and tourism; venues for casino gambling, including the three classes of gaming that may be conducted on tribal; public policy issues such as problem gambling, crime surrounding gaming, consumer spending, societal support, and issues surrounding Indian gaming such as proposed amendments that would alter the scope of Indian gaming; and the future of casino gambling.

This article stresses the importance of involving all members of communities (from potential casino owners to residents) in planning for such implementation in the future in order to understand the issues that will be faced while making the transition to a gambling community.

The author concludes that gaming will continue to expand in the USA, particularly as family entertainment. Moreover, the number of Indian tribes seeking tribal-state compacts will increase, as will pressure to regulate and tax tribal casinos.

The intent of this article is to illustrate experiences and offer guidelines surrounding implementation of gambling tourism. The article is a well rounded discussion of both positive and negative impacts of gambling tourism in small communities.

085 Napi Friendship Centre, & AADAC. (1996). The Southwest Alberta gambling study. Crownsnest Pass, AB: AADAC.

This study focuses on prevalence of gambling in Southwestern Alberta; public opinion toward both gambling and availability of counseling services; and gambler characteristics. A combination of telephone and face-to-face interviews were used to collect data from 248 persons. The survey instrument included questions from both the South Oaks Gambling Screen (SOGS) and the "Spirit of Bingoland" study. A copy of the survey is appended.

Results presented relate to prevalence, including demographics, types and frequency of gambling, and money spent; public opinion towards gambling in general and specific kinds of gambling (bingo, lottery, VLT); public opinion towards availability of addiction treatment; context of gambling, including favorite type, gambling as a social activity, and time spent; reasons for gambling; problems experienced by gamblers; and associations with gender, income, community involvement, ethnicity, and problem gambling.

133 National Council of Welfare. (1996). Gambling in Canada: A report by the National Council of Welfare. Ottawa, ON: Ministry of Supply and Services Canada.

The National Council of Welfare chose to investigate gambling because of concerns about its adverse effects on Canadians, especially low-income Canadians. Based on available statistics and research, the report documents gambling's current status as a multi-billion-dollar industry and its importance as a source of revenue for provincial and territorial governments. It also surveys available research on prevalence and characteristics of problem gambling, as well as its social and financial impacts. Demographics and other characteristics of problem gamblers are summarized and problem gambling among women, youth, and Aboriginal people is discussed.

The report concludes with recommendations in four main areas: further restrictions on certain types of gambling; more help for problem gamblers; full disclosure of the extent and risks of gambling; and more research on gambling and its adverse effects.

086 National Gambling Impact Study Commission. (1999). The National Gambling Impact Study Commission. Washington, DC: National Gambling Impact Study Commission.

The National Gambling Impact Study Commission was charged with conducting a comprehensive legal and factual study of the social and economic implications of gambling in the United States. The Commission made site visits, commissioned original research, conducted literature surveys, and solicited and received input from a broad array of individuals and organizations. In addition, it held a series of hearings around the country to receive testimony from experts and members of the public.

This report presents the principal findings of these efforts, as well as recommendations intended to provide a coherent framework for action. Following an overview of gambling in the United States, the report presents findings and recommendations in the following areas: gambling regulation; problem and pathological gambling; internet gambling; Native American tribal gambling; and gambling's impact on people and places.

The report concludes with recommendations for future research, including a proposal that gambling components be added where appropriate to existing federal research in the substance abuse and other mental health fields. Appendices include statements by Commission members, text of the National Gambling Impact Study Commission Act, list of references, information sources and resources on gambling, glossary, and catalog of gambling legislation.

258 Nixon, G., McGowan, V., Frank, L., Grimshaw, M., Coghlan, S. (in preparation). Mythic structures underlying cognitive distortions among problem and pathological gamblers: A cross-cultural perspective on interpretative phenomenological approaches and therapeutic deconstruction.

This article examines cognitive distortions among problem and pathological gamblers from a phenomenological perspective and explores the mythic structures underlying these cognitive patterns. Interest in cognitive distortions commonly utilized by pathological gamblers, such as chasing losses, belief in cognitive control of random events, or reliance upon lucky objects, predominate in gambling research and underpin an explosion in therapeutic interventions seeking to realign irrational cognitive patterns with rational thought processes. The authors examine how cognitive distortions derive from archetypal symbols and are constituted as objects of experiences by Euro-Canadians and Blackfoot peoples in this article that reports on the results of two pilot studies.

Following initial screening by DSM-IV criteria, eleven Euro-Canadian and Blackfoot gamblers described lifetime gambling in loosely structured, in-depth, chronological interviews employing reflective questioning and invitations to amplify gambling-related fantasies and motivations. Blackfoot Elders identified relevant mythic themes, as these themes are contextualized in contemporary Blackfoot societies. Euro-Canadians described "winner" and "good luck" mythic themes typical of mainstream cultural norms; Blackfoot gamblers depicted a mixture of Blackfoot and mainstream themes. The hero's journey, for example, is evident in the discourse of either group. The authors discuss implications for counselling practice, including questions concerning the historical and cultural specificity of psychotherapeutic categories. Further, they critique the construction of pathology from a cross-cultural perspective and suggest further areas for research in cognitive patterning among gamblers that will involve First Nations peoples.

222 Nova Scotia Lottery Commission. (1993). Gaming in Nova Scotia. Nova Scotia: Government of Nova Scotia.

This document is the initial report of the Nova Scotia Lottery Commission, which was directed to study all current gaming issues in Canada and to report and make recommendations to the Government on the impact of such issues on Nova Scotia. Based on written submissions, telephone comments, public meetings, and the results of an independent public opinion survey, the Commission found that Nova Scotians are particularly concerned with video gambling, possible casino operation, and bingo.

The report begins with an overview of the results of a public opinion survey, conducted by Omnifacts Research Ltd., of 607 adult residents drawn randomly from the Nova Scotia general population. Methodological details for the survey are not provided. Results indicated that the Nova Scotia public was generally opposed to video lottery, was not receptive to placement of VLTs in convenience stores, did not favor the introduction of casinos into Nova Scotia, and preferred government to private ownership and operation of gaming activities. The report then presents detailed discussions of video gambling, casino operation, bingo, and ticket lotteries, and offers recommendations and draft regulations for each of these gaming activities. The document concludes with brief comments on a number of subjects, including aboriginal gaming and gambling education, which the Commission had begun to review and intended to include in its next report to the Government.

259 Peacock, R. B., Day, P. A., & Peacock, T. D. (1999). Adolescent gambling on a Great Lakes Indian Reservation. Journal of Human Behavior in the Social Environment, 21(1-2), 5-17.

This article, intended to provide information that will inform social work practice, reports on a survey of 185 American Indian and non-Indian students in grades 7-12 in one tribal and one public school on a reservation. This study replicates an earlier study by Zitzow (1992) on another reservation, which is summarized in the review of the literature provided. Differences and similarities in responses are reported. Limitations of the present study are reviewed and the authors urge replication of the present study for increased generalizability.

The authors contrast traditional tribal forms of gambling, which provided an integrated context for balancing and sanctioning gambling behaviours, with contemporary forms of large-scale gaming institutions. A summary of the literature from the United States and Canada on compulsive gambling and adolescent gambling, the fastest growing addiction among teens, is provided. These studies indicate that between 9.9% and 14.2% of the adolescent population are experiencing some symptoms of problem gambling and between 4.4% and 7.4% meet the criteria for pathological gambling. Risk factors, such as being male, urban, co-morbidity with alcohol and other drug problems, and early onset of gambling behaviours, are noted. Further, the troubled background of most problem and pathological gamblers highlights the need for systematic, longitudinal research in this area, especially among minority youth. Although higher rates of problem and pathological gambling are observed among American Indian youths, and risk factors are greater, few studies focus on this population.

The conceptual framework, methodology (including sampling frame), and questionnaire are described in detail in this article. Frequency distributions and correlations are reported, including use of alcohol and marijuana among respondents as an indicator of propensity to engage in other high-risk behaviours. Alcohol and marijuana use were negatively correlated with gambling activity ($p = .001$ for alcohol; $p = .011$ for marijuana) in this study, in contrast to previous research. Responses to questions that assessed psychological and social characteristics were similar to the findings of earlier studies that linked negative feelings to adolescent gambling. Moreover, in

comparison with non-Indian youth, the results of the present study indicate that American Indian youth are at greater risk for developing gambling behaviours and problematic gambling. A family history of gambling are positively correlated as well, indicating the significant impact of parental role models. The responses to DSM-III-R and DSM-IV based assessment of pathological gambling show that 2.8% are considered pathological gamblers. Chi-square values are reported for both assessments; gender differences on both instruments were non-significant. Of particular interest to socio-cultural researchers interested in adolescent gambling in Native American populations are high rates of at-risk behaviours, reports of negative feelings, and perceptions that respect will accrue from winning. Future studies should consider socio-economic status also.

- 260 Peacock, T. D., Day, P. A., & Peacock, R. B. (1999). At what cost? The social impact of American Indian gaming. Journal of Health and Social Policy, 10(4), 23-34.**

The potential for the “new buffalo” of gaming to greatly influence cultural traditions on American Indian reservations is discussed in this article, which reports on the first qualitative study of social impacts of gaming from a sociological and cultural perspective. The study was conducted on a reservation in northern Minnesota. Strong feelings, both positive and negative feelings, are reported among tribal members who shared concerns about gambling abuse and addiction, child care, substitution of gaming for traditional social activities, and replacement of traditional values by materialism. Supporters of gaming cite the emergence of a stronger and more collective consciousness, increased positive interactions with non-Indians, and employment and job skill training opportunities afforded by gaming. The authors report that most informants sensed that casino gaming was having as yet undetermined, but most likely negative, effects on traditional tribal culture.

The authors situate the research questions in the current literature on American and Canadian literature on psychosocial and economic impacts of Indian gaming. The grounded theory framework for data collection and analysis, phenomenological perspective, and multiple interview methodology used in this study are described in detail. This research highlights the strong responses, both positive and negative, provoked among American Indian peoples by the gaming issue. Implications for social policy are discussed, including the need for policy to counter the negative influences of gaming. The authors call for mandated, culturally appropriate research sponsored by tribal groups to focus on the social impact of gaming, with special attention to long-term effects on culture and traditions.

- 089 Quintim Business Services. (1995). Slave Lake gambling project: Survey results & analysis, January, 1995. Slave Lake, AB: Quintim Business Services or AADAC.**

This report summarizes the results of a survey of 420 Grade 7-12 students in two Slave Lake area schools, as well as a small sample of 41 adult attendees at community bingos. Results from the youth survey include prevalence according to demographic variables and type of gambling activity; source and amount of money spent on gambling; and students' perceptions of parents' gambling activities. Results from the adult survey include prevalence, types of gambling activities pursued, effects of gambling on personal finances, and feeling of concern about their gambling. Copies of the survey instruments are appended.

- 261 Salter, M. A. (1979). Games, goods, and gods: An analysis of Iroquoian gambling. Canadian Journal of Applied Sport Sciences, 4(2), 160-164.**

This article, based on historical narratives and ethnographic materials, examines the sacred and secular contexts of eleven traditional Iroquoian gambling games. Among northern members of the Iroquoian linguistic family (tribes of the Huron Confederacy and League of the Iroquois) during

the 17th and 18th centuries, gambling served as an important mechanism for stabilizing economic systems of these tribes through distribution of economic goods and services within and between communities. Further, gambling associated with ritual games served a quasi-religious function and had an important role in ensuring success of ceremonies. Participation was more important than winning or losing, although success in gambling symbolized personal skill levels and influenced social standings. The author discusses metaphysical belief systems and gambling practices associated with sacred rituals, including the perceived affinity between specific supernatural beings and particular games. Conventional views and images of Iroquoian gambling patterns that were perpetuated by historical narratives are questioned. The author suggests that traditional Iroquoian attitudes toward gambling must be understood in the context of economic and metaphysical belief systems.

**018 Slavik, W. (1993). A review of the research literature and other sources on problem gambling.
AB: AADAC.**

The intent of this report is to provide an introduction to the main issues related to problem gambling through a review of research literature and other sources on gambling. It is noted that research in this area is relatively new, and this is reflected by gaps and limitations in the research literature. Four main areas are reviewed: definition of terms, prevalence studies, treatment programs, and evaluation and related studies. In this last category are included studies on multiple disorders, physiological effects, problem gambler profiles, impact on family, gambling and Aboriginal peoples, adolescent-based studies, and prevention program studies. Canadian programs for problem gamblers are identified and described. A bibliography of 48 items is provided.

099 Volberg, R. A. (1994). The prevalence and demographics of pathological gamblers: Implications for public health. *American Journal of Public Health*, **84(2), 237-241.**

This article reports on the results of a 5-state random stratified study of gambling involvement and pathological gambling that had recently been completed. The purpose was to provide baseline data for addressing public health issues related to the expanding availability of legalized gambling. The sampling design was structured to ensure inferences could be drawn between the sample and the population 18 years and older in these states. Data from pathological gamblers in the general population and treatment programs were collected also. The interview was based on the South Oaks Gambling Screen (SOGS) and included questions concerning experiences with popular forms of gambling, gambling-related problems, and demographics. Differences in gambling involvement and pathological gambling rates were observed among the states involved in the study. Moreover, individuals entering treatment for gambling-related problems differed from those in the general population in gambling involvement and demographic characteristics. The results of chi-square analyses are presented. Specific issues concerning women, minorities, and youth are discussed.

The author provides a discussion of the reliability and validity of the SOGS, pointing out that SOGS may distinguish “probable” pathological gamblers in a population based study, in contrast to its use as a diagnostic tool in clinical evaluation. Policy and program implications of the study results are discussed, including the potential impact of continued gambling legalization on the overall rate of gambling problems in the general population and on specific at-risk groups, such as women, children, and minorities. The author suggests that harm minimization approaches will be needed to ameliorate the problems that will be experienced by some groups, beginning with prevention, treatment, and rehabilitation. Specific recommendations from a public health perspective are suggested.

This article will be particularly valuable to researchers concerned with methodological issues in the use of SOGS and design of large, multi-site studies with stratified sample design. Moreover,

important issues are presented, and strategies proposed from a public health approach, concerning women, youth, and minority groups.

100 Volberg, R. A. (1993). Gambling and problem gambling among Native Americans in North Dakota. Albany, NY: Gemini Research.

This report describes the results of the first study on gambling involvement and problematic gambling among Native Americans. 400 residents in North Dakota participated. Data were gathered by an extensive administered questionnaire, which is attached to the report, and investigated 16 different types of gambling, lifetime and current South Oaks Gambling Screen (SOGS) items, and demographic information. Details of the two-pronged data collection strategy are provided.

The key findings of the study are reported in the executive summary and expanded on in the body of the report in detail. Relevant statistics, including p values, are provided for tests of significant differences between dependent and independent variables. Differences by county are provided also. Similar to the general population, most respondents gamble or have gambled at some time in their lives (85%). Younger (under 30) and those with less than a high school education were more likely to have ever gambled. Lifetime prevalence rates of problem and probable pathological gambling were estimated at 14.5% among respondents, compared to 3.5% in general population; females are disproportionately represented in this group. Current prevalence rates of problem and probable pathological gambling were estimated at 12.3% of the population, compared to 2.0% in the general population. Live bingo and pulltabs, both continuous forms of gambling, are the most popular types and are closely associated with problem and probable pathological gambling. The author notes that extreme poverty in Native American communities has contributed to high rates of alcoholism, depression and suicide, and warns the reader that problem gambling must be addressed in light of future expansion of casino gambling planned for several reservations in the region.

This study provides a benchmark for future assessments of gambling involvement and problem and probable pathological gambling among Native Americans in North Dakota.

262 Volberg, R. A., & Abbott, M. W. (1997). Gambling and problem gambling among Indigenous peoples. Substance Use & Misuse, 32(11), 1525-1538.

This paper reports on the first comparative study of Caucasian and indigenous samples from two distinct cultures. Both Caucasian and indigenous respondents from North Dakota and New Zealand were compared in a secondary analysis of data from studies of gambling and problem that combined data from studies conducted in 1991 (n = 3,933; response rate 66%; New Zealand) and 1992 (n = 1517; response rate 60%; North Dakota). Methods and questionnaires used in these two studies were judged to be similar enough to allow comparisons. Both studies employed random digit dialing, with over-sampling of indigenous respondents to minimize bias created by low rates of telephone ownership. The questionnaires included sections on involvement in legal and illegal gambling; the weighed items in the South Oaks Gambling Screen (SOGS), framed as lifetime measures and current measures; and demographics. Chi-square analysis was used to identify statistically significant differences between Caucasian and indigenous samples. Significant and non-significant results are reported. Higher rates of gambling involvement, gambling expenditures, and gambling related problems were noted among indigenous respondents than among non-indigenous respondents. Socio-demographic patterns are presented, including age and gender differences and marital status.

This paper points out the substantial costs associated with gambling in Native American and Maori communities, providing a counterpoint to discussions that stress the socio-economic benefits of gambling. The authors suggest that differences and similarities observed in this analysis are due to factors other than culture or milieu, and compare the similar histories of colonization, accompanying policies of economic exploitation, continuing socio-economic disadvantages, and high rates of substance misuse experienced by Maori and Native Americans. They note that while indigenous problem and pathological gamblers in both locations are more likely to be women than in other jurisdictions, for example, their living conditions tend to resemble those of young urban men from minority groups in the USA.

The authors suggest that more research is needed among minority ethnic groups to determine to what extent higher prevalence rates of problem and pathological gambling among indigenous populations are a consequence of patterns of gambling involvement, age, unemployment, and low educational attainment rather than cultural or genetic differences. Further, they suggest that patterns of co-morbidity, especially with substance misuse, need to be investigated in clinical and community settings.

021 Wildman II, R. W. (1997). Gambling: An attempt at an integration. Edmonton, AB: Wynne Resources.

The author disputes a commonly held idea that little has been written on gambling by presenting a bibliography of over 3,800 items dating from 1500 to 1996, and comprising of clinical, research, scholarly, and discursive reports related to gambling.

Approximately 1,800 of these references are discussed in a comprehensive review that attempts to explain and integrate all aspects of gambling. The following topics are covered: definition and differentiation; history; parameters of general gambling; personal and individual factors relevant to gambling; mental and physical status of gamblers; typologies of the gambler; demographics of gambling (including prevalence); motivations for gambling; life in a gambling environment; mathematics of gambling; treatment of problem gamblers; societal implications of gambling; and an international perspective (ethnic dimensions). The author charts the growth of gambling literature, noting that most has been published since 1980, and over 60% in the last six years covered by the bibliography. This work fills a much needed gap in the literature of gambling in its attempt at both a synthesis and an exhaustive compilation of gambling literature through 1996.

Of particular interest for researchers interested in socio-cultural aspects of gaming and gambling are mentions of a few explanatory theories (e.g., archetypes and magic, adult play, and socialization/social lubrication) and a summary of prevalence studies, which attempts to situate particular socio-demographic patterns with normative orientations (such as prescriptive, proscriptive, or ambivalent attitudes).

The section on societal implications of American Indian gambling provides a succinct history of the impact of some American policies on Native American communities. Readers interested in the socio-cultural domain who are looking for a broad discussion of ethnographic materials will not find it in this review of the literature, as the few materials included receive cursory description in the chapters on societal implications and international perspectives. A much fuller discussion is afforded the sociological literature on gambling in Britain. Similarly, the chapter on international perspectives is limited to brief descriptive summaries of selected literature on gambling activities in 24 countries. Ethnographic research (such as available in the Human Relations Area Files, HRAF or eHRAF) has not been systematically treated in this review. The review carries a clinical and policy oriented bias.

- 263 **Wojciechowski, F. L. (1997). Big business and modern eastern Algonquin Indian identity: The casino connection. *Native American Studies*, 11(2), 39-42.**

This article examines the roles of revenues from high stakes gambling in dramatic changes that have taken place in the past few decades in the social position of Eastern Algonquian tribes of southern New England, focusing on ethnohistorical research and ethnographic fieldwork among tribes in Connecticut. In contrast to the extreme poverty, low socio-economic position, and almost complete loss of distinguishing cultural and linguistic identity markers among Eastern Algonquian tribes, dramatic change occurred following the passage of the Indian Gaming Act in 1988. The Gaming Act encouraged investment in high stakes gambling (bingos and casinos) on reservations, an activity not permitted in non-Indian controlled jurisdictions by state law.

The author explored how tribal fringe-tribal core relations changed as a consequence of the casino experience, with fringe members seeking to revive or revitalize their links with the ethnic “core” — individuals or families who have remained active in maintaining or promoting tribal identity. Three incentives for identifying as Indian in this new economic era are discussed: individual (involving self-esteem and self-respect), sociological (social status), and economic (economic advantages deriving from Indian identity). The author suggests that economic motives were dominant in the decisions of a majority of tribal members to actualize their genealogical claim to tribal membership. Moreover, claims the author, the sudden wealth from gambling has increased both self-esteem and status of tribal members, resulting in a new self-confidence in direct contrast to the recent past. The author notes, however, that while economic impacts of casino gambling may explain recent developments in Eastern Algonquian tribal identity, and particularly the relation between tribal core and tribal fringe, it does not explain the persistence of Eastern Algonquian tribes into the present.

- 264 **Zitzow, D. (1992). Incidence and comparative study of compulsive gambling behaviors between American Indian and non-Indians within and near a Northern Plains reservation. Bemidji, MN: Indian Health Service, Bemidji Area Office.**

This report details the results of three separate studies comparing gambling behaviours in Ojibway and non-Indian populations. The studies were conducted within or near a northern plains reservation in Minnesota and included an adolescent school survey (12-19 years), a random telephone survey of adults (20-86 years), and a systematic sample of active adult gamblers at various gambling sites.

The report summarizes the conceptual framework, methods, and results (frequency distributions, correlation and factor analyses for each response item) for each study in detail. Copies of the questionnaires used to conduct the interviews are provided. Limitations of the studies, such as inability to make sub-item comparisons because of small sample sizes and over-representation of females, are discussed and the reader is cautioned against generalization of the findings. Moreover, the author suggests that the adult active gambling sample remains theoretically biased, despite representative sampling.

The results of these studies indicate that gambling involvement, risk factors for problem gambling, and severity of problems related to gambling were higher among Indian adolescents than their non-Indian peers. Accessibility and availability appear to be significant determinants of adult gambling activities. No significant differences were noted in either participation rates in gambling or in problematic or compulsive gambling characteristics in comparison of Indian and non-Indian adults. Gender differences in gambling patterns were noted in the study of active adult gamblers, but not in overall problems or pathology. Significant differences between Indian and non-Indian active gamblers were noted in analyses of problematic and pathological gambling behaviours. The

author suggests that socio-economic factors such as poverty and alienation, and cultural beliefs and values concerning fate, control, materialism, and gratification of need should be examined as explanatory factors.

On the basis of this research, the author suggests that the recent introduction of large stakes casino gambling may not be the most significant event in modeling gambling within reservation communities. This research indicates that the time exposure to gambling suggested by research in the 1970s may best explain current patterns, and the most significant events in promoting problem gambling may have occurred in the previous 15 years with the onset of bingo, pull tabs, scratch cards, and lotteries. The author concludes with specific recommendations for further research.

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APPENDIX A

CRITERIA FOR CRITICAL APPRAISAL

Standardized criteria for assessment of literature
(Revised and adapted from O'Connor et al. 2000)

A. Criteria for quantitative research

1. sound external validity

- i. random or representative sampling; effects of differential attrition assessed and/or controlled for
- ii. adequate sample size
- iii. testing effects controlled for
- iv. possible reactivity effects taken into account and/or minimized
- v. possible effects of multiple factors and/or interventions taken into account and minimized
- vi. historical circumstances taken into account

2. sound internal validity

- i. validity and reliability of measuring instrument assessed
- ii. appropriate use of measuring instrument
- iii. random allocation of subjects to groups
- iv. assessment and/or minimization of possible problems caused by differential attrition from groups
- v. assessment and/or minimization of possible problems caused by the effect of testing
- vi. ensured conclusions reached about causal relationships warranted by study design and data, and that alternative explanations for such relationships were adequately ruled out
- vii. assessment and/or minimization of potential effects of maturation, history, and selection, and interactions of any of these factors.

3. sound statistical conclusions

- i. assessment and/or minimization of effects of statistical regression to the mean
- ii. appropriate application of statistical tests
- iii. adjustment for inflated error rate when conducting multiple comparisons
- iv. power of statistical tests used taken into account when drawing conclusions
- v. where sample sub-divided for analysis, confidence intervals included to give an indication of the precision in relation to the sub-sample size

B. Criteria for qualitative research

1. sound research design

- i. purpose of the research is clearly defined
- ii. design is appropriately chosen for phenomenon studied
- iii. systematic techniques for data collection appropriate to the study, adequately specified, described and employed in research process
- iv. form or genre appropriate for study

2. Interpretive validity of data
 - i. triangulation or other multiple data sources used
 - ii. sufficient data collected from a variety of participants over an appropriate length of time
 - iii. sampling strategy appropriate for and consistent with purpose of study
 - iv. context/setting adequately described
 - v. roles and standpoints of researcher and participant clear
 - vi. discrepant cases considered
 - vii. multiple voices included and first person used appropriately

3. analysis of data
 - i. analytical methods appropriate to the questions, methodology, and theoretical framework
 - ii. data analysis technique adequately described
 - iii. coding checks employed
 - iv. participants reviewed for accuracy and completeness

4. findings and interpretations
 - i. data tables and illustrations appropriate and necessary, and if used are legible, complete, and enhance understanding
 - ii. necessary data are reported
 - iii. adequate description provided of context, setting, and observations
 - iv. inclusion of empirical assertions or categories and properties, narrative vignettes, interpretive commentary, theoretical discussion
 - v. assertions supported by data, supported by quotes from various data sources, adequately referenced to source
 - vi. metaphors, if used, illuminate findings
 - vii. sufficient detail provided to compare findings with other contexts
 - viii. discussion is congruent with introduction / rationale for study
 - ix. implications are specified and explained
 - x. researchers are aware of own influence, both subtle and direct, on study findings

Following critical assessment using these criteria, the material will be categorised into one of five categories:

Very high quality studies provided enough detail that any methodological error could be detected and either none were found or any which were found would have been difficult to avoid, were minor, and unlikely to affect the validity of the conclusions.

High quality studies contained methodological errors which could have been avoided but which were unlikely to have affected the validity of the conclusions.

Reasonable quality studies had errors which may have affected the validity of the conclusions.

Poor quality studies were those which had numerous methodological errors which likely had an influence on the validity of the conclusions, and where the influence of these errors was unacknowledged by the authors.

Very poor quality studies had a major flaw in their methodology or provided no information on the method used (making any attempt to determine quality impossible).

C. Criteria for descriptive literature:

- Based on the literature, both descriptive and empirical
- Clarity and logic of presentation of argument and/or issues
- Degree of detail provided
- Whether generalisable to other settings
- Whether innovative in its approach and content, as opposed to repeating or reviewing familiar issues
- Degree of objectivity as opposed to personal opinion
- Whether conclusions and recommendations were consistent and sustainable with arguments (empirical or otherwise) presented

Following critical assessment using these criteria, the material will be categorised into one of three categories:

- Good description
- Moderate description
- Poor description

H. Criteria for policy papers

Quality of policy papers will be assessed according to whether they are intended as development or implementation documents.

Policy development papers will be assessed on the following criteria:

- Whether consultation took place with parties effected by policy
- Appropriate purposes and goals are stated
- Whether policy maker was given authority to implement the policy

Implementation papers will be assessed along the following criteria:

- Achievable goals
- Resource allocation
- Translation of goals into strategic planning
- Specific programs developed from the plans
- Provision for evaluating the program

General criteria will be applied to all policy papers:

- Empirical evidence considered
- Social justice principles adhered to
- Internal consistency
- Clarity and ease of interpretation

APPENDIX B

REVIEW OF MATRICES FOR ANNOTATED REFERENCES, LITERATURE REVIEWS AND PREVALENCE/INCIDENCE STUDIES

APPENDIX B

REVIEW MATRICES FOR ANNOTATED REFERENCES

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Ellis, D. (1984)	Ontario, Canada	Youth (gr. 6-8)	n=258	Survey	Self-reported deviation and delinquency, arcade involvement, academic performance index, and family control questionnaire; interview; and participant observation	On average participants spend just under 2 hours per week in arcades; 9.3% report spending more time in arcades than they spend doing any other listed activities	Correlation Matrix, Cronbach Alpha Reliability Coefficients, Multivariate Regression
Lesieur, H. R., & Klein, R. (1987)	New Jersey, United States	Youth (gr. 11-12)	n=292	Self-Administered Survey	Questionnaire asking engagement in various forms of gambling, extent of gambling, extent to which gambling created problems or interfered in various aspects of life; socio-demographics; DSM-III based Pathological Gambling Signs Index	91% had gambled; 86% gambled in the past year; 32% gambled weekly; 5.7% showed clear signs of pathological gambling	Intercorrelation Matrix
Dickerson, M., & Hinchy, J. (1988)	Australia	Off-course bettors and Poker machine players	Survey A: Off-course bettors, n=172; Survey B: Poker machine players, n=398	Self-Administered and Face to face Street-based Survey	Questionnaire including demographic data, the Sensation Seeking Scale, State-Trait Anxiety Questionnaire, and information about frequency, duration, and cash involvement in betting, control of expenditure, perception of skill and chance, and chasing losses		NA
Ide-Smith, S.G., & Lea, S.E.G. (1988)	United Kingdom	Youth (13-14)	n=50	Self-Administered Survey	Questionnaire including socio-demographics, attitudes, intelligence, and questions regarding participation in, frequency of, expenditures, location, social groups, and results of gambling	89% reported gambling	T-test & Multiple Regression Analysis
Ladouceur, R., & Mireault, C. (1988)	Quebec, Canada	Youth (High School Students: 14-18+)	n=1,612	Self-Administered Survey	Questionnaire developed by Lesieur & Klein (1987). Appears to include DSM-III criteria and gambling information about frequency, the family, work, school, borrowing money, and ways of obtaining money to gamble	Pathological Gamblers: 1.7%; 76% had gambled; 65% gambled in past year; 24% gamble at least once a week; 5.6% report wanting to quit gambling but are unable to	not indicated

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Lesieur, H. R., & Heineman, M. (1988)	New York, United States	Multiple substance abusing residents seeking treatment at South Oaks Hospital	n=100	Intake Screening Test	SOGS	Pathological Gamblers: 14%; Potential Pathological Gamblers: 14%; 16% had never gambled	Correlation Coefficient
Sommers, I. (1988)	Pennsylvania, New Jersey, United States	Adults (17+)	n=534	Telephone Survey	A pre-tested questionnaire consisting of questions designed to identify the 'hard signs' (compulsive gambling) and the 'soft signs' (potential pathological gambling) of gambling pathology, grouped around the themes of personal, interpersonal, vocational, and financial hardships, and demographic and respondent gambling participation information	Probable Pathological Gamblers: 3.3%; At Risk Gamblers: 7.49%; Gamblers: 30.6%	NA
Jacobs, D.F. (1989)	California, United States	Youth (gr. 9-12)	n=844	Self-Administered Survey	37 item Health Survey	85% of those with gambler parents had ever gambled; 8% of those with gambler parents were involved in "moderate to heavy" gambling	NA
Lesieur, H.R. (1989)	New York, United States	Association of Labor-Management Administrators and Consultants on Alcoholism Clients	n=86 (replies from ALMACA members)	Self-Administered and Telephone Survey	Questionnaire (details not given)	64% of those surveyed had identified pathological gamblers; pathological gamblers represented 1.4% of total client population	NA
Volberg, R.A., & Steadman, H.J. (1989)	United States: New Jersey & Maryland	Adults	n=1,750	Telephone Survey	SOGS	New Jersey: Pathological Gamblers=1.4%, Problem Gamblers=2.8%; Maryland: Pathological Gamblers=1.5%, Problem Gamblers=2.4%	Chi-Square Analysis
Volberg, R.A., & Steadman, H.J. (1988 & 1989)	New York, United States	Adults	n=1,000	Telephone Survey	SOGS	Probable Pathological Gamblers: 1.4%; Problem Gamblers: 2.8%	Chi-Square Analysis

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Frank, M.L. (1990)	New Jersey, United States	College Students (69% under age 21)	n=636	Self-Administered Survey	Gambling behavior and preferences, socio-demographics, SOGS	At-risk Gamblers: 6%; Gambled in last year: 59%; 66% of those who gamble were underage	NA
Ladouceur, R. (1991)	Quebec, Canada	Adults	n=1,002	Telephone Survey	SOGS	Current Pathological Gamblers: 1.2%; Problem Gamblers: 2.6%; 88.3% had gambled	Chi-Square Analysis
Baseline Market Research Ltd. (1992)	New Brunswick, Canada	Adults	n=800	Telephone Survey	SOGS based questionnaire	Pathological Gambling: 2%; Problem Gambling: 4%; Never Gambled: 13%	NA
Fisher, S. (1992)	United Kingdom	Youth (11-16)	n=467	Survey	DSM-IV-J criteria based questionnaire	62% had gambled; 9% of those were probable pathological and 91% social	Chi-Square Analysis
Huxley, J., & Carroll, D. (1992)	United Kingdom	Youth (11-12 & 14-15)	n=1,332	Self-Administered Survey	Questionnaire including demographic variables, use of and frequency of use of machines, amounts of money spent on machines, truancy, borrowing and stealing to play, experiences in arcades, parental gambling involvement, and who youth played with	62% had played either fruit machines or video games; 17.4% were solely fruit machine players; 61.9% of the fruit machine players report playing with friends	Chi-Square Analysis
Legarda, J.J., Babio, R., & Abreu, J.M. (1992)	Spain	Adults	n=598	Survey & Questionnaire	SOGS	Probable Pathological: 1.7%; Problem: 5.2%	NA
Zitzow, D. (1992)	Minnesota, United States	Youth (12-19) & Adults (20-86) (American Indian and non-Indian)	Youth: n=277; Adults: Telephone-n=261, Interview Survey-n=221	Youth: Self-Administered Survey; Adults: Telephone and Interview Survey	Youth: Questionnaire including SOGS, DSM-III-R, and GA items, and sections about feelings, types of gambling participation, and descriptive information; Adults: Phone Survey-Questionnaire including: DSM-III-R criteria, gambling activities, and brief descriptive information; Interview Survey-Questionnaire involving DSM-III-R questions, childhood experiences, types of gambling participation, problematic gambling behaviors, and descriptive data	Youth: American Indians-Pathological Gambling: 9.6%, Problem Gambling: 14.8%, non-Indians-Pathological Gambling: 5.6%, Problem Gambling: 10.5%; Adults: Telephone Survey-99% have gambled, Interview Survey: American Indians-Pathological Gambling: 9.1%, Problem Gambling: 2.8%; Non-Indians-Pathological Gambling: 4.6%, Problem Gambling: 1.6%	Pearson r Correlation Analysis, Chi-Square Analysis, & T-tests
Becona, E. (1993)	Spain	Adults	n=1,615	Survey & Interview	DSM-III-R criteria based questionnaire	Pathological: 1.7%; Problem: 1.6%; Excessive social: 0.6%; Ex-excessive social: 1.0%; Occasional: 60.2%	Chi-Square Analysis

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Browne, B.A., & Brown, D.J. (1993)	Oregon, United States	Adults: Marketing students & general population	n=1,297 (288 students; 1,009 general population)	Self-Administered and Telephone Survey	Questionnaire of attitudes toward gambling and gambling practices patterned after State of Oregon tracking gambling surveys	95% of the students thought that most people like to gamble; Students' attitudes, game preferences, and reasons for play were similar to those of the general population	Chi-Square Analysis
Ciarrocchi, J.W. (1993)	Maryland, United States	Outpatient substance abuse treatment clients	n=467	Intake Screening Test	SOGS	Pathological Gamblers: 4.5%; Problem Gamblers: 6.2%	Chi-Square Analysis
Fisher, S. (1993)	United Kingdom	Youth (11-16)	n=467	Self-Administered Survey	DSM-IV-J criteria based questionnaire	Pathological Gambling: 5.7%; Weekly Gambling: 17.3%; have gambled on fruit machines: 62%	Chi-Square Analysis
Templer, D.I., Kaiser, G., & Siscoe, K. (1993)	Nevada, United States	Medium security prison inmates	n=136	Intake Screening Test	SOGS, MMPI, and Raven's Standard Progressive Matrices	Probable Pathological Gamblers: 24.26%; Some problem: 22.79%	Pearson Product-Moment Correlation Coefficients and Stepwise Multiple Regression
Volberg, R.A. (1993)	North Dakota, United States	Native Americans	n=400	Survey	Questionnaire investigating demographics, types of gambling, and lifetime and current SOGS items	Lifetime problem and probable pathological gambling: 14.5%; Current problem and probable pathological gambling: 12.3%; 85% have gambled	NA
Volberg, R.A. (1993)	Washington, United States	Adults	n=1,502	Telephone Survey	SOGS based questionnaire	Probable Pathological Gambling: 1.5%; Problem Gambling: 3.5%; Previously Gambled: 91%	NA
Volberg, R.A., & Silver, E. (1993)	North Dakota, United States	Adults	n=1,527	Telephone Survey	SOGS-R based questionnaire	Probable Pathological Gamblers: Lifetime=1.0%, Current=.7%; Problem: Lifetime=2.5%, Current=1.3%	NA
Wallisch, L.S. (1993)	Texas, United States	Adults	n=6,308	Telephone Survey	SOGS based questionnaire	Pathological Gamblers: Lifetime=1.3%, Current=0.8%; Problem Gamblers: Lifetime=3.5%, Current=1.7%	NA
Dickinson, H.D. (1994)	Saskatchewan, Canada	Adults	n=1,000	Telephone Survey	SOGS-R based questionnaire	Pathological Gamblers: Lifetime=1.2%, Current=0.8%; Problem: Lifetime=2.8%, Current=1.9%	NA

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Ladouceur, R., Boisvert, J.M., Pepin, M., et al., (1994)	Quebec, Canada	Pathological gamblers attending GA meetings or therapy sessions at the Center for the Treatment of Pathological Gamblers at Laval University	n=60	Self-Administered Survey	31 item questionnaire evaluating the impact of pathological gambling on employment related behaviors, debts, money spent on gambling, illegal acts, frequency of drug and alcohol use, and psychosomatic complaints	Reported gambling frequencies	NA
Ladouceur, R., Dube, D., & Bujold, A. (1994)	Quebec, Canada	Children (8-13)	n=1,320	Self-Administered Survey	7 item questionnaire asking about the choice of games, amounts and objects wagered, and sources of money used to gamble	86% had gambled; 61% gamble with lotteries; 41.3% gambled weekly	Chi-Square Analysis
Ladouceur, R., Dube, D., & Bujold, A. (1994)	Quebec, Canada	College Students (16-23)	n=1,471	Self-Administered Survey	SOGS and Jacob's Health Survey and socio-demographic questions	Pathological Gamblers: 2.8%; Potential Pathological Gamblers (Score 3+ on SOGS): 5.8%; 90% had gambled; 21.7% gamble weekly	Chi-Square Analysis
Shaffer, H.J., LaBrie, R., Scanlan, K.M., et al., (1994)	Massachusetts, United States	High School Youth (13-20)	n=856	Self-Administered Survey	DSM-IV Questionnaire & Massachusetts Gambling Screen (MAGS)	DSM-IV: 6.4% were pathological gamblers; MAGS: 8.5% were pathological gamblers	Discriminant Function Analysis
Sullivan, S., Abbott, M., McAvoy, B., et al., (1994)	New Zealand	Telephone Hotline Callers	n=329	Reports of Helpline Calls	SOGS, DSM-III-R, DSM-IV, and Socio-demographic data and symptoms of stress and depression questionnaires	167 of the calls were from individuals reporting gambling problems; 117 were from individuals reporting his/her partner's gambling problems; 45 of the calls were from other agencies requesting information	NA
Volberg, R.A., & Abbott, M.W. (1994)	New Zealand	Adults	n=4,053	Telephone Survey	SOGS	Probable Pathological Gamblers: 2.7%; Problem Gamblers: 4.2%; Gambled: 95%	Discriminant Analysis

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Volberg, R.A. (1994)	United States: California, New Jersey, Maryland, Massachusetts, Iowa	Adults	n=4,442	Telephone Survey	SOGS based questionnaire including experience with gambling, gambling related problems, and demographic characteristics	Massachusetts: Pathological Gamblers=2.3%, 90% had gambled; Maryland: Pathological Gamblers=1.5%, 89% had gambled; New Jersey: Pathological Gamblers=1.4%, 92% had gambled; California: Pathological Gamblers=1.2%, 89% had gambled; Iowa: Pathological Gamblers=0.1%, 84% had gambled	Chi-Square Analysis
Volberg, R.A., & Stuefen, R.M. (1994)	South Dakota, United States	Adults	n=1,767	Telephone Survey	SOGS based questionnaire	Pathological Gambling: 0.9%; Problem Gambling: 1.4%	NA
Wynne, H.J., Smith, G.J., & Volberg, R.A. (1994)	Alberta, Canada	Adults	n=1,803	Telephone & Face to face Survey	SOGS-R	Pathological Gambling: Current=1.45%, Lifetime=2.7%; Problem Gambling: Current=4.0%, Lifetime=5.9%	NA
Adebayo, B. (1995)	Alberta, Canada	College Students (17+)	n=521	Self-Administered Survey	SOGS based Questionnaire	88% have gambled; Females: 59%; Males: 41%; 51.4% have experienced problems due to gambling	NA
Buchta, R. M. (1995)	California, United States	Youth (12-18)	n=200	Self-Administered Survey	Questionnaire regarding various gambling activities, amounts wagered, amounts won or lost, parents' gambling involvement, and appropriateness of youth gambling	71% had gambled at least once; 83% of males gambled; 61% of females gambled	Student's t-test, ANOVA, Frequency analysis, & Chi-Square Analysis
Citizen Advocacy Society of Lethbridge (1995)	Alberta, Canada	Senior Citizens (65+)	n=129	Mail & Telephone Survey	SOGS	Probable Pathological Gambler: 0.0%; Some Problem: 10.86%; No Problem: 89.15%	NA
Dowson, R. (1995)	Alberta, Canada	Youth (gr. 7-9)	n=250 (Ashmont School: 142; Control School: 108)	Self-Administered Survey	SOGS-RA	Problem Gamblers: 19.7% Ashmont School; 6.5% Control School; At-risk Gamblers: Ashmont School 23.9%; Control School: 11.1%	NA
Ferris, J., & Stirpe, T. (1995)	Ontario, Canada	Adults	n=1,030	Telephone Survey	SOGS, DSM-IV criteria, & Life-areas problem measure questionnaire	Pathological Gamblers: 1.0%; Problem or Potential Pathological Gamblers: 19%	NA

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Integrated Planning Group (1995)	Alberta, Canada	Adults	n=374	Telephone Survey	SOGS based questionnaire	Pathological Gamblers: 1.04%; Problems Gamblers: 4.01%; At-risk Gamblers: 9.5%; Current Gamblers: 75%	NA
Mountainview Homehelp Association (1995)	Alberta, Canada	Youth (gr. 7-12)	n=283	Self-Administered Survey	Questionnaire (no indication of formulation)	Problem Gamblers: 9.89%; At-risk Gamblers: 11.66%; Gamblers: 87.27%	NA
Quintim Business Services (1995)	Alberta, Canada	Adults & Youth (gr. 7-12)	n=461 (Adults: n=41; Youth: n=420)	Self-Administered Survey	Questionnaires including socio-demographic, reasons for gambling, types of gambling activities, frequencies, and feelings surrounding gambling	Frequency and reasons for gambling data	NA
Spunt, B., Lesieur, H., Hunt, D., et al., (1995)	New York, United States	Adults (Patients in a Methadone Maintenance treatment program)	n=117	Face to face Survey	SOGS based questionnaire	Pathological Gambling: 16%; Problem Gambling: 15%; 85% gambled in past 6 months	NA
Cool Aid Society of Grande Prairie (1995)	Alberta, Canada	Youth (gr:7-12)	n=895	Self-Administered Survey	SOGS-RA based questionnaire	Problem Gamblers: 8.72%; At-risk: 21.46%	NA
Zeigler, D. (1995)	Alberta, Canada	Adults	n=70	Telephone Survey	SOGS-R	Probable Pathological: 2.89%; Some Problem: 0.0%; No Problem: 97.1%	NA
Abbott, M.W., & Volberg, R.A. (1996)	New Zealand	Adults	n=4,000	Telephone Survey	SOGS-R	Pathological Gambling: Lifetime=2.7% (+/- 0.5%), Current=1.2% (+/- 0.3%); Problem Gambling: Lifetime=4.2% (+/- 0.6%), Current=2.1% (+/- 0.4%); 95% had gambled	Chi-Square Analysis & Discriminant Function Analysis
Baseline Market Research Ltd. (1996)	Nova Scotia, Canada	Adults (19+)	n=801	Telephone Survey	SOGS based questionnaire	Problem Gambling: 5.5%; Gambled previously: 96%	NA
Boreham, P., Dickerson, M., & Harley, B. (1996)	Australia	Adults	n=500	Telephone Survey	Questionnaire including demographics, patterns of machine playing, and a series of indicators of social and economic well-being	Just under 41% had played a gaming machine in the past 12 months; 0.5% played daily; 9.7% played weekly; 42.1% played monthly or every two months	NA

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Cosby, A.G., May, D.C., Frese, W., et al., (1996)	United States	Adults (17+)	n=1,514	Telephone Survey	Questioned whether subject thought gambling should be legalized	70% thought gambling should be legalized	Chi-Square Analysis
Daghestani, A.N., Elenz, E., & Crayton, J.W. (1996)	Illinois, United States	Adults (Hospitalized substance abusing veterans)	n=276	Face to face Survey	Interviewed using SOGS and a questionnaire regarding gambling and substance abuse behaviors, medical, social, and family history, and other social and psychological factors	Pathological Gamblers: 33%	Student T-tests & ANOVA
Derevensky, J.L., Gupta, R., & Cioppa, G.D. (1996)	Quebec, Canada	College Students (17+)	n=104	Self-Administered Survey	14 item questionnaire measuring past gambling, frequency, etc.	70% gambled in past; 53% gambled once a week or more.	T-test
Devlin, A.S., & Peppard, D.M. (1996)	Connecticut, United States	College Students	n=238	Self-Administered Survey	Socio-demographics, SOGS-Plus, and Use of Foxwoods Resort Casino based Questionnaire	72.7% had gambled; 2.5% met criteria for problem gambling	Chi-Square Analysis
Dickerson, M.G., Baron, E., Hong, S.-M., et al., (1996)	Australia	Adults	n=2,744	Random 'Doorknock' Survey	Leisure Survey, Gambling participation, Demographics, SOGS, General Health Questionnaire, Beck Depression Inventory, Choice/control of gambling scale & Sensation-Seeking scale	Current Problem Gamblers: 1.16% (+/-0.34%)	Two-tailed T-tests
Eckstrom, C. (1996)	Alberta, Canada	Youth (13-18)	n=300	Survey (Qualitative & Quantitative Components)	Questionnaire comprising of components from 1995 Nechi Adolescent Gambling Questionnaire and 1992 Gamblers Self-Report Inventory regarding behaviors, attitudes, prevalence of gambling, smoking, and drinking, accessibility, and intervention or prevention strategies	75% had gambled; 31% had gambled before age 10	Chi-Square Analysis & T-tests
Faveri, A., & Gainer, L. (1996)	Ontario, Canada	Multicultural Social Service Providers and their clients	n=199 (Service Providers: 44, Clients: 155)	Self-Administered Survey	Service Providers Questionnaire included questions about agency information, opinions of gambling behavior prevalence and amount of gambling involvement among clientele, and knowledge of treatment services; Client questionnaire included demographics, gambling participation, amount spent on gambling, and gambling consequences	58% of service providers reported having seen 1-5 clients with self-identified gambling problems in the past year; 10% of clients self-identified as having gambling problems either in the past or at present; 2/3 of the clients engage in gambling activities	NA

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Govoni, R., Rucpich, N., & Frisch, G.R. (1994 & 1996)	Ontario, Canada	Youth (14-19)	n=965	Survey	SOGS-RA	Problem Gambling: 8.1% (+/- 1.8%); At-risk Gambling: 9.4% (+/- 1.9%)	Chi-Square Analysis
Kearney, C.A., Roblek, T., Thurman, J., et al. (1996)	Nevada, United States	Youth	n=193 (Roman Catholic High School Students: 109; Juvenile Detention Facility Residents: 84)	Self-Administered Survey	43 item survey including demographic characteristics, frequency and practices of casino gambling, parental attitudes and gambling practices, and social, legal, and emotional consequences of gambling	36.8% gambled regularly (1-5 days/month); 23.9% of those who gambled regularly reported suffering problems from their gambling (ie. debt, legal trouble, drug use, declining grades)	Chi-Square Analysis & Bonferroni Correction
Lo, J. (1996)	Alberta, Canada	Adults (16+) living in Calgary's Chinatown & East-end	n=400	Telephone and Face-to-face Survey	SOGS	Problem Gambling: 7.75%	NA
Miller, M.A., & Westermeyer, J. (1996)	Minnesota, United States	Patients at a Veterans Administration Medical Center	n=412	Survey	SOGS	Pathological Gambling: 15%; Mild gambling problems: 25%; Overall rate of pathological gambling was about 10 times that of the general state population	NA
Napi Friendship Center, & AADAC (1996)	Alberta, Canada	Adults living in south west Alberta	n=248	Telephone and Face-to-face Survey	SOGS & 'Spirit of Bingoland' Survey based questionnaire	53% spend more than \$15/month gambling; 7% of those who gamble feel their gambling is a problem	NA
Wallisch, L.S. (1996)	Texas, United States	Adults & Youth (14-17)	n=10, 094 (7,015 adults; 3,079 youth)	Telephone Survey	SOGS and MAGS	Adults: Current Pathological Gamblers= 0.8%, Lifetime Pathological= 1.8%; Current Problem Gamblers= 2.2%, Lifetime Problem Gamblers= 3.6%, 68% had placed a bet in the past year; Youth: 77% had gambled during past year; Problem Gamblers: 2.3%; At-risk: 9.9%	NA
Westphal, J.R., & Rush, J. (1996)	Louisiana, United States	Adults	n=1,818	Telephone Survey	SOGS	4.4% of those >21 and 14.3% of those 18-21 have gambling disorders according to Table 3 (discrepancies noted between statistics given in abstract and Table 3)	NA

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Wynne, H.J., Smith, G.J., & Jacobs, D.F. (1996)	Alberta, Canada	Youth (12-17)	n=972	Telephone Survey & In-depth field interview	Alberta Adolescent Gambling Survey questionnaire (incorporates SOGS-R)	Problem Gamblers: 8%; At-risk Gamblers: 15%; Gamble: 67%	NA
Becona, E. (1997)	Spain	Youth (11-16)	A Coruna, Galicia: n=1,200; Gijon, Asturias: n=2,185	Survey	DSM-IVJ & SOGS-RA	A Coruna (DSM-IVJ): Pathological Gamblers =2.2%, Occasional Gamblers= 4.9%; (SOGS-RA): Pathological Gamblers= 2.4%; Gijon (DSM-IVJ): Pathological Gamblers= 1.6%, Occasional Gamblers= 4.7%	NA
Duvarci, I., Varan, A., Coskunol, H., & Ersoy, M.A. (1997)	Turkey	Psychiatric inpatients and outpatients, hospital staff or internship students, and the general public	n=59 (Psychiatric inpatients or outpatients: 36)	Survey	DSM-IV Criteria & SOGS based interviews	Pathological Gamblers according to DSM-IV: n=35, according to SOGS: n=32	Chi-Square Analysis
Hendriks, V.M., Meerkerk, G.-J., Van Oers, H.A.M., et al. (1997)	Netherlands	Lottery ticket purchasers 14-83 years	n=4,497	Survey	Pre-tested SOGS and DSM-III based questionnaire	Problem Gamblers: 0.7%; At Risk: 4%	NA
Kaplan, G., & Davis, B. (1997)	Manitoba, Canada	Adult Addiction Foundation of Manitoba treatment clients	n=1,134	Data derived from a client-based information system	CAGE & Manitoba Gambling Pre-Screen (MGPS)	Problem gambling clients tend to be female; Demographics differ from gambling clients to chemical abuse clients	Chi-Square Test
Moore, S.M., & Ohtsuka, K. (1997)	Australia	Youth (14-25)	n=1,017	Survey	Questionnaire measuring gambling attitudes, subjective norms, motivation, gambling intentions, and gambling behavior, and included the SOGS-R	3.1% classified themselves as problem gamblers; 24.5% did not gamble at all	T-tests, Correlation Coefficients, & Hierarchical regression analyses
Stinchfield, R., Cassuto, N., Winters, K., et al. (1997)	Minnesota, United States	6th, 9th, and 12th grade public school students	1992: n=122,700; 1995: n=75,900	Self-Administered Survey	Minnesota Student Survey	Reported gambling frequencies	Chi-Square Analysis & Stepwise Multiple Regression

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Sullivan, S.G., McCormick, R., & Sellman, J.D. (1997)	New Zealand	First time Gambling Crisis Telephone Hotline callers	n=1,336	Reports of Helpline Calls	Volunteer based caller disclosure; Semi-structured questionnaire used based upon particulars of callers	732 calls were from individuals reporting gambling problems; 604 were from individuals reporting significant other's gambling problems	NA
Walters, G.D. (1997)	Pennsylvania, United States	Medium security federal prison inmates	n=363	Interview Survey	SOGS	Pathological Gambling: 5.2%; Problem Gambling: 7.4%	Logistic Regression Analysis, Chi-Square Analysis, Duncan Multiple Range Test, and Residual Variance
Adebayo, B. (1996 & 1998)	Alberta, Canada	Youth (gr. 7-8)	n=745	Survey	SOGS-RA Questionnaire	98% had gambled in last 12 months; no indication of % of problem & pathological gambling	NA
Adebayo, B. (1998)	Alberta, Canada	College Students (17-62)	n=521	Self-Administered Survey	SOGS based questionnaire	Frequency and reasons for gambling data	Cross-Tabulation Analysis
Black, D.W., & Moyer, T. (1998)	Iowa, United States	Recruited persons reporting compulsive gambling behavior	n=30	Telephone and Face-to-face Survey	SOGS, National Institute of Mental Health Diagnostic Interview Schedule, Minnesota Impulsive Disorders Interview, Personality Diagnostic Questionnaire-IV, Beck Depression Inventory, Maudsley Obsessive-Compulsive Inventory, and the Medical Outcomes Study Short Form	100% reported gambling more money than intended to; 67% reported gambling as a current problem; 30% reported it as a past problem; 70% wanted to stop gambling but did not feel they could	NA
Blaszczynski, A., Huynh, S., Dumlao, V.J., et al. (1998)	Australia	Adults (parents of children attending a Chinese language school in the Southwestern Metropolitan area of Sydney)	n=508	Self-Administered Survey	SOGS	Pathological Gambling: 2.9%, Males=4.3%, Females=1.6%; Never Gambled: 60%	NA
Cunningham-Williams, R.M., Cottler, L.B., Compton III, W.M., et al. (1998)	Missouri, United States	Adults	n=2,954	Survey	DSM-III-based Diagnostic Interview Schedule	Lifetime Pathological Gambling: 0.9%; Problem Gambling: 9.2%; Recreational Gambling: 46%	Chi-Square Analysis & Clustered, Weighted Multiple Logistic Regression

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Govoni, R., Frisch, G.R., Rupcich, N., et al. (1998)	Ontario, Canada	Adults	1993-1994: n=2,682, 1995: n=2,581	Telephone Survey	Modified SOGS, attitudes toward and involvement with Casino Windsor, demographics, and awareness of treatment options for problem and pathological gambling questionnaire	Pathological Gamblers: 1993-1994 (pre-casino opening)=0.8% (+/-0.3%), 1995 (post-casino)=1.1% (+/-0.3%); Problem Gamblers: 1993-1994=1.5% (0.3%), 1995=1.1% (=/-0.3%)	Chi-Square Analysis, Mann-Whitney U test, and Kolmogorov-Smirnov 2-Sample test
Shepherd, R.M., Ghodse, H., & London, M. (1998)	United Kingdom	Adults	n=206	Self-Administered Postal Survey	Questionnaire regarding demographics, National Lottery and scratch card purchases, and DSM-IV criteria	Of the 89% of National Lottery ticket and the 50% of scratch card purchasers, 1% were identified as Pathological Gamblers	Wilcoxon Statistical Analysis & Spearman Correlation Analysis
Westphal, J.R., Rush, J.A., Stevens, L., et al. (1998)	Louisiana, United States	Youth in residential placement for behavioral problems (12-18)	n=135	Self-Administered Survey	SOGS-RA and demographic and substance use questions	Pathological Gambling: 38%; Problem Gambling: 21%; Low risk/minimal problems: 41%; 86% had gambled	NA
Winters, K.C., Bengston, P., Dorr, D., et al. (1998)	Minnesota, United States	College Students (17+)	n=1,361	Self-Administered Survey	Questionnaire including demographic, school performance, and drug use frequency, SOGS, expenditures on gambling, personal finances, and perceptions of peer gambling	Probable Pathological Gambling: 2.9%; Potential Pathological Gambling: 4.4%; 68% scored 0 on the SOGS; 87% gambled in past year	Chi-Square Analysis
Wynne Resources, & AADAC (1998)	Alberta, Canada	Adults	n=1,821	Telephone Survey	Alberta Adult Gambling Survey (incorporates SOGS-R)	Probable Pathological Gamblers: 2.0%; Problem Gamblers: 2.8%; Gambled in last year: 87.4%	Odds Ratio Analysis & Stepwise Logistic Regression
Beaudoin, C.M., & Cox, B.J. (1999)	Manitoba, Canada	Adults seeking treatment for gambling problems at the Addictions Foundation of Manitoba	n=57		DSM-IV criteria based questionnaire & SOGS		Correlation Coefficient
Cuadrado, M. (1999)	Florida, United States	Hispanic and Anglophone Telephone Help Hotline callers	Hispanic: n=209; Anglophone: n=5,311	Survey based on Hotline calls	Closed ended questionnaire regarding demographics, types of gambling activities, types of problems due to gambling, and debts	Mean number of gambling problems was greater for Anglos than for Hispanics: 4.83 vs. 4.25 (t=3.81, df=5,282, p<.001)	Chi-Square Analysis (contingency tests) & T-tests
Doiron, J., & Nicki, R. (1999)	Prince Edward Island, Canada	Adults	n=809	Telephone Survey	SOGS & Canadian Problem Gambling Index (CPGI) based questionnaire	Probable Pathological Gamblers: 2%; Problem Gamblers: 1.1%; Non Gamblers: 17%	NA

NA = Not Available

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Doupe, M. (1999)	Manitoba, Canada	Community professionals	n=25	Face to face or Telephone Survey	Key Informants Survey	<i>Information not available as original article was not obtained</i>	NA
Fisher, S. (1999)	United Kingdom	Youth (12-15)	n=9,774	Survey	DSM-IV-J criteria based Questionnaire	Problem Gambling: 5.6%	Stepwise Logistic Regression Analysis
Griffiths, M., Scarfe, A., & Bellringer, P. (1999)	United Kingdom	Helpline Callers	n=1,729	Reports of Helpline Calls	Volunteer based caller disclosure; No questionnaire used	51% of calls were from individuals reporting gambling problems; 26% of calls were from individuals reporting a family member's gambling problems	NA
Ladouceur, R., Jacques, C., Ferland, F., et al. (1999)	Quebec, Canada	Adults	n=2,259 (1989: n=1,002; 1996: n=1,257)	Telephone Survey	SOGS	Pathological: 1989-1.2%; 1996-21.5%; Problem: 1989-2.1%; 1996-2.4%	Chi-Square Analysis, ANOVA, & MANOVA
National Gambling Impact Study Commission (1999)	United States	Adults & Youth	n=2,417 adults, n=534 youth, n=530 adult gambling facility patrons	Telephone and Patron Survey	Questions focusing on problem gambling	Adults: Lifetime pathological gambling 1.2%; current pathological gambling 1.5%; current problem 0.7%; youth statistics comparable to adults	Chi-Square Analysis
Pasternak, A.V., & Fleming, M.F. (1999)	Wisconsin, United States	Adults (Primary Care Patients)	n=1,051	Self-Administered Survey	SOGS and questions regarding drug use, health, and socio-demographics	Pathological Gamblers: 2.8%; Problem Gamblers: 3.4%; 80.7% had gambled	T-tests, Chi-Square Analysis, Logistic Regression, and Odds ratios
Shaffer, H.J., Vander Bilt, J., & Hall, M.N. (1999)	United States	Casino Employees	n=3,841	Self-Administered Survey	Health Risk Assessment, CAGE, & SOGS	Pathological Gambling: 2.1%; Problem Gambling: 1.4%	Kruskal Wallis Nonparametric Analysis, Dunnett C post-hoc tests, Chi-Square Analysis, Cotinine tests, Pearson Correlation Coefficient, & Discriminant Function Analysis
Wiebe, J. (1999)	Manitoba, Canada	Youth (12-17)	n=1,000	Telephone Survey	SOGS-RA	Problem Gamblers: 3.0%; At-risk Gamblers: 8%; Gambled in past year: 78%	Chi-Square Test & ANOVA

Socio-Cultural Domain: Prevalence & Incidence – Primary Data							
Author/Year	Geographic Location	Population	Sample Size	Method	Methodology	Prevalence or Incidence Rates	Other Statistics
Azmier, J.J. (2000)	Canada	Adults	n=2,202	Telephone Survey	Questionnaire measuring both gambling behavior and attitudes influenced by the six annual Community Gambling Patterns and Perceptions surveys undertaken in Australia	Regular (weekly) Gamblers: 27%; Do not gamble or like to gamble.	Regional, weighted, and segmentation analyses
Bondolfi, G., Osiek, C., Ferrero, F. (2000)	Switzerland	Adults	n=2,526	Telephone Survey	SOGS & CAGE	Current Probable Pathological Gamblers: 0.8%; Potential: 2.2%	NA
Pugh, P., & Webley, P. (2000)	United Kingdom	Youth (13-15)	n=256	Self-Administered Survey	Questionnaire including types of gaming activities, gambling expenditure, participation, level of awareness of legalities, and demographics	56% participated in the National Lottery on-line game; 54% participated in the National Lottery Instants Scratch cards	Stepwise Multiple Regression
Weshphal, J.R., Rush, J.A., Stevens, L., et al. (2000)	Louisiana, United States	Youth (gr. 6-12)	n=12,066	Survey	SOGS-RA Questionnaire	5.8% pathological; 10.1% problem; 70.1% gambled without problems; 14% never gambled	Chi-Square Analysis, MANOVA, Discriminant Function

Literature Reviews

Author/Year	Focus of Review	Perspective, Conclusions and Key Recommendations
Blaszczynski & Silove 1996	pathological gambling, arguments of diminished responsibility, and crime	focus on implications for corrections; argues against accepting pathological gambling as a factor in reducing criminal responsibility for offences; courts need to consider diagnoses of pathological gambling in sentencing
Cox et al. 1997	problem and pathological gambling in America	focus on legalized gambling and its recent expansion in the US; research indicates the interaction of complex biological, psychological and social factors in problem and pathological gambling; research into prevalence and social-economic costs, as well as broad-ranging public policies are needed
Crockford & el-Guebaly 1998	psychiatric co-morbidity in pathological gambling	clinical epidemiological perspective; pathological gambling is associated with significant psychiatric co-morbidity; correlations need further research
Filteau, Baruch & Vincent 1992	pathological gambling and psychoanalytic theory	historical perspective; traces history of psychiatric studies of pathological gambling and reviews descriptions of pathological gambling in psychoanalytic theory and practice
Gowen 1996	pathological gambling and community corrections	examines implications of pathological gambling for community corrections; use of diagnostic and screening instruments (GA and SOGS) described; specific practical advice given for corrections
Griffiths 1996	pathological gambling and explanations for gambling behaviour	clinical epidemiological perspective; micro-level perspective on gambling as individual, idiosyncratic problem; supports integrated bio-psychosocial model for understanding development of gambling problems
Griffiths 1995	adolescent gambling in Britain	functional/behavioural theoretical framework applied to adolescent gambling; suggests that various research methods should be used to explore specific questions
Griffiths 1991	gambling in childhood and adolescence; video games and fruit machines	social epidemiological perspective; comparative analysis of video game and fruit machine studies presented; positive and negative aspects considered; developmental model of pathological gambling proposed
Griffiths 1989	gambling in childhood and adolescence	social epidemiological perspective; general categories of research identified; more controlled, systematic research needed to replicated existing findings, provide empirical data, and explore causal or associational relationships among correlated variables; adolescent survey research needed; suggests Miller's functional/behavioural analysis model as a theoretical framework
Hsu 1999	economic and social impacts of legalized casino gambling in the USA	socio-economic perspective; gaming viewed as a mixed blessing in native communities; social and economic impacts overshadow, eventually, economic benefits in any community; relevant, objective research needed
Knapp & Lech 1987	diagnostic signs and symptoms of pathological gambling and therapeutic responses	clinical epidemiological perspective; pathological gambling viewed as a widely prevalent mental disorder; specific research directions for future research suggested
Ladouceur 1996	pathological gambling in Canada	clinical epidemiological perspective; rates of frequent gambling and problem and pathological gambling in Canada are relatively high, compared with American data; for future research, recommends trend studies, research focusing on adolescents and primary school children, psychology of gambling and treatment of pathological gamblers; investment in gambling research and treatment required

Author/Year	Focus of Review	Perspective, Conclusions and Key Recommendations
Lamberton & Osei 1997	problem gambling in adults: epidemiological, aetiological, and treatment variables in development, maintenance and recovery	clinical epidemiological perspective; conclude that gambling results from interaction of affective, cognitive, behavioural and physiological variables; differential influence and interaction of aetiological factors requires further investigation
Lejoyeux et al. 2000	epidemiology of pathological gambling, from the perspective of behavioural dependence	clinical epidemiological perspective, with pathological gambling regarded as an example of a behavioural dependence, associated with depression and/or alcohol dependence; levels of sensation-seeking, disinhibition, and experience seeking higher in alcoholic or depressed patients with behavioural dependence
Lesieur 1989	review of methodological approaches in estimates of prevalence rates for pathological gambling from national and state surveys	social epidemiological surveys; standards lacking and methodological variation noted across surveys, resulting in bias in results; bio-psychosocial theoretical framework supported; for future research, suggests more systematic investigation of prevalence rates, especially among specific groups (youth), ethnographic studies among minorities, social-economic impact studies focusing on children, families and community services, and workplace studies
Murray 1993	identification and differential diagnosis of pathological gambling	clinical epidemiological perspective; more research required to answer key questions concerning differential diagnosis of pathological gambling and treatment implications; questions description of pathological gambling as an impulse control disorder; links with other psychiatric or medical disorders need to be explored, especially depression and obsessive-compulsive disorders
Petry & Armentano 1999	diagnosis and treatment information for mental health service providers	clinical epidemiological perspective; lack of standard treatment strategies and poor retention rates in treatment noted; screening instruments critiqued, especially use of clinical tools for population level inquiries; future research needed for meta-analysis of prevalence studies and related data
Saskatchewan Justice, D.o.L.S. 1993	social implications of gaming	social epidemiological perspective; reviews social and economic impacts; suggests implications of literature overview for Saskatchewan
Slavik 1993	main issues related to problem gambling	social and clinical epidemiological perspective; program and service implications suggested
Stinchfield & Winters 1996	youth gambling and problem gambling	social epidemiological perspective; youth gambling has remained fairly stable; a small minority are gambling more; gambling activity among youth may not be related to expansion of the gambling industry, but associated with a constellation of deviant behaviours mainly exhibited by young males; suggest need for longitudinal and monitoring studies, evaluation of school prevention programs and curricula, and research exploring the role of gambling in youth psychological development
Stirpe 1995	problem and compulsive gambling	social epidemiological perspective; training and education needs; public policy issues
Walker & Dickerson 1996	critical analysis of problem and pathological gambling prevalence data	social epidemiological perspective; critical appraisal indicates that, according to authors criteria, little published research meets criteria for defining prevalence rates; accuracy and efficiency of screening instruments is questionable; sampling bias is identified as a further source of error; thus rates are over-estimated; research needs to address these methodological deficiencies; questions to be explored included correlations between levels of personal expenditures, types of gambling, and related problems
Wildman 1997	exhaustive overview of literature on gambling between 1500 and 1996	historical and social/clinical epidemiological perspectives; a wide scope of literature identified, with most published since 1980 and 60% since 1990

APPENDIX C

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