# Gambling and Problem Gambling in North American Aboriginal People

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The purpose of this paper is to review what is known about gambling and problem gambling among Aboriginal peoples of North America. The focus is primarily on *current* gambling practices, and on *health and social issues* rather than economic ones. The first part of this paper provides a brief review of historical aspects of Aboriginal gambling. The second part reviews the current situation with specific reference to the meaning of gambling for Aboriginal people, current patterns of gambling behaviour, and the prevalence and causes of problem gambling within this population.

**Historical Aspects**

Gambling is a worldwide phenomenon found in virtually all societies. However, this is partly due to the pervasive influence of Western culture which has a long established tradition of gambling. Prior to European expansion, gambling was found in many, but not all societies (Binde, 2005a). It tended to absent or very uncommon in most parts of South America, south-east Africa, and Oceania[1]. In contrast, it tended to be quite prevalent in Europe, south-east Asia, west-central Africa, Central America, and North America (Cooper, 1941, 1949; Culin, 1907; Kroeber, 1948; Price, 1972, Pryor, 1976; Reefe, 1987). Cross-cultural comparisons have found gambling to be more common in societies that use money; with larger concentrations of people; that are more technically and economically developed; have socioeconomic stratification/inequality; have greater amounts of leisure time; do not have religious prohibitions against it; and experience a higher degree of environmental uncertainty due to their hunting/gathering lifestyle or involvement in frequent warfare (i.e., gambling perhaps providing a way of ritualizing/influencing unpredictable events) (Binde, 2005a; Pryor, 1976).

North American Aboriginals have a particularly extensive historical tradition of gambling. Virtually all tribes engaged in gambling (with the possible exception of a few in the far north), with evidence of this tradition dating back at least 1000 years before European contact (Binde, 2005a; Cooper, 1941; Culin, 1907). Culin (1907) documented that three main types of gambling games were played, with all three types often being present in the same tribe, and with a great deal of similarity in the object and method of play across tribes.

The first type involved *contests of physical skill* such as archery, spearing moving objects (e.g. 'hoop & pole'), foot races, wrestling, sliding sticks on snow/ ice for distance('snow snake'), and several different types of ball games including lacrosse. These games of physical skill were mostly played by men and were played either individually or in teams. It was fairly common for spectators to wager on the outcome.

The second type of game were *guessing games* requiring guessing which person, or container, or hand was concealing the hidden object (bone, stone, stick), or whether the person was holding an even or odd number of sticks, or which hand held the 'marked' object, or the relative position of the hidden objects. Usually a score was kept by means of stick or pebble counters, with the game ending when one side had won all the counters. The number of players on each side ranged from one to several, with rhythmic chanting/singing and drumming often accompanying team play. Spectators often wagered on the results.

The third group of games were *dice games* usually played with several 2 sided dice made of shells, pits, bone, stone, or wood that were either tossed or contained in a bowl/basket that was struck. Here again, scores were usually kept by means of counters that were exchanged, although sometimes the score was used for the purpose of moving markers in a parcheesi-like circuit game. Both men and women were avid players of guessing and dice games but they generally did not play together. However, occasionally men played against women and it was common for spectators to be of both

[1] McMillen & Donnelly (2008) point to evidence of gambling among Indigenous Australians prior to European contact.

genders. Typically, only men engaged in these games when they were used for ritualistic/ceremonial purposes, as described below.

Similar to other cultures, North American Aboriginals believed that supernatural forces influenced the outcomes of unpredictable events. Consequently, as in other cultures, gambling games were sometimes used to divine the future or to ascertain the appropriate course of action. It was also a common practice to do things to try and cultivate favour with these supernatural forces, and for gambling success to be interpreted as evidence of having this spiritual support (Binde, 2007; Culin, 1907). Somewhat unique to Aboriginal culture is the prominence of gambling in oral tradition and mythology (Culin, 1907; Gabriel, 1996). Common in these mythic stories is the existence of supernatural beings with great gambling skill. Also prevalent is the figure of a 'gambling hero' who is able to 'out-gamble' one of these superbeings or some enemy of the tribe through superior skill, cunning, or magic (Gabriel, 1996). Gambling was also believed to activate and promote the gathering of these supernatural spirits. Consequently, gambling was a frequent part of ceremonies associated with ensuring a good harvest or hunt, producing rain, or marking the changing of the seasons. For similar reasons, gambling games were engaged in to help cure sickness, expel demons, aid in fertility, and to facilitate passage to the afterlife after death (Culin, 1907; Salter, 1974, 1980).

Gambling games were also an important element of inter-tribal interaction. It provided a forum for nonviolent competition between villages, clans, and tribes (although injuries were not uncommon in some of the physical team competitions), as well as an opportunity for socializing and trade. It also *promoted* tribal interaction, as it was common practice for one tribe to challenge another to a contest and for the loser to rechallenge so as to regain their honour. The remarkable similarity of games across widely diverse and distant tribes provides indirect evidence of their importance in this regard (Belanger, 2006). Binde (2005a) argues that gambling's use for the purposes of inter-tribal competition is in fact the primary reason for gambling's prevalence and intensity in North American Aboriginal culture.

Gambling was also a popular recreational pastime. However, Aboriginal oral tradition contains the message that gambling outside of its ritualistic/ceremonial context was frowned upon and could lead to excess. Indeed, several of the situations that required the mythical 'gambling hero' to prevail were said to be brought about by the devastating gambling losses of the tribe. The potential dangers of gambling were also noted by early European observers (e.g., Jesuits), who reported many instances of 'reckless' gambling leading to loss of all possessions, as well as occasional assault, murder, and suicide. However, as pointed out by Belanger (2006), the high stakes gambling engaged in would naturally look more reckless to a European observer than to a member of a more communal society with extensive family support systems to fall back on, where there would be plenty of opportunities to win back what was lost, and where it was believed that supernatural rather than human forces were responsible for the outcome. The surprising lack of emotion with which Aboriginals typically accepted both their wins and losses (as noted by these same European observers) perhaps provides some evidence of this.

Finally, it is sometimes implied that another 'purpose' of Aboriginal gambling was reciprocal exchange and redistribution of wealth (e.g., Binde, 2005b; McGowan, Frank, Nixon, Grimshaw, 2001; Salter, 1979). There is no doubt that gambling commonly resulted in a useful redistribution of wealth and also had a leveling economic effect. However, it is doubtful that redistribution was actually a goal or a desired outcome in most situations, especially in the context of the bitter inter-tribal competitions that occurred.

**Current Situation**

European colonialism transformed both the nature and types of gambling available in North America. In contrast to the more spiritual/ceremonial/social orientation of traditional Aboriginal gambling, Western forms of gambling have predominantly a recreational and commercial orientation. The socio-cultural impact this fundamental change has had on Aboriginal people is somewhat unclear. The new Western forms of gambling (e.g., horse racing, card games) were readily adopted and engaged in. Indeed, as will be documented later in this paper, North American Aboriginals currently have high rates of participation in almost *all* forms of Western gambling. Furthermore, in the past 30 years many tribes have also become a major provider of Western-style gambling in commercial casinos and bingo halls (Belanger, 2006; Dixon & Moore, 2006). However, it is also very noteworthy that some of the highest prevalence rates of problem gambling have been reported in Aboriginal populations (Wardman, el-Guebaly, & Hodgins, 2001).

The socio-cultural impact of this change in the nature of gambling is an important issue meriting further scrutiny. More specifically, it would be instructive to know:

a) What is the current 'meaning' of gambling within Aboriginal people? For example, what do they consider 'gambling' to be; what are their 'motivations' for gambling; what are their current attitudes toward gambling; and how to these things differ from the non-Aboriginal population?
b) What is the current pattern of gambling behaviour among Aboriginal people and how is this different from other groups?
c) What is the nature, prevalence and causes of problem gambling in Aboriginal people?

The remainder of this paper reviews the research that speaks to these issues with a focus on recent research the first author (RW) has conducted. There are some important methodological considerations to be aware of when discussing this research. The first issue is that none of these studies contain a large representative sample of Aboriginal people. Rather, what is available are several large general population samples containing a small number of Aboriginals, which then have to be combined to produce a sufficient numbers for analysis. There are often methodological complications when combining studies from different time periods and with different response rates, administration format, etc. On the other hand, these studies have a high degree of methodological consistency in that they were all conducted by the first author in a relatively circumscribed time period (2004 – 2008) using the same question wordings and roughly the same procedures. Furthermore, the advantage of combining different studies is that it may level out methodological differences, potentially making the results more generalizable.

A second issue is that indigenous North American people comprise a diverse array of tribes with different historical traditions, different current socioeconomic situations, and different availabilities of gambling. Combining them into one group obscures potentially important inter-tribal differences. [2] That being said, these tribes do have similar gambling traditions and also share a common experience with European colonization and exposure to Western forms of gambling. Furthermore, as described below, the obtained results are fairly consistent between different geographic regions, implying that the similarities are stronger than the differences.

A final methodological issue is that these studies have been conducted by non-Aboriginal researchers using a Western 'lens' (McMillen, 2007; Steane, McMillen, & Togni, 1998). However, it is also the case that there is some cross-cultural validity to the constructs examined and there is also some research done by First Nations investigators that provides a validity check to these findings (i.e., Kainaakiiski Secretariat, 2005).

[2] The same point about within group diversity needs to be made about the comparison group of North American 'non-Aboriginal' populations used in these analyses.

## Current Meaning of Gambling

**Definition of Gambling.** Gambling is usually defined as "wagering money or something of material value on something with an uncertain outcome in the hope of winning money or something of material value." Nonetheless, despite this definition, people differ in what things they choose to characterize as gambling. Examining these differences is potentially instructive in understanding the 'meaning' of gambling to different groups.

In three separate studies, the first author provided a comprehensive list of 18 gambling-like activities and asked people to indicate whether they considered each activity to be 'gambling' or not. These activities included such things as buying insurance, paying money to enter tournaments or contests for cash prizes, taking physical or emotional risks, spending money on games at fairs to win prizes, stock market speculation, as well as more stereotypic gambling games such as electronic gambling machines (EGMs), casino table games and lottery tickets. The first study involved a telephone survey of a random sample of 2,088 Canadian adults in 2006/2007 that included 67 people who indicated the primary ethnic or cultural origin of their ancestors was Aboriginal, Métis, or Inuit[3]. The second study was an online survey of 10,755 North Americans (89% from United States) in 2007 that included 84 people who similarly identified their ancestry to be Aboriginal, Métis, or Inuit. Details of these studies are reported in Williams & Wood (in preparation) and Wood & Williams (2009). The third study was a door-to-door survey of a random sample of 120 adults from the Kanai (Blood) Reserve in southern Alberta in 2005[4] (Kainaakiiski Secretariat, 2005; Williams, Wynne, Nixon, Frank, 2005). This last study used a 'participatory action research' approach (Kemmis & McTaggart, 2000; Wynne, 2011) whereby the first author and his colleagues created research capacity in the First Nations community and the community conducted the survey themselves.

Data analysis revealed a high degree of consistency in the sentiments expressed among the three different Aboriginal samples as well as between the two different non-Aboriginal samples. A few small differences were observed, likely attributable to the somewhat different populations being sampled as well as the different survey administrations (phone, online, face-to-face). The samples were combined to level out these differences and to increase overall sample size. The results from the aggregated sample are presented in Figure 1, which shows the percentage of people who identify each activity as 'gambling' as a function of Aboriginal or non-Aboriginal status.

As can be seen, the Aboriginal and non-Aboriginal results are quite similar. Both groups see 'gambling' on a continuum, with some things being endorsed by less than 10% of people (e.g., buying insurance), some things having moderate endorsement (e.g., high risk stocks), and some things being endorsed by over 90% of people (e.g., EGMs). Furthermore, the rank order is almost identical, with current western/commercial forms of gambling being seen as the most 'gambling-like' by both Aboriginal and non-Aboriginal people. There are a few interesting and potentially important differences, however. A Chi-Square test found that Aboriginal people are significantly ($p < .01$) more likely to identify the following activities as gambling compared to non-Aboriginals[5]: buying raffle/fundraising tickets (25% versus 17%), playing games against other people for money (54% versus 41%), and spending money on games at fairs for prizes (68% versus 51%). It is quite plausible to

[3] A potential limitation of the data is that there are some theoretical problems in lumping Aboriginal, Métis, and Inuit together, as their cultural and historical experiences are somewhat different.

[4] The Kainai are part of the Blackfoot Nation. This particular reserve is the largest in Canada by land area.

[5] Because of the very large sample sizes in the present study, a significance level of $p < .01$ is used to denote 'significance' throughout this paper.

speculate that the identification of these activities as gambling may be related to the extensive Aboriginal cultural tradition of gambling in these types of contexts.

Traditional hand/stick games was an activity listed only in the Blood Tribe survey (as non-Aboriginals would be unfamiliar with these activities). A quite interesting finding was that there was almost an even split between people who believe these activities are gambling (50.5%) compared to people who do not consider it gambling (49.5%). Information arising from focus groups conducted as part of this study shed some light on this. What emerged from these groups was the fact that these types of traditional games were often just played for 'fun' and only *sometimes* played for money or material goods (the survey question did not specify whether money or goods were involved).[6] However, even if money/goods had been specified in the survey question, it seems clear that Aboriginal people still do not consider their traditional gambling games to fit well into current connotations of 'gambling'. As evidence of this, it was also found that only 20.5% of the sample endorsed the statement that 'gambling is a part of traditional Native cultural practices', and only 19.0% believed 'gambling is a part of traditional Native religious or spiritual practices' (Kainaakiiski Secretariat, 2005; Williams, Wynne, Nixon, Frank, 2005) (Note: there were no non-Aboriginals surveyed in the Blood Tribe survey). [7]

**Motivations for Gambling.** Investigating reported motives for gambling is another way of ascertaining gambling's 'meaning' for different groups of people. For example, it has been suggested that gambling for some Aboriginal people may be serving as a form of escape from their frustrating circumstances (e.g., McGowan & Nixon, 2004). Alternatively, that they may be trying to consciously or unconsciously emulate the 'gambling hero' in Aboriginal mythology, and consequently, that prestige may be a more important motivation compared to winning money or entertainment (McGowan et al., 2001; McGowan & Nixon, 2004; see also Nixon & Solowoniuk, 2009).

People's motivations for gambling were investigated in two different studies. The first was an online survey of 4,123 randomly selected adults in southeastern Ontario in 2006 that contained a sample of 197 individuals who identified their primary ancestry as Aboriginal, Métis, or Inuit (Williams et al., 2006). The second was a telephone and online sample of 9,532 adults in Alberta in 2008 that included a sample of 249 Aboriginal people (Williams, Belanger, Arthur, 2011). In each study, people were asked 'what is the main reason that you gamble' and they were provided with the following options: excitement/entertainment/fun; to win money; for escape or to distract yourself; to socialize; to support worthy causes; to feel good about yourself; or 'other'. These option choices were derived from a content analysis done on earlier studies that used an open-ended format for the same question. As before, the samples were combined to improve overall representativeness and sample size.

The results of this investigation are shown in Figure 2. As can be seen, there are again more similarities than differences between the Aboriginal versus non-Aboriginal groups. In both cases, the most popular reason for gambling was for excitement/entertainment/fun, with winning money and socializing being less popular second and third choices. Gambling to 'escape or distract oneself' was endorsed by less than 4% of both groups, and gambling to 'feel good about oneself' was endorsed by less than 1% of both groups. Chi-square tests found no significant differences in motivations between the groups. Consistent with different cultural traditions, there was a trend for Aboriginals to gamble more for entertainment/excitement/fun ($p$ = .02), and for non-Aboriginals to consider winning money to be a somewhat more important ($p$ = .03).

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[6] It also emerged from the focus groups that some of the associated elements (e.g., singing) were sometimes an equally or more important part of the competition/activity compared to the game itself or any betting that occurred.

[7] The fact that 'gambling' is an English rather than an Aboriginal word undoubtedly contributes to its association with Western forms and distinction from traditional Aboriginal gambling practices.

**Attitudes toward Gambling**. A final measure of gambling's meaning concerns people's attitudes toward it. More specifically, a) whether they consider it immoral, and b) whether they think the harms outweigh the benefits or vice versa. Six studies were used for this analysis. This includes the aforementioned telephone survey of 2,088 Canadian adults in 2006/2007 (Williams & Wood, in preparation); the online survey of 10,755 North Americans in 2007 (Wood & Williams, 2009); the southern Alberta Blood Tribe door-to-door survey of 120 Aboriginal people in 2005 (Kainaakiiski Secretariat, 2005); the online survey of 4,123 Ontario adults in 2006 (Williams et al, 2006); the telephone and online sample of 9,532 adult Albertan in 2008 (Williams, Belanger, & Arthur, 2011); as well as a telephone survey of 7,947 randomly selected adults from the British Columbia Lower Mainland conducted in 2004, 2005, and 2006 that contained 158 individuals of Aboriginal ancestry (Blue Thorn et al., 2007). The total combined sample consisted of 875 Aboriginals and 33,690 non-Aboriginals. Results are seen in Figure 3.

Similar to the previous analyses, the Aboriginal results are quite similar to the non-Aboriginal results. The majority of both groups consider that the harm of gambling outweighed the benefits. More specifically, 56% of non-Aboriginals and 53% of Aboriginals believed the harm either far or somewhat outweighed the benefits, compared to 18% of non-Aboriginals and 17% of Aboriginals who believed the benefits either far or somewhat outweighed the harm. There was no significant difference in Aboriginal versus non-Aboriginal opinion on this issue. The large majority of people also did not believe that gambling was morally wrong, although a significant portion were unsure of its morality. While the Aboriginal profile here is similar to the non-Aboriginal profile, there is a significantly greater percentage of Aboriginal people who believe that gambling is *not* morally wrong relative to non-Aboriginal people (43% versus 37%). Similarly, significantly fewer Aboriginal people are 'unsure' of gambling's morality compared to non-Aboriginal people (38% versus 45%). These results almost certainly speak to the much greater historical (and current) religious denunciation of gambling in Western compared to Aboriginal society.

**Gambling Behaviour**

Existing research suggests that overall prevalence rates of gambling may be roughly equivalent to rates among non-Aboriginal peoples, but that there are some differences in frequency of participation, expenditures, and game preference.

A large scale study of Alberta students in grades 5 to 12 (n = 1,961) found that 88% had gambled in the past year (Hewitt & Auger, 1995). A much smaller scale Alberta adolescent study also found a very high rate of past year gambling (Adebayo, 1998).

Volberg & Abbott (1997) found that the lifetime prevalence of gambling in adult Aboriginals in North Dakota in 1992 was equivalent to the general population, but their overall weekly frequency of gambling and gambling expenditures were higher (particularly for bingo and card games). Blankenship et al. (2009) found that Aboriginal people in New Mexico in 1998 had lower rates of past month sports betting, but higher rates of involvement in casino gambling, lottery play, EGMs, and instant win tickets. Wynne (2002) found a slightly lower rate of past year gambling participation (82%) compared to other ethnic/racial groups (87-89%) in Saskatchewan in 2001. A similar result was found by Smith & Wynne (2002) in Alberta in 2001 (84% in Aboriginals versus 83 – 96% in British, German, French, and Ukrainian). Patton et al., (2002) found that Aboriginals in Manitoba in 2001 had significantly higher rates of involvement in keno, bingo, EGMs, casinos, instant win tickets, and sports lotteries, but lower rates of purchasing raffle and funding raising tickets. They also spent significantly more money on most of these forms of gambling, compared to non-Aboriginal population (Patton et al., 2002). Volberg & Bernhard (2006) found Aboriginal people in New Mexico to have a somewhat higher rate of past year gambling compared to non-Aboriginals (73% versus 67%), with this increased prevalence being notably higher for

casino gambling and bingo. A proportionally higher rate of bingo play has also been reported for Aboriginal people in Alberta (Auger & Hewitt, 2000; Hewitt, 1994), Montana (Polzin et al., 1998), Ontario (Wynne & McCready, 2005).[8]

In a series of prevalence studies of individuals aged 15 and older in the North West Territories [9] (where Aboriginals comprise roughly 50% of the population) it was found that the past year prevalence of gambling among Aboriginals was significantly higher than non-Aboriginals in the 3 times periods studies (84% versus 75% in 1996, 80% versus 67% in 2002, 72% versus 68% in 2006) (Northwest Territories Health and Social Services, 2008). The intensity of Aboriginal involvement in gambling was also higher than non-Aboriginals in all three time periods as evidenced by engagement in more forms of gambling, 2 to 3 times higher expenditure, and roughly twice as many regular gamblers. Types of gambling engaged in were also different, with lottery tickets being the favorite form for non-Aboriginals in all years, whereas card games were the favorite form for Aboriginals in 1996, and bingo in 2002 and 2006. The largest and most consistent differences between Aboriginals and non-Aboriginals occurred for bingo (54% versus 14% in 1996; 64% versus 17% in 2002; 56% versus 9% in 2006) and lottery tickets (49% versus 80% in 1996; 42% versus 72% in 2002; 52% versus 74% in 2006).

Anctil & Chevalier (2008) conducted face-to-face interviews with a representative sample of 920 Cree (age 12+) living in the James Bay area of Quebec (Iiyiyiu Aschii) in 2003. Compared to the general Quebec adult (18+) population, Cree adults (18+) gambled proportional less (72%) in the past year than did inhabitants of Quebec (81%). Bingo and video lottery terminals (VLTs) were played at a significantly higher rate (45% versus 9% for bingo; 25% versus 8% for VLTs), and regular lotteries played as a significantly lower rate (39% versus 65%), but there were no differences for playing slot machines in casinos, cards, or instant lotteries. In terms of gender and age differences, women played bingo significantly more and people age 18-29 played VLTs more.

Five studies were used in the present analysis to assess gambling behaviour. These included all of the above-mentioned studies used to assess gambling attitudes, with the exception of the North American online survey. This latter survey was excluded as there was some over selection for gamblers, and the actual prevalence of gambling is of interest in the present analysis. Because this survey contains the only U.S. sample, excluding it also means that the results obtained herein reflect Canadian prevalence rates only. Another difference in the aggregated sample is that the sample size was larger in the Canadian 2006/2007 survey (Williams & Wood, in preparation) (i.e., $n$ = 8496, with 131 Aboriginal people), as everyone in this survey received the gambling participation questions, whereas only a random sample of 25% received the attitude and gambling definition questions. Thus, the total sample for the present analysis consisted of 859 Aboriginals and 29,363 non-Aboriginals.

The first finding of note is that past year participation in gambling was significantly higher in Aboriginal people (84.6%) compared to non-Aboriginal people (75.1%). Furthermore, as shown in Figure 4, Aboriginal people have greater involvement in all forms of gambling with the exception of lotteries and high risk stocks. As can be seen, the relative popularity of different games is roughly the same for Aboriginal versus non-Aboriginal people, with lotteries, raffles, and instant win tickets being most popular and Internet gambling, horse/dog race betting, and high risk stocks being the least popular. Only the Blood Tribe survey asked about traditional hand/stick games, with results indicating that only

[8] A study of 521 Inuit in Nunavik (northern Quebec) in 2004 found that the past year rate of gambling (60%) was lower than in the general Quebec population, but that weekly involvement (31%) and average reported yearly expenditure was significantly higher (Muckle et al., 2007). Past year involvement in bingo and card/dice games was significantly higher than the general Quebec population (36% versus 9% for bingo; 24% versus 11% for card/dice games), but there was no significant difference in instant lottery involvement.

[9] Aboriginal sample size was 340 in 1996, 567 in 2002, and 619 in 2006.

about 20% of people participated in these traditional games in the past year (i.e., 7th most popular out of the 12 forms of gambling).

Consistent with prior research, there were significant differences in game preference, with greater Aboriginal participation in bingo (23.2% versus 7.6%), electronic gambling machines (EGM) (40.0% versus 27.2%), casino table games (13.2% versus 9.1%), instant win tickets (52.9% versus 41.7%), and significantly lower participation in high risk stocks (3.5% versus 7.0%). Bingo's much greater popularity is likely attributable to the fact that historically, western churches (particularly the Roman Catholic and Anglican) spent considerable time with Aboriginal people in their efforts to convert them to Christianity. Because these same religions routinely used bingo for fund-raising, they also introduced large numbers of Aboriginal people to one of the few legal forms of gambling that existed prior to the modern era of gambling expansion. Contributing to this situation is the fact that bingo parlors were the first type of commercial gambling operations offered by tribal governments in the United States in the late 1970s. (Conflict over the legality of these expanding bingo operations was the precipitator for the Indian Gaming Regulation Act of 1988). The reason for the higher rate of EGM and casino table game play among Aboriginals is less clear, however. It is quite plausible this is also due to familiarity and exposure, as there are many tribes that now commercially provide these forms of gambling.

Not only is overall gambling participation higher, but Aboriginal gambling involvement is also more extensive. Figure 5 illustrates the statistically significantly higher number of gambling games engaged in by Aboriginal gamblers (*M* = 2.92) relative to non-Aboriginal gamblers (*M* = 2.40). Expenditures are also significantly higher. In Aboriginals, the self-reported mean, median, and modal 'typical month' gambling expenditures were $119.87, $41.63, $21.40 respectively, compared to $71.07, $19.00, and $5.00 for non-Aboriginals.

## Problem/Pathological Gambling

**Prevalence and Nature.** 'Problem gambling' is usually defined as "difficulties in limiting money and/or time spent on gambling which leads to significant adverse consequences for the gambler, others, or for the community" (Neal, Delfabbro, & O'Neil, 2005). 'Pathological gambling' is generally considered a more severe form of problem gambling.

A literature review by Wardman, el-Guebaly, & Hodgins in 2001 identified three studies (Hewitt & Auger, 1995; Peacock, Day, & Peacock, 1999a; Zitzow, 1996a) that provided an estimate of problem/pathological gambling prevalence among Aboriginal *adolescents*. Obtained rates were between 10% and 28%. However, these figures have to be considered tentative because of uncertainty concerning whether the assessment instruments used are valid for adolescents (i.e., the South Oaks Gambling Screen (SOGS, Lesieur & Bloom, 1987) and the SOGS-Revised for Adolescents (SOGS-RA, Winters, Stinchfield,& Fulkerson, 1993) (see Ladouceur et al., 2000)).

The Wardman et al. (2001) review also identified five studies that provided estimates for Aboriginal *adults* using the SOGS (Cozzetto & Larocque, 1996; Elia & Jacobs, 1993; Volberg & Abbott, 1997; Volberg & Precision Marketing, 1993; Zitzow, 1996b). It was found that Aboriginals had rates of problem gambling 2.2 to 5.0 times higher than non-Aboriginals and rates of pathological gambling that were 4.1 to 15.7 times higher. These studies mostly used nonrepresentative samples (e.g., alcohol treatment seekers, casino patrons). The only reasonably representative samples were that of a) Volberg & Abbott (1997) who estimated that the past year problem + pathological gambling prevalence rate was 12.4% among North Dakota Aboriginals in 1992, and b) Cozzetto & Larocque (1996) who obtained a 10-14% prevalence rate of pathological gambling on two North Dakota reservations. In the past few years there have been other studies that have also documented higher rates of problem/pathological gambling among Aboriginals. In 2000, Auger & Hewitt (2000) found that 24% of 500 adult Aboriginals in Alberta met SOGS criteria for problem or pathological gambling. In 2001,

Wynne (2002) found that 19.8% of the 91 Aboriginal adults surveyed in Saskatchewan were either CPGI moderate or severe problem gamblers. A comparable study in Alberta in 2001 found a combined rate of 14.5% among the 62 Aboriginals surveyed (Smith & Wynne, 2001). In a national study of Canadians in 2002, Statistics Canada (2003) found that 11.2% of the 217 *off-reserve* Aboriginal *gamblers* were moderate or severe problem gamblers as assessed by the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001). Anctil & Chevalier (2008) conducted face-to-face interviews with a representative sample of 920 Cree (age 12+) living in the James Bay area of Quebec (Iiyiyiu Aschii) in 2003 and found that 9.2% were CPGI moderate or severe problem gamblers (with a trend for the rates to be higher in women and ages 18-29). Westermeyer et al. (2005) found significantly higher lifetime rates of pathological gambling among U.S. Aboriginal veterans (10%) compared to U.S. Hispanic veterans.

While it seems clear that the overall rates of problem/pathological gambling are higher in Aboriginals, the actual rate in the general population of Aboriginal people has not been established. Thus, the same studies used to establish gambling prevalence described in the previous section were also used to estimate the Canadian prevalence rate of problem/pathological gambling in the present analysis. It is important to note that all the studies in the present analysis used the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) as opposed to the SOGS. The CPGI has some major advantages over other instruments, in that it was developed for general population surveys as opposed to clinical settings (Ferris & Wynne, 2001). It also does not have some of the false positive problems of the SOGS (Abbott & Volberg, 1996; Ferris & Wynne, 2001; Ladouceur et al., 2000). Of particular concern to Aboriginal prevalence research is the fact that the SOGS's heavy emphasis on financial problems results in significantly more people with low incomes being identified as problem gamblers compared to the CPGI (Young & Stevens, 2008). One disadvantage of the CPGI is that people who score in the lower boundary of problem gambling on the CPGI (i.e., a score of 3 or 4) sometimes do not correspond well to clinical judgments of 'problem gambling' and may represent a different type of false positive problem (Williams & Volberg, 2009).

Figure 6 displays the prevalence rates for each of the categories of gamblers. In the non-Aboriginal sample, 24.9% were Non-Gamblers; 61.8% Non-Problem Gamblers; 9.1% Low Risk Gamblers; 3.2% Moderate Problem Gamblers; and 1.0% were Severe Problem Gamblers (equivalent to 'pathological gamblers'). The rates in the Aboriginal sample were as follows: 15.4% Non-Gamblers; 55.7% Non-Problem Gamblers; 15.0% Low Risk Gamblers; 9.1% Moderate Problem Gamblers; and 4.8% Severe Problem Gamblers. Thus, the combined rate of problem plus pathological gambling in the Aboriginal sample (13.9%) was 3.3 times higher than the rate in the non-Aboriginal sample (4.2%), with this ratio being particularly high for severe problem gambling (4.8 times higher).

There are some important caveats to these findings. One issue concerns the fact that there were marked differences in the rates between the different sub-samples used: 48.8% (Blood Tribe in southern Alberta), 19.4% (Alberta); 11.8% (southeast Ontario); 11.4% (Canada); and 6.4% (British Columbia Lower Mainland). There are two reasons for this. The first is that real differences exist in prevalence rates between different Aboriginal groups. It is likely no coincidence that the highest rate is found in the on-reserve population in southern Alberta (Blood Tribe), while the lowest rate is found among urban Aboriginals in the British Columbia Lower Mainland. The second reason is due to differences in administration format. Problem/pathological gambling rates are lowest in the telephone interviews (BC Lower Mainland; Canada; Alberta telephone subsample), intermediate in the self-administered online surveys (southeast Ontario; Alberta online subsample), and highest in the door-to-door interviews administered by First Nation research assistants. Problem gambling rates obtained by telephone surveys underestimates the true rate due to the fact that a considerable percentage of Aboriginal people do not have residential telephone service, with evidence indicating these particular individuals to have significantly higher rates of poverty, unemployment, health problems, and substance

use (Ford, 1998; Pearson et al., 1994).[10] The self-administered surveys (used in Alberta and southeastern Ontario) are a format that tends to produce more valid results (i.e., higher rates) (Tourangeau & Yan, 2007). However, these surveys were also administered online, thus requiring access to and some fluency with a computer. Hence, it seems likely that these studies also produced underestimated rates of problem/pathological gambling. For Aboriginal people, it seems clear that door-to-door surveys will likely achieve the most representative sampling (i.e., Blood Tribe survey). Furthermore, there is good evidence that the face-to-face interview format (as used in the Blood survey) tends to produce more valid results compared to telephone interviews because of more honest/candid responding in the former (e.g., de Leeuw & van der Zouwen, 1988; Williams & Volberg, 2009). This may be particularly true when the interviewer is of the same ethnic/racial ancestry. However, it must be remembered that the previously mentioned Blood Tribe prevalence rate of 48.8% can really only be used as a rough estimate perhaps of the 'upper rate' of problem/pathological gambling among Aboriginal people, as this sample consists primarily of *on-reserve* individuals in just *one* tribe and location.

A final consideration concerns whether Aboriginal people consider the definition used to identify people as problem/pathological gamblers to be the same as they themselves would use. This was investigated in the Blood Tribe survey in couple of different ways. The first was by asking people "In your opinion, what are the main signs and symptoms of problem gambling". A total of 48% of the total responses were in the general category of *financial problems* (i.e., "spending all your money on gambling","poverty", "debt", "being broke", "selling things", "borrowing money to gamble"). The next most commonly category of sign/symptom (19% of all responses) concerned *loss of control* (i.e., "gambling all the time", "preoccupied with gambling", "can't stop gambling"). The third most common sign/symptom (14% of responses) concerned *family issues* (i.e., "never home", "no time for family", "marriage/family problems", "family violence", "kids left alone"). Reports of *mental health problems* constituted 12% of all responses (i.e., "stress", "anxiety", "depression", "suicide", "no self esteem", "anger", "irritable"). The remaining 7% of responses reflected a variety of other signs and symptoms ("alcohol abuse", "isolation", "physical illness", "fantasy replaces reality", "loss of family and moral values") (Kainaakiiski Secretariat, 2005). In general, these results indicate that the construct of 'problem/pathological gambling' has some cross-cultural validity, as these self-identified signs/symptoms of problem/pathological gambling are very consistent with the core features assessed by the standard assessment instruments (e.g., CPGI, SOGS). Further evidence of this is seen in the fact that one of the survey questions also asked people to estimate the percentage of adults on the Blood Reserve that they believed had a gambling problem. The average estimate of 56.6% (range of 0% to 100%) is very close to the 48.8% assessed by the CPGI (Kainaakiiski Secretariat, 2005).

In summary, considering the above evidence, as well as the previously mentioned problems with the lower boundaries of the CPGI (Williams & Volberg, 2009), our best estimate is that the true current overall average rate of problem/pathological gambling in Aboriginal people is probably somewhere between 10% and 20%, but that the range among different groups may vary from 7% - 45%.

**Reasons for Higher Rates of Problem/Pathological Gambling.** There have been many suggestions concerning why Aboriginal people have higher rates of problem/pathological gambling. These include poverty, higher exposure to gambling, cultural stress, greater acceptance of 'magical thinking', etc. (e.g., Raylu & Oei, 2004). However, in the absence of longitudinal research, there is no

[10] As evidence of this phenomenon more generally, a Swedish national survey found that the rates of probable pathological gambling were three times higher for people who could not be contacted by telephone, but who did complete the survey by mail (Rönnberg et al. 1999).

unambiguous evidence concerning the etiology of problem gambling in the general population, let alone First Nation people.[11] However, it is quite likely that many of the same variables known to be responsible for the development of other addictions (and psychopathology more generally) are also causally related to the development of problem gambling. The biopsychosocial model is the best explanatory model of addictions (Marlatt et al., 1988) and is also widely accepted as an appropriate model for problem/pathological gambling (Griffiths & Delfabbro, 2001). This model posits that there is a multitude of biological, psychological, social, and environmental factors that both contribute to and provide protection from the development of addictions and also that the pattern of contributing factors will often be different for different people (see Williams, West & Simpson, 2008 for a more detailed elucidation of this model for problem gambling).

The variables known to be causally related to addictions, and which are found in North American Aboriginal people are as follows:

- *Greater rates of gambling participation.* As mentioned earlier, North American indigenous people have a particularly strong cultural tradition and acceptance of gambling which is probably related to their greater overall participation and frequency of gambling. Unfortunately, however, it is well established that greater rates of participation in any potentially addictive product has a direct relationship to greater overall rates of problems associated with that activity (Lund, 2008; Rush, Gliksman, & Brook, 1986).
- *Conducive cultural beliefs.* Traditional Aboriginal cultural belief is that gambling outcomes are influenced by supernatural forces and that these supernatural forces can be influenced by human actions (Shanley, 2000). However, most modern forms of gambling (e.g., EGMS, bingo, lotteries, instant win tickets) have been specifically designed to have completely random outcomes and also to deceptively convey the impression that skill and choice may influence what happens. Furthermore, unlike social or traditional Aboriginal forms of gambling, the longer you play any of these modern forms, the more you are guaranteed to lose. Today, these types of beliefs are known as 'gambling fallacies', and they have a strong association with problematic gambling (Joukhador, Blaszczynski, & MacCallum, 2004; Joukhador, MacCallum, & Blaszczynski, 2003; Toneatto et al., 1997). Number and overall level of gambling fallacies were measured in most of the studies used in the present analysis. In all cases, the average number of fallacies was higher in the Aboriginal group relative to the non-Aboriginal group. As an example, in the Blood Tribe Survey, when asked 'why do some people win more than others', only 32.5% endorsed the statement 'it is just random chance' (Kainaakiiski Secretariat, 2005).
- *Disadvantageous social conditions.* Poverty, unemployment, lack of education, health problems, cultural stress/disenfranchisement, and societal marginalization/discrimination are inter-connected factors causally related to the high rates of mental health and drug and alcohol problems in most indigenous peoples (Chansonneuve, 2007; French, 2000; McMillen & Donnelly, 2008). As an illustrative example, despite the very high rate of problem gambling on the Blood Reserve, problem gambling was only identified as the 5$^{th}$ most pressing issue that needed to be dealt with after 'economic development & jobs', 'drug & alcohol problems', 'better education', and 'violence' (Kainaakiiski Secretariat, 2005). Having a mental health problem or abusing drugs or alcohol is known to strongly predispose people to additional addictions such as problem gambling (Petry, 2007; Petry, Stinson, & Grant, 2005; Rush et al., 2008). This constellation of addictions, mental health problems, and social problems then reinforce each other's existence, making it much more difficult to recover from any of them (Williams, West, & Simpson, 2008). These problems are also

[11] Major longitudinal studies underway in both Ontario (Williams et al., 2006) and Alberta (el Guebaly et al., 2008) are designed to shed light on this issue.

known to have perpetuating inter-generational impacts (Chansonneuve, 2007; Momper & Jackson, 2007; Peacock et al., 1999b).

- *Younger age.* The highest rate of problem gambling is almost always found in people younger than 30 (e.g., Shaffer & Hall, 2001). This was also the case in all of the studies used in the present analysis. Because the average age of First Nations people is significantly younger than non-Aboriginal people, this is another factor contributing to their higher rates.
- *Greater availability compared to non-Aboriginal populations?* Greater availability of a product is typically related to greater use of the product, which is then related to greater overall harm associated with the product. This has been established for alcohol, drugs, firearms, *and* gambling (Hepburn & Hemenway, 2004; Rush, Gliksman, & Brook, 1986; Williams, West & Simpson, 2008). While it is not clear whether Aboriginal people have greater overall availability of gambling opportunities compared to non-Aboriginals, it is plausible considering the large number of North American tribes that are actual providers of commercial gambling. [12]

**Summary and Conclusion**

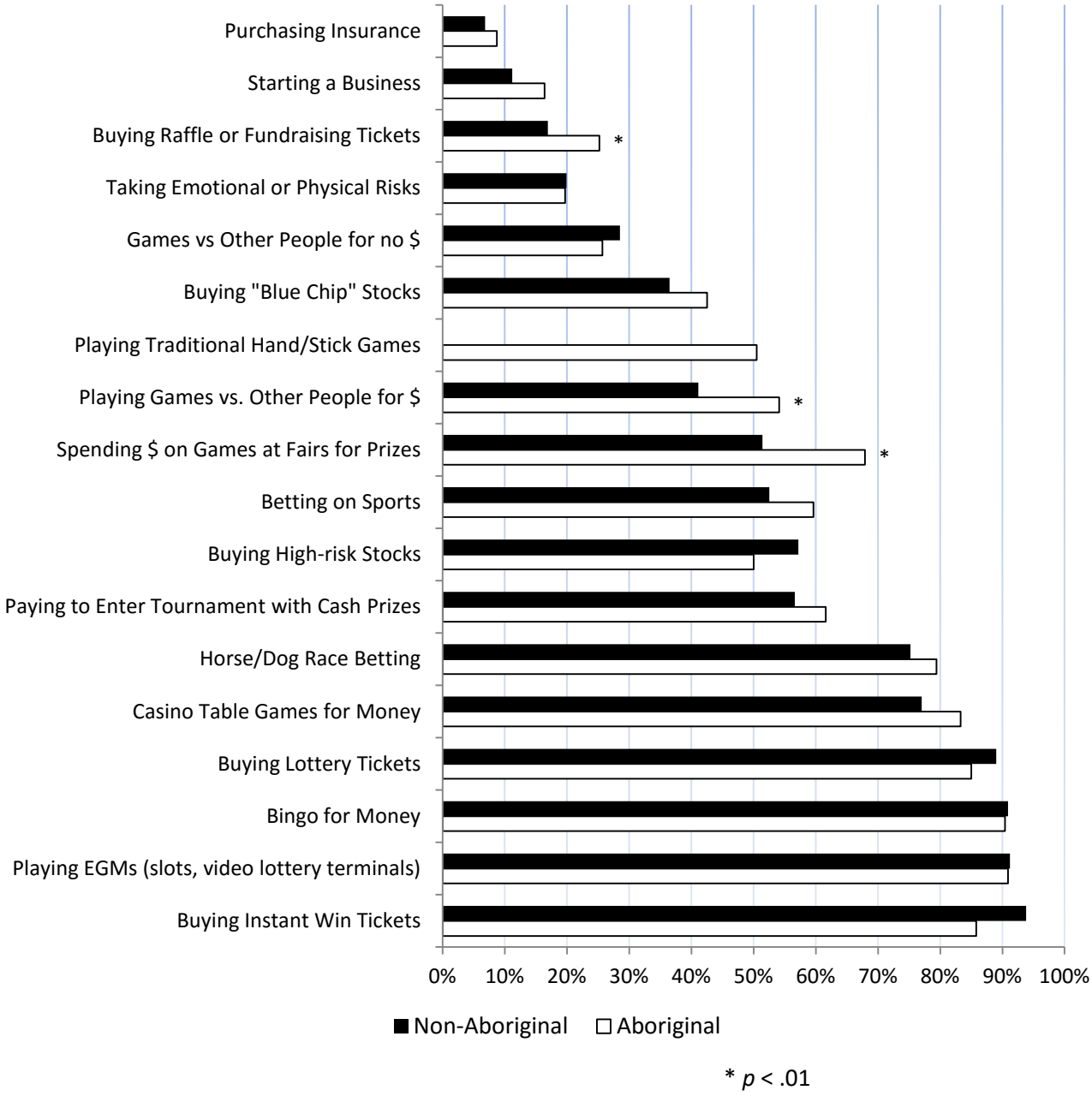
The purpose of this paper was to review what is known about gambling and problem gambling among Aboriginal peoples, with specific reference to the meaning of gambling, current patterns of gambling behaviour, and the nature, prevalence and causes of problem gambling within this population. *In general, it is evident that North American indigenous people have become strongly westernized in their understanding and motivations for gambling, as well as their pattern of play.* This is a sentiment that has been expressed before (e.g., Peacock et al., 1999b), and also appears to be true of Indigenous people in other parts of the world (Stevens & Young, 2009; Young et al., 2007). North American Aboriginal people tend to see gambling in the same way that non-Aboriginal people do. That is, as a commercial and recreational activity typified by forms such as EGMs, bingo, lottery tickets, casino table games, instant win tickets, and horse/dog racing, and something that is distinct from their historical practices. Their primary motivation for gambling is the same as it is for non-Aboriginal people, which is for excitement/entertainment/fun, with 'winning money' being a secondary concern. Attitudes are also very similar, with both Aboriginal and non-Aboriginal people strongly believing that the harms of gambling outweigh the benefits, and that gambling is not an immoral activity. Finally, the relative popularity of different gambling games is roughly the same for Aboriginal versus non-Aboriginal people, with lotteries, raffles, and instant win tickets tending to be the most popular and Internet gambling, horse/dog race betting, and high risk stocks being the least popular. Participation in traditional gambling games appears to be much less common.

While the similarities definitely outweigh the differences, there *do* exist some important differences. For one, Aboriginal people are significantly more likely to correctly recognize that things such as raffles and wagering money against other people in a social setting are forms of gambling. It is quite plausible this is because of their more extensive cultural tradition of gambling in these types of contexts. While gambling for the purposes of entertainment/excitement/fun tends to be a more important reason than winning money for all people who gamble, entertainment/fun has a tendency to be even more important for Aboriginal people compared to non-Aboriginal people. Here again, this speaks to different cultural traditions. Opinion about the morality of gambling is also different, with a significantly higher percentage of *non-Aboriginal* people believing it to be immoral, which almost certainly due to its greater religious denunciation in Western society. There are also significant

[12] A study currently underway in Alberta (Williams, Belanger, & Arthur (2011)) is specifically comparing the prevalence of gambling and problem gambling in Aboriginal communities that host casinos versus communities that do not.

differences in game preference, with greater Aboriginal participation in bingo, EGMs, casino table games, instant win tickets, and significantly lower participation in high risk stocks. The higher rate of bingo, EGM, and casino table game play may well be due to greater familiarity and exposure, as well the influence of western churches (in the case of bingo). Overall gambling participation is also significantly higher, as is the number of games engaged in and the amount of money spent. While this is likely partly due to a greater cultural tradition of gambling, it also points the area where there is an unambiguous difference between Aboriginal and non-Aboriginal people: rates of problem and pathological gambling. The best estimate is that the current overall average rate of problem/pathological gambling is in the 10% - 20% range, and is at least 4 times higher than found in non-Aboriginal populations. This is attributable to having many more risk factors for problem gambling, such as greater participation in gambling, different beliefs about the forces and factors influencing the outcome of gambling, younger average age, and a range of disadvantageous social conditions (e.g., poverty, unemployment, poor education, cultural stress, etc.) that are conducive to the development of addictive behaviour. Rectifying these disadvantageous social conditions is essential in helping to ameliorate these high problem/pathological gambling rates (Chansonneuve, 2007; Costello & Compton, 2003; McMillen & Donnelly, 2008; Stevens & Young, 2009).

Figure 1. Percentage of People Indicating whether they consider the Activity to be 'Gambling' as a Function of Aboriginal (*n* = 271) versus non-Aboriginal (*n* = 12,692) Status.




Note: Results for traditional hand/stick games is based only on results from the Blood Tribe Survey (n = 120)

Figure 2. Main Reason for Gambling as a Function of Aboriginal (*n* = 446) versus non-Aboriginal (*n* = 13,209) Status.

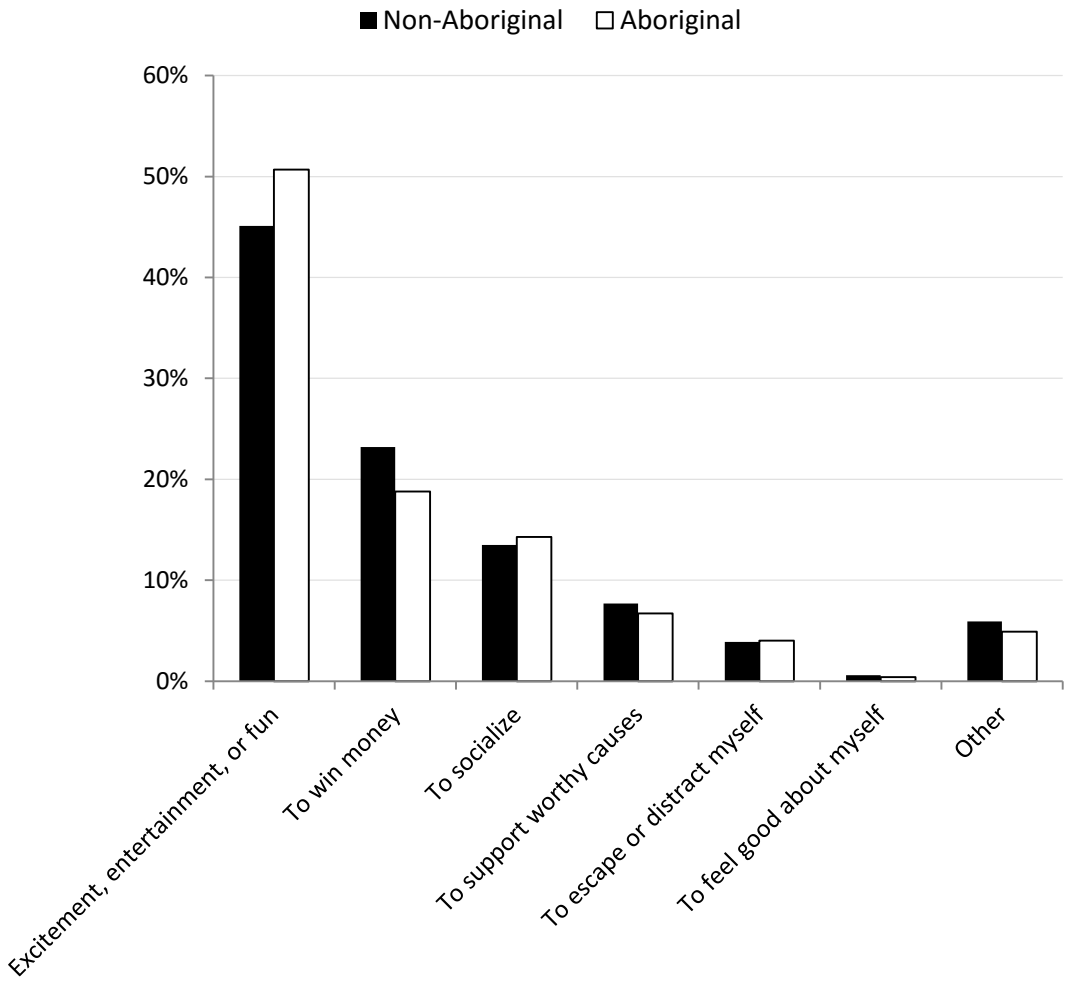
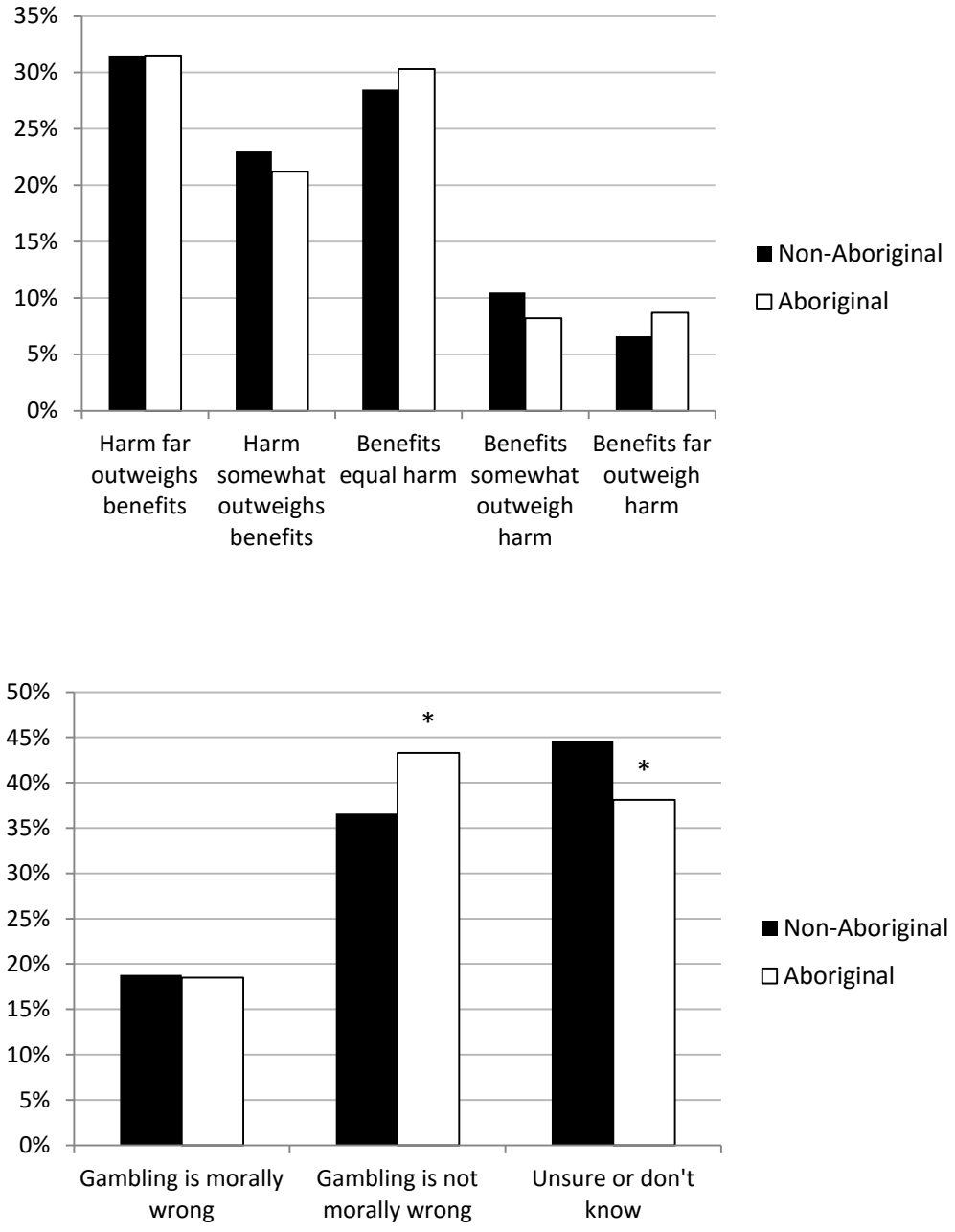
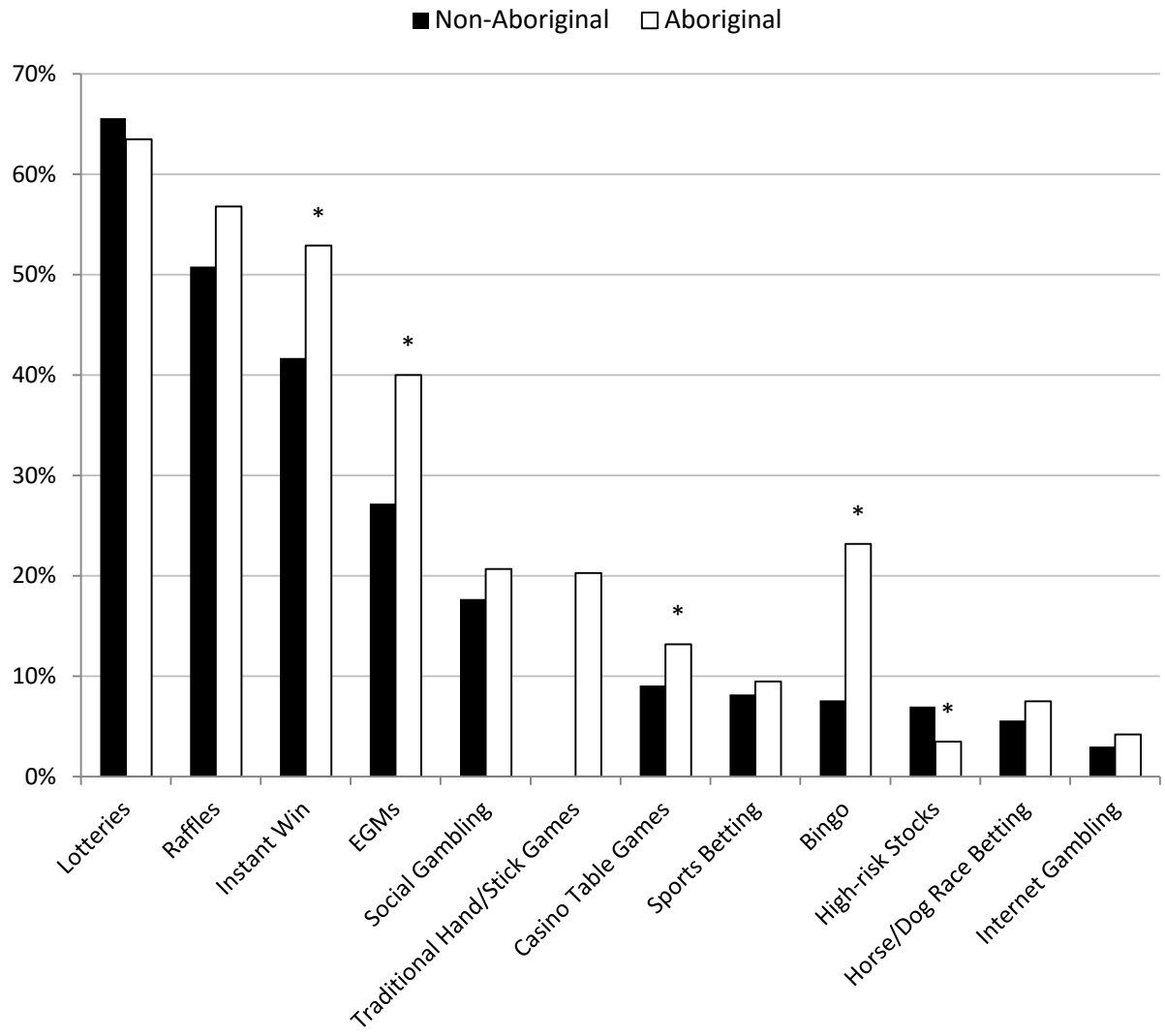


Figure 3. Current Attitudes toward Gambling as a Function of Aboriginal (*n* = 875) versus non-Aboriginal (*n* = 33,690) Status.




* $p < .01$

Figure 4. Past Year Participation in Different forms of Gambling as a Function of Aboriginal (*n* = 859) versus non-Aboriginal (*n* = 29,363) Status




* $p < .01$.

Note: Prevalence for traditional hand/stick games is based only on results from the Blood Tribe Survey (n = 120)

Figure 5. Number of Different forms of Gambling Engaged in by Gamblers as a Function of Aboriginal (*n* = 859) versus non-Aboriginal (*n* = 29,363) Status

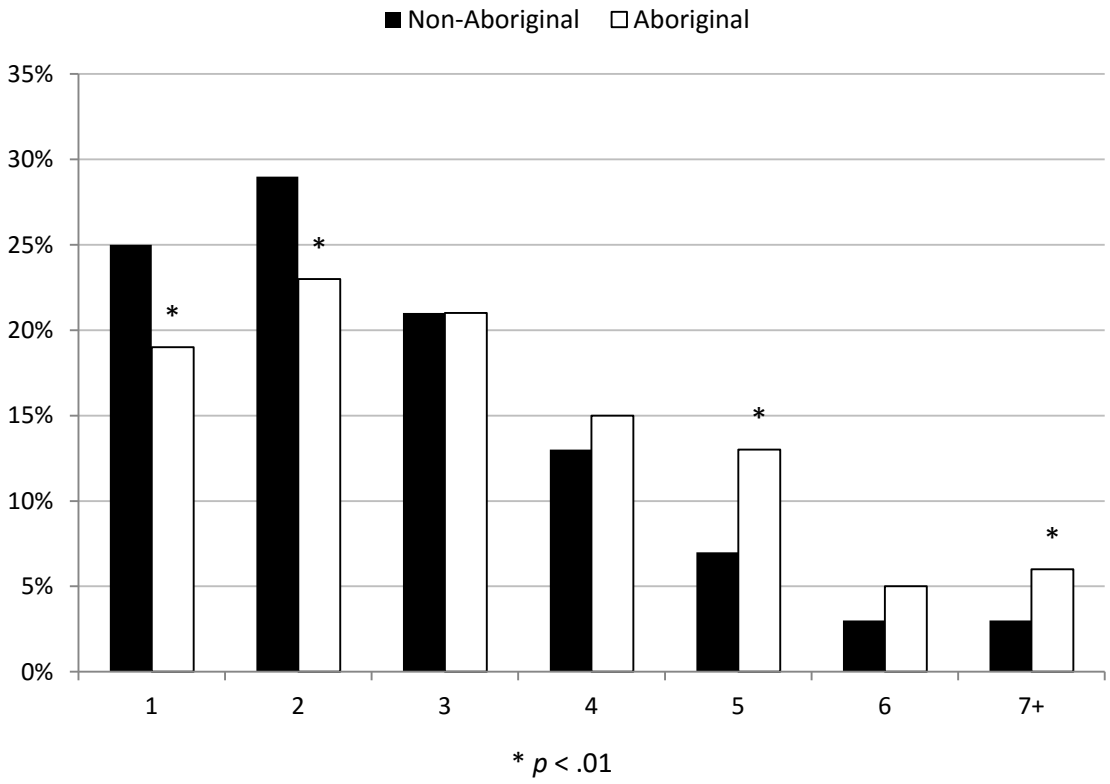
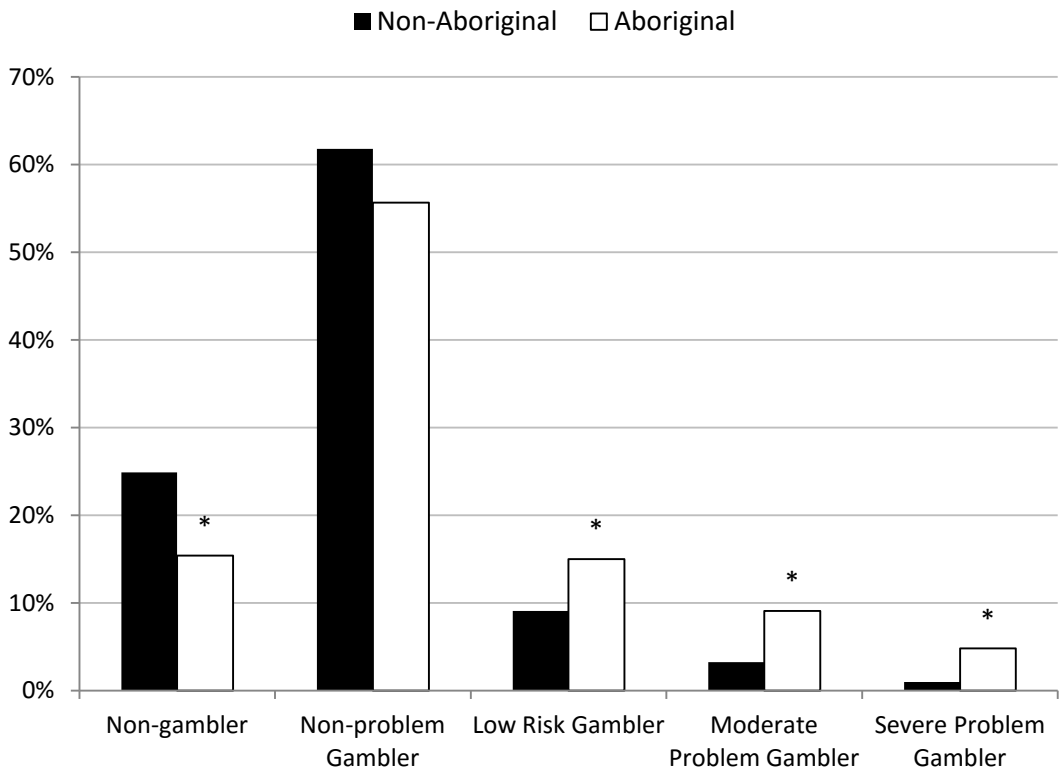


Figure 6. Past Year Gambling Categorization on the Canadian Problem Gambling Index as a Function of Aboriginal (*n* = 859) versus non-Aboriginal (*n* = 29,363) Status




* $p < .01$

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