Cree Health Survey 2003

Canadian Community Health Survey *Cycle 2.1*

Iiyiyiu Aschii

Lifestyles related to alcohol consumption, drugs and gambling

June 2008

Conseil Cri de la santé et des services sociaux de la Baie James
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Cree Board of Health and Social Services of James Bay

Institut national de santé publique Québec

Canadian Community Health Survey, Cycle 2.1
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FOREWORD

This publication presents the findings of a health survey carried out in 2003 among households of Iiyiyiu Aschii[1]. A similar survey had been undertaken in the region by Santé Québec in 1991 (Santé Québec, 1994). Ten years later, the Public Health Department of the Cree Board of Health and Social Services of James Bay (CBHSSJB) urgently required a new picture of its population's state of health. The purpose of the 2003 survey was to gather up-to-date information on the region's main health problems and related factors in order to improve the planning, administration, and evaluation of various social and health programs.

According to the 2001 Public Health Act (*Loi sur la santé publique*), Quebec's public health departments must periodically assess the health of their respective populations. Since 2000-2001, the province's socio-sanitary regions – with the exception of Iiyiyiu Aschii and Nunavik – have participated in the Canadian Community Health Survey (CCHS) conducted by Statistics Canada.

In 2003 the Public Health Department of Iiyiyiu Aschii decided to take part in this vast project, which was already under way across Canada, and initiated a CCHS-type survey on its own territory (Statistics Canada, 2003). Because the CBHSSJB Public Health Department is connected to the network of Quebec's Department of Health and Social Services (*Ministère de la santé et des services sociaux*, MSSS), it was able to enlist the expert assistance of the *Institut national de santé publique du Québec* (INSPQ) in coordinating the analysis of the results. Professionals drawn from Quebec's health care community and the Public Health Department of Iiyiyiu Aschii, as well as academic experts in the field, were given the task of drafting the publications. The analyses include results on various aspects of health affecting residents of Iiyiyiu Aschii and they also provide comparisons with 1991 data from the region and 2003 data from the rest of Quebec (Santé Québec, 1994; Statistics Canada, 2003). These analyses are relevant for everyone concerned with the health of Iiyiyiu Aschii residents (professionals, administrators, planners, and researchers).

Ten publications were produced as part of this survey:

- *Demographic and social characteristics of the population living in Iiyiyiu Aschii*
- *Food habits, physical activity and body weight*
- *Cigarette consumption*
- *Lifestyles related to alcohol consumption, drugs and gambling*
- *Preventive practices and changes for improving health*
- *Health status, life expectancy and limitation of activities*
- *Injuries and transportation safety*
- *Mental health*
- *Use and perceptions of health services*
- *Survey methods*

A final publication, *Survey highlights*, offers a rapid overall view of the health study's results.

Many people contributed to this study at every stage in its progress. Particularly deserving of mention are the roles played by Jill Elaine Torrie, Director of Specialized Services, and Yv Bonnier-Viger, Director of Public Health of the Cree Board, throughout the planning phase and during operations on the field. Above all, we wish to thank the Cree population for its remarkable level of collaboration.

METHODOLOGY OF THE CANADIAN COMMUNITY HEALTH SURVEY (CCHS), CYCLE 2.1, IIYIYIU ASCHII, 2003

The survey was conducted during the summer of 2003 using a representative sample of residents aged 12 and older from the nine communities in Iiyiyiu Aschii: Chisasibi, Eastmain, Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, Waswanipi, Wemindji, and Whapmagoostui.

The original 1,000-person sample was randomly selected from residents of private households in the region. The final sample thus included both Aboriginal and non-Aboriginal residents. Most interviews (85%) were conducted in person during the summer of 2003 using computer-assisted interview software. Individuals who were absent during the first data collection period were interviewed by telephone at the end of autumn 2003.

There was a high participation rate. Of the 646 households selected, 581 agreed to participate in the survey (90%). Within these households, 920 of the 1,074 eligible individuals (86%) agreed to answer the questionnaire, for a combined response rate of 78%. The survey results were then adjusted based on the number of people aged 12 and older from Iiyiyiu Aschii living in

[1] Please note that the socio-sanitary region for the James Bay Cree Territory is referred to by its Cree name, Iiyiyiu Aschii, throughout this text.

private households, excluding residents of institutions such as seniors' homes. This survey does not include children under the age of 12. All data presented in this document have been weighted to allow inferences to be made for the population as a whole.

However, it must be noted that the data are from a sample and are therefore subject to a sampling error, which must be taken into account. A coefficient of variation (CV) was used to quantify how precise the estimates were, and Statistics Canada's cut-off points were used to describe the precision of these estimates. An asterisk (*) next to an estimate indicates high sampling variability (CV between 16.6% and 33.3%). Estimates with unacceptable precision rates (CV > 33.3%) or based on fewer than ten respondents have been suppressed and replaced by the letter "U."

Statistical analyses of comparisons among the sexes, age groups and sub-regions were conducted at a threshold of $\alpha = 0.05$. Comparisons with the rest of Quebec were standardized to take into account the differences in age structure between the population of Iiyiyiu Aschii and that of the rest of Quebec, and were conducted at a threshold of $\alpha = 0.01$ (Statistics Canada, 2003).

When the questions asked were similar, the results were compared to those of a 1991 survey carried out in the region (Santé Québec, 1994). In light of differences in the samples between the two surveys, these comparisons are only made among Cree aged 15 and older and have been standardized to compensate for changes in the population's age structure. Only unadjusted rates are presented in the text in order to avoid possible confusion with the standardized rates.

More details on data processing are given in the above-mentioned *Survey methods* report.

INTRODUCTION

Lifestyles and behaviour patterns that affect an individual's wellbeing are major factors in the state of a population's health (INSPQ & MSSS, 2006). This subject is of interest to workers in the public health network precisely because it may be possible to improve a population's quality of life by changing some of those factors (Santé Québec, 1994). Certain lifestyle habits constitute important risk factors for most chronic diseases and severe handicaps.

Each of the first three sections in the following text deals with a specific module of the Canadian Community Health Survey (CCHS) Cycle 2.1 questionnaire (Statistics Canada, 2003). The first presents a profile of alcohol consumption among residents of Iiyiyiu Aschii; the second concerns the use of illegal drugs; the third deals with gambling patterns. In a fourth and final section, these three lifestyle habits are briefly examined to find out how they are related to one another.

1. ALCOHOL CONSUMPTION

Alcohol takes on different meanings and functions according to the societies involved, historical periods, and stages of life; its consumption is thus largely a cultural phenomenon. The relationship people have with this substance varies from one group to the other and, by the same token, influences how they consume alcohol. While it is generally synonymous with socialization and pleasure, alcohol remains a toxic substance which carries certain health risks, since it can have a negative impact on almost every organ and system of the human body (Babor et al., 2003). In fact it has been shown that alcohol consumption increases the probability of acquiring some sixty diseases (Room et al., 2005), notably several types of cancer and cirrhosis of the liver, not to mention the risks to the health of newborn children associated with alcohol consumption by pregnant or breastfeeding women (Tait, 2003; Saggers & Gray, 1998). Furthermore, alcohol increases the risk of accidents and exacerbates social problems (Babor et al., 2003; Chevalier & Lemoine, 2001; Santé Québec, 1994).

Alcohol thus plays a major role in disease and mortality in general (Babor et al., 2003). Alcohol holds the third place among health risk factors in developed countries, behind tobacco and hypertension (WHO, 2002). Nevertheless, the relation which exists between alcohol consumption and its health consequences are complex and many-dimensioned (Room et al., 2005). Not only is the quantity consumed important for an understanding of the social and health problems associated with alcohol,

but the drinking pattern must also be considered (Babor et al., 2003).

In this connection, the scientific literature teaches us that alcohol consumption has been particularly devastating for many native communities in Canada and elsewhere (Brady, 2000; Saggers & Gray, 1998). The results of a Canadian survey reveal that in 1996, when natives constituted approximately 3.7% of Canada's population, they accounted for 17% of hospital admittances related to alcohol (Scott, 1996). All the villages in Iiyiyiu Aschii are theoretically "dry", which is to say that the sale and consumption of alcohol are forbidden by Band council ordinances (Clarkson, 1995). The community of Whapmagoostui is a special case because it borders on Kuujurapik, an Inuit community with two bars. Data obtained by the Cree CCHS (2003), however, show that alcohol consumption remains high throughout the region.

METHODOLOGICAL ASPECTS

Alcohol consumption is described here in terms of indicators which are generally employed in population surveys: types of drinkers, frequency of consumption, and frequency of high consumption.

Three types of drinkers have been defined on the basis of the CCHS questionnaire module dealing with alcohol consumption. "Current drinkers" are defined as persons who regularly or occasionally[2] had a glass[3] of alcohol during the twelve months preceding the survey. "Former drinkers" were those who had once consumed alcohol but did not do so in the previous twelve months. Finally, persons who have "never consumed" are those who report that they have never partaken of any alcoholic beverage. It must be pointed out, however, that when it comes to alcohol consumption certain biases infiltrate survey data and tend to lower the estimate of consumption among the general population. The work of Sobell and Sobell (2003) informs us that drinkers, especially heavy drinkers, tend to underestimate their consumption; also, the rate of non-response for questions dealing with this topic is generally high for drinkers.

Data on the frequency of consumption provide important information about the current drinkers' consumption profiles. They determine how often current drinkers consumed alcoholic beverages during the previous twelve months ("never", "less than once a month", "one to three times a month", "once a week or more"). In addition to this information, the CCHS gathered data on the frequency of high consumption among current drinkers. The survey has consequently made it possible to appreciate how often, during the year prior to the survey, an individual consumed five drinks or more on a single occasion. This measure, developed by Room (1990), is now used regularly to identify heavy consumers of alcohol.

The CCHS questions relative to alcohol consumption are essentially identical to those asked in 1991 by the Santé Québec Health Survey of the James Bay Cree (Santé Québec, 1994). Although the surveys differed somewhat as to the order of the questions and the method by which they were conducted (face-to-face vs. self-administered), it is possible to compare their results. Moreover, some of this subsequently obtained information can be compared with data obtained for the rest of Quebec by CCHS 2003 (Statistics Canada, 2003).

Inevitably, any study of behaviour related to alcohol consumption, drugs, and gambling carries a certain bias related to questions of social acceptability. Respondents may tend to refuse to answer questions about these lifestyle habits, or will underestimate how often some behaviour is repeated in order to supply the answer which is expected, or that which is considered desirable by society and by the respondent's peers. The non-response rate can be relatively high for these questions. In the present case, partial non-responses rates stood generally at around 5% and rarely exceeded 10% for questions about the consumption of alcohol and drugs; they could be as high as 20%, however, when it came to the frequency of drug use. Men tended to respond less often than women when the question was about the age at which they began to consume alcohol. The partial non-response rate for questions related to gambling was under 10%. Comparisons with other surveys (Muckle at al., 2007; Adlaf et al., 2005a) were undertaken only to provide a broader perspective. Any interpretation must therefore be approached with the utmost caution in view of the differences between the methodologies applied.

RESULTS

Types of drinkers

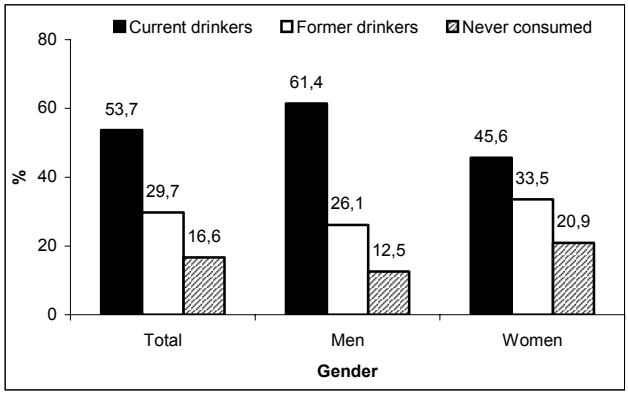
Slightly more than half (54%) of Iiyiyiu Aschii residents 12 years of age or older reported having consumed alcohol during the year preceding the survey (Figure 1, and Table A1 in Appendix). There is a significant difference in this proportion according to sex: a majority of men are in the class of "current drinkers" (61% vs. 46% for women), while women are more likely to be

[2] In the Canadian Community Health Survey, Cycle 2.1 2003, "regular consumption" means the consumption of at least one alcoholic beverage per month, while "occasional consumption" means the consumption of an alcoholic beverage less than once per month.

[3] In the questionnaire of the Canadian Community Health Survey, Cycle 2.1 2003, a glass is equivalent to one bottle or can of beer or one glass of draft beer, or to a glass of wine or cooler, or to a cocktail containing 1½ ounce of alcoholic beverage.

among the "former drinkers" (34% vs. 26% for men) or among those who have "never consumed" (21% vs. 13% for men).

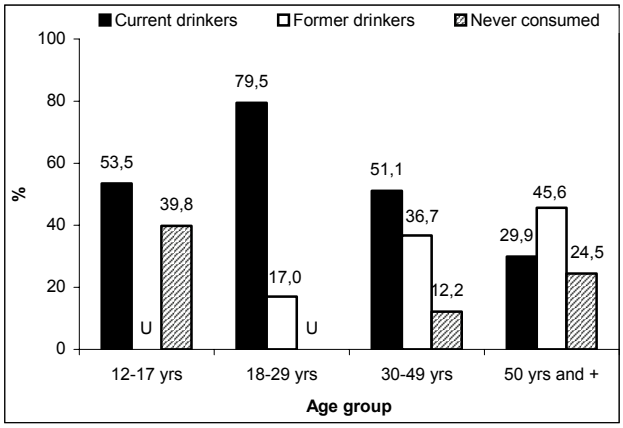
Figure 1
Types of drinkers according to gender (%), population aged 12 and over, Iiyiyiu Aschii, 2003.



Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Furthermore, the greatest proportion of current drinkers is found among young adults 18 to 29 years old (80%). This group differs significantly from the younger cohort (53% for 12- to 17-year-olds) and from their elders (51% for 30- to 49-year-olds) (Figure 2, and Table A1 in Appendix). While the 18- to 29-year contingent harbours the highest proportion of current drinkers, it is important to note that 53% of the 12- to 17-year-olds will have consumed alcohol regularly or occasionally during the twelve months preceding the survey — in other words before having reached the age of majority. On the other hand, it must be pointed out that the 12- to 17-year group contains the highest proportion of individuals who have never consumed alcohol (40%). As for those 50 years of age and older, the greatest number are former drinkers (46%); one quarter of people from this age group (25%), in fact, have never had an alcoholic drink.

Figure 2
Types of drinkers according to age (%), population aged 12 and over, Iiyiyiu Aschii, 2003.



U Unpublished data (CV > 33.3% or fewer than 10 respondents).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

When the youngest respondents (12 to 19 years) who had consumed alcohol were asked at what age they had started to drink, 65% said they had started before the age of 14 (more precisely, between 8 and 14 years of age), and the remainder started between the ages of 15 and 19. In this case the girls were present in the greatest numbers: 71% claim to have started drinking before the age of 14, while 59% of the boys make the same claim (data not shown). However, the non-response rate for this question suggests that any interpretation must be advanced with prudence. In fact boys tend to provide answers less often than girls about the age at which they began drinking. The non-response rate for this question was 22% for boys and 5% for girls.

While the difference concerning the age at which boys and girls started drinking is not significant within Iiyiyiu Aschii, girls in this region are significantly different from girls in the rest of Quebec. Data collected for CCHS 2003 leads us to believe that the former begin to drink alcohol at an early age — between 8 and 14 years — in greater numbers than the latter (71% of girls in Iiyiyiu Aschii vs. 49% elsewhere in Quebec). On the other hand, girls in the rest of Quebec begin their alcohol consumption between 15 and 19 years of age in greater numbers (51% vs. 30% for girls in Iiyiyiu Aschii — data not shown).

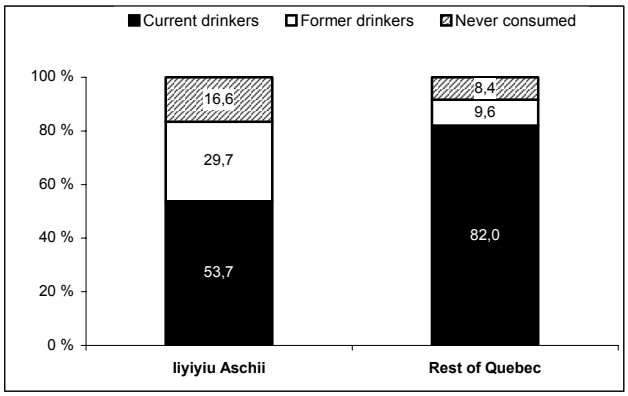
Recent Canadian studies lead us to believe that educational level affects alcohol consumption, since persons with higher levels of schooling consumed alcohol in greater numbers over the previous twelve months (Adlaf et al., 2005a). No similar trend was observed among the Cree of Iiyiyiu Aschii, however,

where the proportion of drinkers does not vary according to educational level[4] (Table A1, Appendix). On the other hand, analysis of alcohol consumption as a function of matrimonial status shows that separated, divorced, or widowed persons include a heavy proportion of current drinkers (64%); this is significantly different not only from people who are in traditional or common-law marriages, but also from those who have never been married. Married people, those in common-law unions, and people who have never been married are evenly divided between current and former drinkers (Table A1, Appendix).

As for locality, it must be pointed out that the proportions of current drinkers, former drinkers, and persons who have never consumed alcohol do not vary according to sub-region[5]. Whether respondents live on the coast or inland, the proportions are virtually the same (Table A1, Appendix). A similar trend is apparent with more refined geographic divisions based on community sizes[6]. Mistissini is significantly different from the other communities, however, due to the high proportion of former drinkers found there: 41% of the people in this community are former drinkers, compared to approximately 30% for all the other groups of communities. The proportion of current drinkers is accordingly lower than in the other communities (Table A1, Appendix).

When the results on types of drinkers obtained in this study are compared with those in other parts of Quebec, one notices the same trend prevailing in the rest of the province: men and young persons continue to be proportionally more present among the current drinkers. Figure 3 makes it clear, however, that the proportion of current drinkers is significantly higher in the rest of Quebec than in Iiyiyiu Aschii: eight out of ten residents are current drinkers in other parts of Quebec, compared with five residents out of ten in the Cree area. Also, twice as many individuals have never consumed alcohol in Iiyiyiu Aschii (17%) as in the rest of Quebec (8%).

Figure 3
Types of drinker (%), population aged 12 and over, Iiyiyiu Aschii and rest of Quebec, 2003



Source: CCHS 2.1 - Iiyiyiu Aschii and rest of Quebec, 2003.

The outstanding fact about residents of Iiyiyiu Aschii is that the proportion of former drinkers is three times what it is in the rest of Quebec (Figure 3). In Iiyiyiu Aschii this proportion of former drinkers considerably expands the number of people who have ever consumed alcohol[7] (83%). Despite this, the proportion of current drinkers combined with that of former drinkers remains higher (92%) in the rest of Quebec.

The distribution of current drinkers and former drinkers according to age in the two areas shows that the proportion of current drinkers is higher among young people. In fact the 18- to 29-year-olds have the highest proportion of current drinkers (80% in Iiyiyiu Aschii vs. 92% elsewhere in Quebec). These proportions diminish with age, but more markedly so in Iiyiyiu Aschii. The 30-to-49 group and the over-50 group continue to have much greater proportions of current drinkers in the rest of the province (87% and 79%) than in Iiyiyiu Aschii (51% and 29%)[8].

Frequency of alcohol consumption

Among the 54% of Iiyiyiu Aschii residents who said they had consumed alcohol in the course of the previous year, 34% claimed they drank "once a week or more", 42% "one to three times a month", and 24% "less than once a month." There is little variation in the frequency of

[4] Education level is defined according to number of years of schooling. The "lower" education level means less than 7 years (less than a secondary 1). The "middle" education level means 7 to 11 years (completed some or all of high school). The "higher" education level means 12 years or more (at least some college or other postsecondary education).

[5] The region of Iiyiyiu Aschii has been divided in two sub-regions for comparison. The coastal sub-region includes the villages of Chisasibi, Wemindji, Eastmain, Waskaganish and Whapmagoostui while the inland sub-region includes Nemiscau, Mistissini, Oujé-Bougoumou and Waswanipi.

[6] Four groups of communities were defined on the basis of each village's population at the time of the survey: (1) Chisasibi (more than 3,000 inhabitants); (2) Mistissini (2,000 to 3,000 inhabitants); (3) medium-sized communities (1,000 to 2,000 inhabitants), i.e. Waswanipi, Waskaganish, and Wemindji; (4) smaller communities (fewer than 1,000 inhabitants), i.e. Whapmagoostui, Eastmain, Nemiscau and Oujé-Bougoumou.

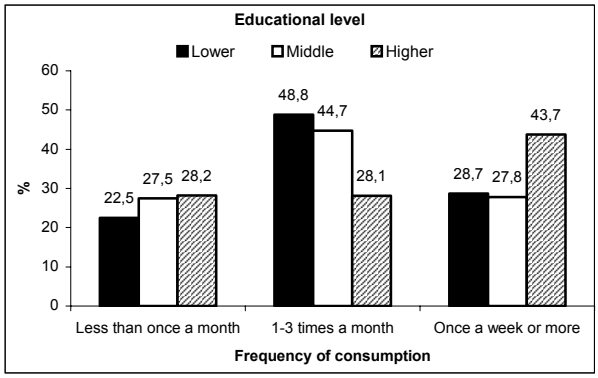
[7] The proportions of persons who have ever consumed alcohol include both current and former drinkers.

[8] The differences observed between Iiyiyiu Aschii and the rest of Quebec are significant for all age groups except the 12- to 17-year-olds.

consumption as a function of respondents' sex and age. Women generally consume less often than men, while adults (18-29 and 30-49 years) are likely to consume more often than other age groups (Table A2, Appendix).

Individuals with a higher level of education, however, differ from those of lower of intermediate educational levels when it comes to frequency of alcohol consumption. Significantly more persons of a higher educational level consume alcohol "once a week or more often" than do the others; conversely, significantly fewer of them consume alcohol "one to three times a month" (Figure 4, and Table A2 in Appendix).

Figure 4
Frequency of alcohol consumption by educational level (%), population aged 12 and over, Iiyiyiu Aschii, 2003



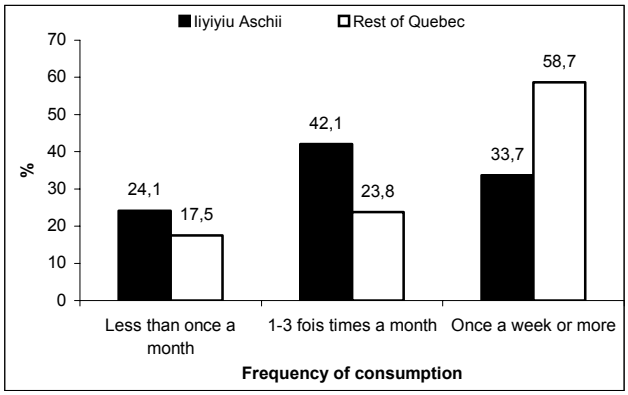
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

The data obtained on matrimonial status suggest that persons who are single and were never married, as well as people who have separated or who are divorced or widowed, are more likely to consume alcohol "once a week or more often" than those who are married or in common-law unions. The observed differences, however, are not significant (Table A2, Appendix). In the matter of frequency of consumption, no other remarkable difference was noted as between the sub-regions where respondents resided (coastal or inland communities); the few differences observed as a function of community size are not significant (Table A2, Appendix).

The proportion of current drinkers rose significantly in Iiyiyiu Aschii between 1991 and 2003, growing from 49% to 53%, while the proportion of individuals who have never consumed has considerably declined (from 23% to 14%) in the same period (data not shown). The same trend is present for both sexes. It seems that men have significantly increased the number of current drinkers over the past decade, while women have rather joined the ranks of former drinkers. Data on the frequency of consumption in the two surveys could not be compared.

Data obtained for the rest of Quebec on the frequency of alcohol consumption reveal important differences as to the mode of consumption in the two regions. First, it must be remembered that in other parts of Quebec there is a much higher proportion (82%) of current drinkers than in Iiyiyiu Aschii (54%). Figure 5 shows that current drinkers in the rest of Quebec consume alcohol much more frequently than do those in Iiyiyiu Aschii; 59% of current drinkers in the rest of Quebec claim to have consumed alcohol "once a week or more often" during the previous twelve months as against 34% in Iiyiyiu Aschii. Almost twice as many current drinkers in the Cree region claim to have consumed alcohol "one to three times a month" as those in the rest of Quebec (42% vs. 24%).

Figure 5
Frequency of alcohol consumption (%), current drinkers aged 12 and over, Iiyiyiu Aschii and rest of Quebec, 2003



Source: CCHS 2.1 - Iiyiyiu Aschii and rest of Quebec, 2003.

While residents of Iiyiyiu Aschii consume alcohol markedly less often than do people in the rest of Quebec, a closer look at the manner in which they consume alcohol can cast more light on the matter.

Frequency of high levels of alcohol consumption

The survey reveals how many times, in the course of the preceding year, an individual's alcohol consumption was equal to or greater than five drinks on a single occasion. Data on this from Iiyiyiu Aschii show that 73% of current drinkers claim to have engaged in high-level consumption at least once in the preceding year. Of this number, 19% state their high-level consumption occurred "less than once a month", 39% "one to three times a month", and 15% "once a week or more often" (Table

A3, Appendix). Significantly more women and older adults (50 or over) have never consumed alcohol at this level. Among adolescents (12 to 17 years) and young adults (18 to 29 years), more than 20% of respondents state that they consumed five or more glasses on a single occasion once a week or more often. These two groups are quite different from the 30- to 49-year-olds, among which only half as many persons indulge in high-level consumption "once a week or more often" (9%*)[9].

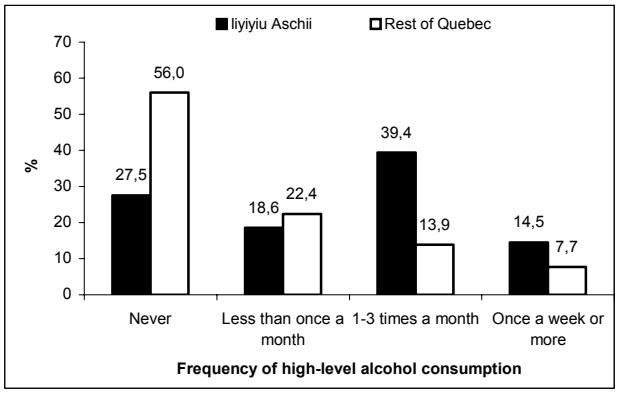
On the other hand, the frequency of high levels of alcohol consumption is significantly correlated with respondents' educational levels. Respondents with the most years of schooling, more than other residents of the region, tend "never" to take five or more drinks on a single occasion; fewer of them, also, consume alcohol "one to three times a month" (Table A3, Appendix). A comparison of these results with data pertaining to the frequency of alcohol consumption lead to the conclusion that persons with a higher level of education tend to consume alcohol regularly, but that they consume five or more drinks on a single occasion less often than others.

The frequency of high levels of alcohol consumption seems also to be related to respondents' marital status. Twice as many separated, divorced, or widowed individuals indulge in elevated levels of alcohol consumption "once a week or more often" as people in traditional or common-law marriages, while more of the latter "never" do so, or do so "less than once a month" (Table A3, Appendix).

No differences are observed as to respondents' sub-region (coastal or inland). However, significantly more inhabitants of Chisasibi (25%) indulge in high-level alcohol consumption "less than once a month" than do those of Mistissini (15%*) and of medium-sized communities (15%*). Residents of medium-sized communities are significantly different from those of smaller communities when it comes to the proportion of people who indulge in high-level consumption "one to three times a month" (47% vs. 33%).

While it is true that residents of Iiyiyiu Aschii consume alcohol less often than people in the rest of Quebec, the former apparently tend more often than the latter to consume five drinks or more on the same occasion. In fact, 39% of the current drinkers in Iiyiyiu Aschii claim to have consumed five or more drinks "one to three times a month" during the previous year, and 15% claim they have done so "once a week or more" (Figure 6). These percentages can be compared to those which obtain in the rest of Quebec, namely 14% and 8%. The answer is "never" for more than half the current drinkers (56%) in the rest of Quebec, or twice the proportion of people giving the same answer in Iiyiyiu Aschii (28%). All the differences observed here between Iiyiyiu Aschii and the rest of Quebec are significant except for the category "less than once a month".

Figure 6
Frequency of high-level alcohol consumption (%), current drinkers aged 12 and over, Iiyiyiu Aschii and rest of Quebec, 2003



Source: CCHS 2.1 - Iiyiyiu Aschii and rest of Quebec, 2003.

DISCUSSION

Alcohol consumption, it is now generally realized, contributes an important part of the total adverse burden on human health (Room et al., 2005). The data presented in this section lead to the conclusion that the proportion of current drinkers is significantly higher in the rest of Quebec than in Iiyiyiu Aschii. Now the incidence of individuals who have ever consumed alcohol in the past — the current drinkers and former drinkers combined — is virtually the same in the region as in the rest of Quebec. Closer analysis tells us, however, that the two populations differ markedly as to the mode of consumption of alcohol. The data outlined above show that the frequency of high-level alcohol consumption is higher among the current drinkers of Iiyiyiu Aschii than elsewhere in Quebec. It is now recognized that the risk of alcohol-related problems increases when there is a high level of consumption, defined as the consumption of five or more drinks on the same occasion (Room, 1990). This type of consumption, which can lead to intoxication, corresponds to what is sometimes called "binge drinking" (Brady, 2000; Reynolds et al. 1992). Such behaviour is closely associated with serious health problems, trauma, and social or behavioural disorders (Korhonen, 2004). In this connection it is especially important to consider the young, among whom intoxication is especially common (Chevalier & Lemoine, 2001).

[9] The asterisk (*) indicates a rough estimate (CV between 16.6% and 33.3%); these data are to be interpreted with caution.

Consumption by pregnant women and breastfeeding mothers also deserves some special attention. In recent years many research reports have insisted on the harmful effects on the health of newborns and infants resulting from alcohol consumption by mothers during pregnancy and breastfeeding (Tait, 2003; Saggers & Gray, 1998). The negative impact of such habits are nowadays well known, but no studies have been undertaken which would allow us to evaluate the incidence of foetal alcohol syndrome (FAS) in the Cree populations of Quebec. The current study did, however, involve asking mothers about their alcohol consumption during pregnancy and breastfeeding. According to the data obtained on this topic in the present survey[10], a majority of mothers in the region state they have not consumed alcohol during pregnancy (85%) or breastfeeding (89%). These proportions are reduced in the case of mothers under 25: 77% of them claim not to have consumed alcohol during pregnancy, 82% during breastfeeding. These results are similar to those reported by Willows and Johnson (2003) after an examination of 2,221 birth files in Iiyiyiu Aschii: 82% of mothers claimed not to have consumed alcohol or drugs during pregnancy. The consumption of alcohol during pregnancy and breastfeeding among mothers under 25 years of age, however, follows a pattern similar to what is observed in the rest of Quebec.

2. THE USE OF DRUGS

As with the consumption of alcohol, the use of drugs is associated with a number of social and health problems which depend on the kind of substance consumed, the quantity consumed, and the preferred mode of ingestion (Chevalier & Lemoine, 2001). While drugs do not all entail the same health risks, they can nevertheless have repercussions on the physical or mental health of people who use them. According to Health Canada, most psychotropic substances can impair physical coordination and sensory perceptions or interfere with memory, concentration, and judgment. The undesirable effects represent risks for security, especially if the user drives a vehicle or operates machinery (Health Canada, 2000). On the psychological plane, some drugs can bring about short-term confusion, anxiety, or mental disturbances ("bad trips"). On the longer term, the abuse of drugs may cause changes in personality, learning difficulties and even, in certain cases, mental health problems (Health Canada, 2000). Young people are especially vulnerable in this respect. Those who turn to drugs to overcome anxiety and depression may fall into behaviour patterns which will later be hard to break (Health Canada, 2000).

METHODOLOGICAL ASPECTS

Eight substances were investigated in the course of this survey (Illicit drugs module): (1) marijuana, cannabis, or hashish; (2) cocaine or crack; (3) speed (amphetamines); (4) ecstasy (MDMA) or analogous drugs; (5) hallucinogens, PCP or LSD; (6) inhaled substances (glue, gasoline, or solvents); (7) heroin; and (8) steroids. For each of these substances, the first purpose of the CCHS questionnaire was to establish whether respondents had used them at least once in their lives. If the answer was affirmative, respondents were then asked about consumption during the preceding twelve months. The point here was to determine whether they had consumed drugs over the past year and, if so, to determine the frequency of that consumption ("less than once a month", "one to four times a month", "more than once a week").

In the following analysis only consumption during the last twelve months is taken into account. In our opinion, consumption over the previous year is more interesting in terms of prevention than is consumption over a lifetime, since the information can be used to target actual drug consumers and to study the recurrence of drug use over a given period (the year prior to the survey in the present case).

Since the use of drugs generally involves a minority within a population, one problem commonly encountered in studies on this topic is that of deducing valid proportions of the samples, given the low numbers of some categories. For this reason we have concentrated on the consumption, out of all the drugs mentioned in the CCHS questionnaire, of cannabis (mainly in the form of marijuana and hashish), cocaine, and "at least one" drug[11].

The CCHS questions on the consumption of illicit drugs are essentially identical to those of the Santé Québec survey carried out among the James Bay Cree in 1991 (Santé Québec, 1994). But only three substances were involved in the 1991 study: marijuana or hashish, cocaine or crack, and inhaled substances (glue, gasoline, solvent). This fact is taken into account here when

[10] For more details on this topic see the publication: Auger, N. & Légaré, G. (2008). *Preventive Practices and Changes for Improving Health*. Canadian Community Health Survey (CCHS), Cycle 2.1, Iiyiyiu Aschii, 2003. Montreal : Cree Board of Health and Social Services of James Bay (CBHSSJB) and Institut national de santé publique du Québec (INSPQ).

[11] The category "consumption of at least one drug" covers all drugs considered in the CCHS study, viz.: (1) marijuana, cannabis, or hashish; (2) cocaine or crack; (3) speed (amphetamines); (4) ecstasy (MDMA) or analogous substances; (5) hallucinogens, PCP or LSD; (6) inhaled substances (glue, gasoline, or solvents); (7) heroin; (8) steroids.

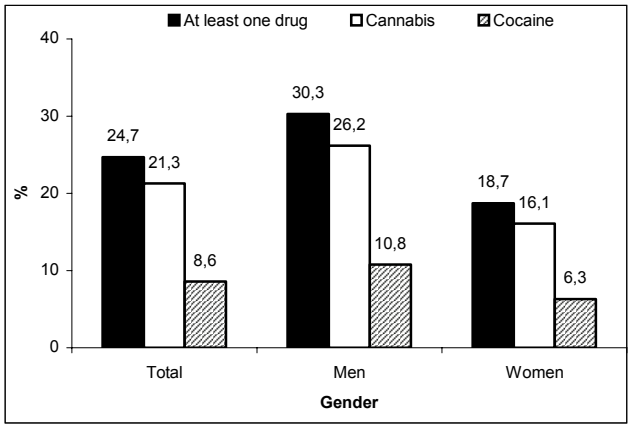
comparisons are made with that survey. No comparisons were made with the rest of Quebec, however; the optional module on the consumption of illegal drugs was not selected by the province for the 2003 survey.

RESULTS

Use of illegal drugs over the last twelve months

A quarter of the residents (25%) aged 12 or over in Iiyiyiu Aschii state they consumed a drug at least once during the twelve months preceding the survey. Cannabis, mainly as marijuana or hashish, remains the uncontested leader of consumed drugs in Iiyiyiu Aschi: approximately one person in five claims to have consumed some over the last twelve months (21%). The next highest proportion is for cocaine consumption (9%). Significantly more men than women consumed "at least one drug" during the twelve months prior to the survey. The same is true for cannabis and cocaine (Figure 7, and Table A4 in Appendix).

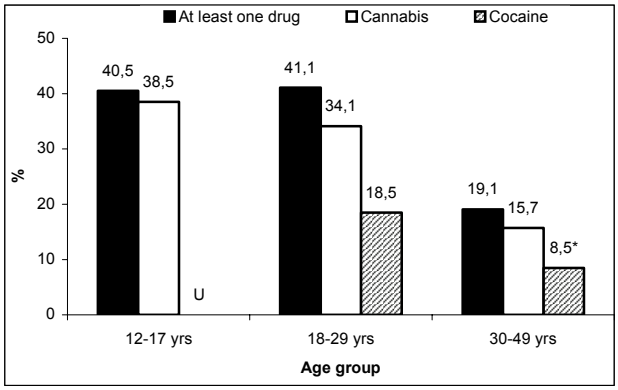
Figure 7
Type of drug consumed over the last twelve months according to gender (%), population aged 12 and over, Iiyiyiu Aschii, 2003



Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

When considering age, one notes that the 12- to 17-year-old and 18- to 29-year-old groups contain twice as many individuals who have used at least one drug in the course of the preceding year than does the 30- to 49-year-old group (Figure 8, and Table A4 in Appendix). Those who have consumed cocaine during the same period belong almost exclusively to the 18- to 49-year-old groups, with young adults (18 to 29 years) containing a significantly greater proportion of cocaine users (19%) than the 30- to 49-year-olds (9%*). The consumption of other drugs was very marginal among the residents of Iiyiyiu Aschii in the same year, involving less than 1% of the population (data not shown). It is noteworthy that the consumption of drugs among those 50 years of age and older was marginal to such a degree that no data about this age group could be incorporated in the following figure.

Figure 8
Type of drug consumed over the last twelve months according to age group (%), population aged 12 and over, Iiyiyiu Aschii, 2003



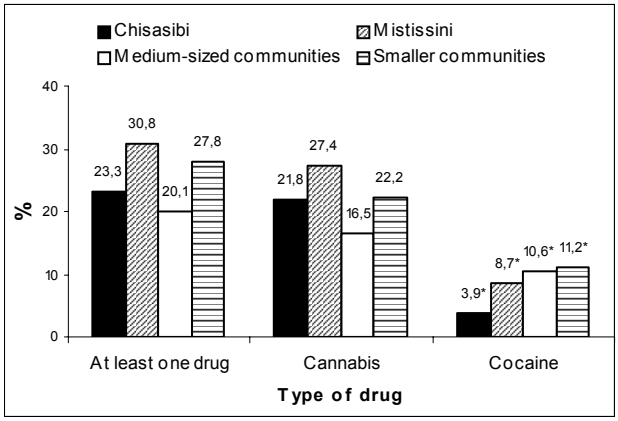
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Educational level, matrimonial status, and place of residence seem to have some incidence on the consumption of drugs over the last twelve months. Significantly fewer individuals with higher levels of schooling used at least one drug or cannabis in the last twelve months than did those with low or intermediate levels of schooling. On the other hand, a significantly greater proportion of separated, divorced, or widowed individuals used at least one drug or cannabis during the last twelve months compared to those who are in traditional or common-law marriages or those who are single or were never married (Table A4, Appendix). Finally, twice as many residents of the inland communities consumed at least one drug or cannabis over the last twelve months as did residents of the coastal communities; in fact three times as many of the inland residents used cocaine during the same period. These results call for a closer look at the consumption of drugs as a function of community size. The data presented in Figure 9 (Table A4, Appendix) lead us to conclude that the proportions of consumers of "at least one drug" or cannabis are practically the same in one group of communities as in another[12]. It is nevertheless

[12] However, the only significant differences observed in connection with cannabis consumption are those between Mistissini and the medium-sized communities (1,000 to 2,000 inhabitants). As for the consumption of at least one drug, the medium-sized communities are

astonishing that there are only half as many cocaine users in Chisasibi, proportionally, as in the three other community groups (Figure 9, and Table A4 in Appendix).

Figure 9
Consumption of drugs over the last twelve months as a function of community size (%), population aged 12 and over, Iiyiyiu Aschii, 2003



* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

The data obtained by the Santé Québec Health Survey of the James Bay Cree in 1991 lead us to conclude that the consumption of drugs in the course of a year has increased significantly between 1991 and 2003 among residents 15 years of age and older. A closer examination of the growth in the proportions of consumers during this period justifies the conclusion that the increases are practically the same for the two types of drug studied. While the proportion of cannabis users rose from 15% to 21% between 1991 and 2003, the number of cocaine users rose from 4%* to 10% (data not shown). These figures, indicating that drug consumption has continually increased through the last decade, follow the same pattern as the numbers reported for the rest of Canada (Adlaf et al., 2005) and Quebec (Chevalier & Lemoine, 2001).

Frequency of consumption of marijuana, cannabis, or hashish

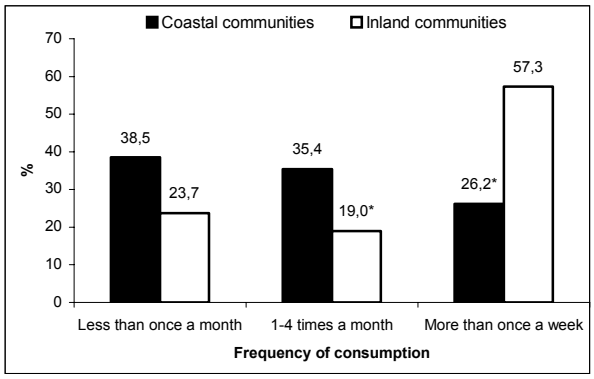
As in the rest of Canada (Patton & Adlaf, 2005) and in Quebec (Chevalier & Lemoine, 2001), cannabis remains the most commonly used drug in Iiyiyiu Aschii. Accordingly, the frequency of consumption has been studied for this substance by itself.

Among those residents who reported having consumed cannabis over the last twelve months (21%), 44% mention having done so "more than once a week", 26% "one to four times a month", and 30% "less than once a month" (Table A5, Appendix). Men consume more frequently than women: in fact a significantly greater number of them have done so "more than once a week" than have women (54% vs. 27%*). At the other end of the spectrum, a significantly larger proportion of women consume "less than once a month" than is the case for men (42% vs. 23%*). For their part, half of the adolescents from 12 to 17 years of age (49%*) and of young adults from 18 to 29 years of age (52%) consume cannabis "more than once a week". In this case, differences observed between age groups do not appear to be significant (Table A5, Appendix). Individuals with higher levels of schooling consume "less than once a month" in significantly greater numbers than do people in the middle of the educational scale (47%* vs. 23%*). As for matrimonial status, people in traditional or common-law marriages consume cannabis "less than once a month" in almost twice the numbers (39%*) that separated, divorced, or widowed people do (23%*).

Significant differences in the frequency of consumption of cannabis are observed in connection with respondents' places of residence. Residents of inland communities generally consume more frequently than do those of coastal communities. In fact twice as many of them consume on a weekly basis and proportionally far fewer of them do so "one to four times a month" or "less than once a month" (Figure 10).

significantly different from both Mistissini and the smaller communities (fewer than 1,000 inhabitants).

Figure 10
Frequency of consumption of marijuana, cannabis, or hashish by sub-region (%), population aged 12 and over, Iiyiyiu Aschii, 2003



* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Comparisons based on groups of communities reveal that twice as many people consume cannabis "less than once a month" in Chisasibi (45%*) than in the medium-sized (23%*) or smaller (21%*) communities; these differences are significant. Individuals who have consumed cannabis on a weekly basis ("more than once a week") during the twelve months prior to the survey are found in significantly greater numbers in Mistissini (52%) than in Chisasibi (31%).

DISCUSSION

The data set forth in this section allow us to conclude that the consumption of drugs between 1991 and 2003 appears to be growing in Iiyiyiu Aschii. In terms both of consumption over a lifetime and of consumption in the preceding year, men and young persons remain the groups most involved. As for differences between sub-regions (coastal vs. inland communities), these have turned out highly significant in the region, the consumption of drugs being generally more widespread in the inland communities. Cannabis is the drug most commonly used in Iiyiyiu Aschii, as also in other parts of Canada and Quebec (Patton & Adlaf, 2005; Chevalier & Lemoine, 2001). Aside from this, the region's residents differ from other Canadians by their heavier consumption of other substances, such as cocaine, over the last twelve months.

3. GAMBLING

In western countries there is an increasing awareness of the need to be informed about people's gambling activities, to observe them over time, and to understand the attendant problems. This tendency is scarcely evident, however, when it comes to native peoples, whether they be Maoris in New Zealand, aborigines in Australia, Amerindians in the United States, or First Nations and Inuit people in Canada.

Some scientific studies have indicated that native people are proportionally more involved with gambling and problematic gambling behaviour than is the general population (Auger & Hewitt, 2000; Volberg & Abbott, 1997; Zitzow, 1996; Volberg, 1994). Other studies, however, have not reported such differences (Smith & Wynne, 2002; Cozzetto & Larocque, 1996).

To date, four Canadian studies on the prevalence of gambling have shown results on gambling problems among First Nations people; another study, on the Inuit of Nunavik, is currently under way (Muckle et al., 2007). The four studies already published are all about the native people of Alberta. Reporting on young people, Adebayo (1998) showed that 98% of 7th and 8th grade students in the Northern Lights School Board (Division 69) took part in some form of gambling in the twelve months prior to the study. For their part, Hewitt and Auger (1995) determined that 89% of native secondary school students, whether living on or off reserve, participated in gambling activities in the twelve preceding months; they also estimated that 49% of young natives present a gambling problem or are at risk of developing one. As for adults, Auger and Hewitt (2000) demonstrated, using a sample of Albertan natives living on and off reserve, that 88% had placed a bet during the preceding year and that 24% of this population had a gambling problem. Smith and Wynne (2002) estimated that 84% of Albertan natives and métis participated in some form of gambling over the twelve preceding months, and that 17% have a gambling problem.

Our prevalence study is the first to single out the Cree of Iiyiyiu Aschii, although a recent qualitative analysis dealing with five communities in the region (Couchees, 2005) describes the gambling opportunities, gambling practices, the organization of gambling, and attitudes towards the gambling problem in the communities. Here we should also mention the work of an anthropologist published more than a century ago (Laidlaw, 1901), describing a game of chance which is no longer played. The brief overview which follows describes the level of participation in gambling of the population of Iiyiyiu

Aschii, and the magnitude of the problems resulting therefrom.

METHODOLOGICAL ASPECTS

The questions about gambling (Problem Gambling module) were asked to all participants, that is to say individuals 12 years of age and over. We used an adapted version of the Canadian Problem Gambling Index (Ferris & Wynne, 2001). This instrument has two main parts: the first quantifies a person's gambling habits and the second provides an estimate of whether that person has a gambling problem or is at risk for developing such a problem. The level of risk or the presence of a gambling problem is determined from a list of some fifteen criteria. Persons deemed not to have a gambling problem or to present a low risk of developing one will have answered in the affirmative to not more than three criteria. Those who say they match four or more of these criteria are deemed to have a gambling problem or to present a moderate risk of developing one. A gambler is defined as someone who has taken part in one form or another of gambling over the twelve months preceding the survey.

Two sources provide comparisons with Quebec. In the adults' case the data come from a survey conducted in 2002 by Chevalier and his colleagues (2004), from which a new set of conclusions was drawn. As for minors — youths from 12 to 17 years old — data come from a survey conducted periodically among secondary school students by the Institut de la statistique du Québec; we have used the data of the 2002 survey (Chevalier et al., 2003).

RESULTS

Before the results as such are presented it is important to know what opportunities for gambling exist in Iiyiyiu Aschii. Instant lotteries[13] are available in every community; as for regular lotteries[14], terminals have been installed in about half of the Cree communities. Besides this, some communities organize bingo games, either in a hall or through a local radio station. All communities have access to a monthly bingo game via regional radio. Only three communities have video lottery terminals: residents of other communities go to Desmaraisville, Chibougamau, Val d'Or, and Radisson. The Montreal Casino — the establishment patronized by residents of Iiyiyiu Aschii — is situated some 1,500 kilometres from Chisasibi and approximately 950 kilometres from Waswanipi, the southernmost Cree village.

[13] The term "instant lotteries" includes daily lotteries.

[14] The term "regular lotteries" covers lotteries available from Loto-Québec (except for instant and daily lotteries) and drawings.

Participation in gambling

Two-thirds (65%) of the inhabitants of Iiyiyiu Aschii 12 years of age and older gamble (Table 1). Women (67%) do so as much as men (62%). The youngest, proportionally, gamble much less than their elders: 25% among the 12- to 17-year-olds, 76% among the 18- to 29-year-olds, and 69% among those 30 or over. Participation in gambling does not vary with place of residence.

Table 1
Participation in gambling according to different variables (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Gamble
Total population	64.5
Cree only	64.3
Gender	
Men	61.9
Women	67.2
Age group	
12-17 years	25.3
18-29 years	75.7
30 years and +	69.2
Sub-region	
Coastal	62.5
Inland	67.6
Communities	
Chisasibi (more than 3,000 inhabitants)	63.8
Mistissini (2,000 to 3,000 inhabitants)	67.0
Medium-sized communities (1,000 to 2,000 inhabitants)	62.1
Smaller communities (fewer than 1,000 inhabitants)	67.0

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Of all the types of gambling studied here, four are especially favoured by the region's inhabitants: bingo, instant lotteries, regular lotteries, and video lottery terminals (Table 2). The choice of different types is the same for men and women except for bingo, where proportionally more women take part (53% for women vs. 30% for men).

Table 2
Participation in gambling according to gender (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Total	Men	Women
Bingo	41.0	30.1[1]	52.5[1]
Instant lotteries	38.4	37.7	39.2
Regular lotteries	34.5	38.1	30.7
Video lottery terminals	21.3	24.2	18.2
Casino — slot machines	14.6	16.4	12.6
Casino — table games	6.9	7.4	6.4
Cards	5.8	8.3	3.1
Sporting bets	5.6	9.9	U
Games of skill	2.8	5.2	U
Online betting	1.7	U	U

[1] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
U Unpublished data (CV > 33.3% or fewer than 10 respondents).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Among adults, participation in different types of gambling does not vary with age except for regular lotteries and video lottery terminals (Table 3). Regular lotteries tend to attract an older adult group (31% of 18- to 29-year-olds vs. 43% of those 30 and older); video lottery terminals are more attractive for the young (35% of 18- to 29-year-olds vs. 20% of those 30 and older). Among minors, there is a significant proportion of gamblers only for bingo (16%) and instant lotteries (11%).

Table 3
Participation in gambling according to age (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	12-17 years	18-29 years	30 years and +
Bingo	15.7[1, 2]	47.5[1]	44.3[2]
Instant lotteries	11.4	46.2	41.6
Regular lotteries	U	31.1[1]	43.3[1]
Video lottery terminals	U	35.0[1]	19.5[1]
Casino — slot machine	U	18.7	15.7
Cards	U	9.5	4.3

[1,2] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
U Unpublished data (CV > 33.3% or fewer than 10 respondents).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

While participation in gambling generally does not vary as a function of place of residence, or scarcely does so, an exception must be made concerning video lottery terminals. Inhabitants of the inland villages tend proportionally to use these devices more than do those of the coastal villages (28% of inland village residents vs. 17% of coastal village residents — Table 4).

Table 4
Participation in gambling according to type of gambling and sub-region (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Coastal communities	Inland communities
Bingo	42.8	38.1
Instant lotteries	36.5	41.4
Regular lotteries	32.9	37.0
Video lottery terminals	17.3[1]	27.5[1]
Casino — slot machine	14.2	15.0
Cards	4.5	7.8

[1] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Gambling problems

A gambling problem, or the risk of developing one, has been found to affect 9% of the population of Iiyiyiu Aschii. We have detected no difference by sex, age, or place of residence (Table 5).

Table 5
Type of gambler according to different variables (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Does not gamble or does not consider himself/herself to be a gambler	No problem or slight risk	Moderate risk or pathological gambler
Total	58.1	33.3	8.5
Cree only	35.7	55.1	9.2
Gender			
Men	58.2	34.9	6.9
Women	58.0	31.7	10.3
Age group			
12-17 years	85.3	12.8	U
18-29 years	47.2	40.4	12.4
30 years and +	55.9	35.5	8.6
Sub-region			
Coastal	61.4	30.4	8.2
Inland	53.1	37.9	9.0

U Unpublished data (CV > 33.3% or fewer than 10 respondents).
Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Among adults, the proportion of Cree people in Iiyiyiu Aschii who display a gambling problem or who are at risk for developing one is particularly high in comparison with like groups in southern Quebec (9% vs. 2% in the rest of Quebec). It is more difficult to compare the numbers for Iiyiyiu Aschii with those for other native people, because various methodological approaches have been taken (different estimating methods, inclusion or exclusion of individuals living off reserve) and gambling environments are not all alike (different legal frameworks, presence or absence of casinos on native land). We can nevertheless offer certain remarks. On the whole, the proportion of residents of Iiyiyiu Aschii who present a gambling problem is similar to that which is found among other native people. But the people of Iiyiyiu Aschii remain at the bottom of the range of comparable tendencies. Given the small sample sizes of most of the surveys considered, there is no significant difference except for the Alberta results of 1999 (Auger & Hewitt, 2000).

Comparison with Quebec[15]

Taken as a whole, adult inhabitants of Iiyiyiu Aschii proportionally gamble less (72%) than do the inhabitants of southern Quebec (81%). There is considerable divergence, however, as to the type of gambling involved (Table 6). Many more people in the south participate in regular lotteries (65% in the south vs. 39% in Iiyiyiu Aschii). This situation may be partly due to the availability of this type of lottery in the region (Couchees, 2005). On the other hand, proportionally as many inhabitants of Iiyiyiu Aschii as southerners take part in instant lotteries (43% in Iiyiyiu Aschii vs. 37% in the south) or in card games (6% in Iiyiyiu Aschii vs. 11% in the south), and as many play the slot machines in casinos (16% among residents of Iiyiyiu Aschii vs. 16% of southerners). Finally, the Cree proportionally participate more in bingo games (45% among residents of Iiyiyiu Aschii vs. 9% among southerners) and are more drawn to video lottery terminals (25% among the Cree vs. 8% among southerners).

Table 6
Participation in gambling (%), population aged 18 and over, Iiyiyiu Aschii 2003 and all of Quebec 2002

Adults	Iiyiyiu Aschii	All Quebec
Bingo	45[1]	9.0[1]
Instant lotteries	43	37.0
Regular lotteries	39[1]	65.3[1]
Video lottery terminals	25[1]	7.8[1]
Slot machines	16	16.3
Cards	6	10.5

[1] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.

Sources: CCHS 2.1 - Iiyiyiu Aschii, 2003 and Chevalier et al., 2004.

If one takes into account the availability and accessibility of different kinds of gambling in the Cree lands, these data become even more dramatic. There is no casino in Iiyiyiu Aschii and only certain villages have video lottery terminals (Couchees, 2005). Under these conditions the proportion of slot machine players among residents of the Cree region is especially impressive, given the distance which must be travelled to get to the nearest casino. As for the video lottery terminals, the difference between the participation levels of the southern and of Iiyiyiu Aschii populations is just as remarkable. It is the residents of the inland villages, that is to say those living nearest the municipalities where video lottery terminals are available, who resort to this gambling device in the greatest numbers.

In general there are fewer young people in Iiyiyiu Aschii who gamble (25%) than there are young people in southern Quebec who gamble (51%). This result diverges from those found in similar studies (Table 7). We cannot explain the difference. Up to now, as a matter of fact, results obtained by others show that a particularly high number of young natives gamble (from 71% to 98% according to surveys) and that the proportion of natives who gamble is significantly higher than the proportion found among non-natives. In connection with this it is most unfortunate that we cannot estimate precisely, due to our small sample size, the severity of the gambling problem among residents under 18 years of age (Table 8).

[15] All data on Quebec are from Chevalier et al. (2004).

Table 7
Participation in gambling (%), population 12 to 17 years of age for Iiyiyiu Aschii 2003, and secondary school students for all of Quebec 2002

Minors	Iiyiyiu Aschii	All Quebec
Bingo	16	14
Instant lotteries	11[1]	37[1]
All games	25[1]	51[1]

[1] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.

Sources: CCHS 2.1 - Iiyiyiu Aschii, 2003 and Chevalier et al., 2003.

Table 8
Prevalence of gambling problems according to age (%), population aged 12 and over for Iiyiyiu Aschii 2003, compared to secondary school students and adults for all of Quebec 2002

	Iiyiyiu Aschii	All Quebec
Minors	U[1]	7.2[1]
Adults	9.2[1]	1.7[1]

[1] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.

Sources: CCHS 2.1 - Iiyiyiu Aschii, 2003 and Chevalier et al., 2003 and 2004.

DISCUSSION

The present study shows that the residents of Iiyiyiu Aschii, compared with the people of the rest of Quebec, are faced with a substantial gambling problem. While politicians and public health officials seem aware of the gravity of the situation (Couchees, 2005), gambling promoters have quite a different attitude — a situation not unlike the one encountered in other parts of Quebec. For the time being, the young do not seem affected by gambling problems; but the situation bears close watching. As for the adults, it seems that treatment services for people with gambling problems are a necessity; furthermore, a concerted effort to alert the population about some of the consequences of gambling appears indispensable.

4. CO-OCCURRENCE OF ALCOHOL CONSUMPTION, THE USE OF DRUGS, AND GAMBLING

To complete the picture of lifestyles in Iiyiyiu Aschii — insofar as they involve certain behaviours which put people at risk — one should bear in mind that such behaviours often co-exist. The literature on the subject tells us that the combination of several risk-related behaviours is widespread (Émond et al. , 2005) and is even associated with a phenomenon that certain authors have labelled lifestyle diseases (Saggers and Gray, 1998). Research on this topic shows, among other things, that alcohol consumption frequently accompanies tobacco consumption (Chevalier & Lemoine, 2001; Émond et al., 2005). CCHS data indicate that the proportion of current drinkers — i.e. of persons reporting that they consumed alcohol occasionally or regularly in the preceding year — is growing in parallel with the tobacco habit among Iiyiyiu Aschii residents. Thus 74% of current drinkers in the region are also current smokers. At the other end of the spectrum, a majority of people who have never consumed alcohol have also never smoked (59%). The former drinkers, for their part, are mostly (48%) aligned with the former smokers (data not shown).

Just as alcohol consumption is often associated with a tobacco habit, the consumption of drugs and alcohol are also related. The present consumers of drugs in Iiyiyiu Aschii — i.e. residents who report having consumed a drug at least once in the previous twelve months — are likely (85%) to have occasionally or regularly consumed alcohol during the same period (data not shown). The fact of never having used drugs, however, appears not to be related to alcohol consumption: people who have never consumed drugs throughout their lives turn out to be evenly distributed among drinkers, former drinkers, and people who have never had an alcoholic beverage.

Similarly, gambling is also associated with other types of behaviour involving health risks. Some studies lead to the conclusion that gambling is related to alcohol consumption, among other things, at least for secondary school students in Quebec (Dubé et al., 2005). The Cree CCHS data show that the proportion of alcohol consumers increases with the frequency of gambling: 82% of those presenting a moderate or a pathological gambling habit are also current drinkers. Let us recall, however, that the young (12- to 17-year-olds) in Iiyiyiu Aschii gamble less than their counterparts in the rest of the province.

CONCLUSION

For a large number of people in countries such as Canada, Australia, and New Zealand, the prevailing stereotype about indigenous populations is that natives have alcohol-related problems and, moreover, do not care about the consequences of alcohol abuse (Saggers & Gray, 1998). In fact the natives know perfectly well the price they themselves, their families, their communities, and their nations have paid for the excessive consumption of certain substances (Brady, 2000). The publication on socio-demographic aspects issued in connection with the present survey shows that residents of Iiyiyiu Aschii do realize that a number of problems exist in their communities and recognize their gravity. Excessive alcohol consumption and the use of illegal drugs come respectively first (91%) and third (86%) in the ranking of problems considered "serious" by the region's inhabitants[16]. It is pertinent to mention here that several of the reported problems have long been at the heart of the concerns expressed by this population, as can be seen in the Santé Québec report of 1991 on the James Bay Cree. The data presented in this publication have led us to conclude that the consumption of alcohol and drugs has risen in Iiyiyiu Aschii between 1991 and 2003. Men and young persons constitute the groups most likely to indulge in this type of risk-related behaviour. The data on the coexistence of certain at risk behaviours also show that an important part of the population in Iiyiyiu Aschii present a combination of factors posing a risk to health (alcohol consumption, tobacco use, drug use, gambling); this must be considered in the design of any future campaign to promote choices beneficial to health.

KEY ISSUES

ALCOHOL CONSUMPTION

- Somewhat more than half (54%) of Iiyiyiu Aschii residents are current drinkers.
- Among these drinkers there are mostly men (61%) and young adults from 18 to 29 years of age (80%).
- A majority of separated, divorced, or widowed persons fall into the current drinkers group (64%), while persons in traditional or common-law marriages as well as those who have never been married are almost evenly divided between current drinkers and former drinkers.
- Between 1991 and 2003, the proportion of current drinkers rose from 49% to 53% in Iiyiyiu Aschii. The proportion of people who have never consumed alcohol, on the other hand, has fallen considerably over the same decade, going from 23% to 14%.
- People with higher levels of education consume alcohol on a weekly basis in greater numbers than do the others, but fewer of them consume more than five drinks on a single occasion.
- Current drinkers in Iiyiyiu Aschii consume alcohol less frequently than current drinkers in the rest of Quebec. When they do, however, they tend to consume more copiously (five or more drinks on a single occasion) than current drinkers in the rest of Quebec.

THE USE OF DRUGS

- One quarter (25%) of residents report having consumed at least one drug during the preceding year.
- Among residents of Iiyiyiu Aschii, cannabis is the drug most commonly consumed over the previous twelve months.
- Proportionally twice as many adolescents (12 to 17 years of age) and young adults (18 to 29 years of age) report having consumed at least one drug or cannabis during the preceding year as 30- to 49-year-olds.
- Individuals with higher educational levels have consumed one or more drugs, or cannabis, during the preceding year in smaller numbers than individuals with lower or intermediate levels of education.
- Separated, divorced, or widowed persons have consumed one or more drugs, or cannabis, during the preceding year in greater numbers than individuals in traditional or common-law marriages or those who have never been married.
- Proportionally twice as many residents of inland communities as residents of coastal communities have consumed at least one drug or cannabis over the preceding twelve months. Furthermore, three times as many have used cocaine in the same period. Inland community residents also consume cannabis more frequently than people in the coastal communities.
- There are half as many cocaine users in Chisasibi as in any of the other groups of communities.
- The consumption of drugs in the region increased between 1991 and 2003. Cannabis consumption over

[16] These conclusions agree with those of a survey of the First Nations of Canada revealing that illicit drugs and alcohol come respectively first and second in a list of substances considered dangerous or very dangerous by the First Nations and the population in general (Indian and Northern Affairs Canada, 2004).

a twelve-month period rose from 15% to 21% in the past decade, while cocaine consumption rose from 4%* to 10%.

GAMBLING

- Two-thirds (65%) of residents 12 years of age and older gamble.
- Women participate as much as men (67% vs. 62%).
- Proportionally, young people aged 12 to 17 gamble less (25%) than their elders (76% for those aged 18 to 19 and 69% for those aged 30 and over).
- Of all types of gambling studied, four are especially favoured by people in the region: bingo, instant lotteries, regular lotteries, and video lottery terminals.
- Among inhabitants of Iiyiyiu Aschii 9% have a gambling problem or are at risk of developing one. The proportion for the rest of Quebec is 2%.
- Generally fewer young persons in Iiyiyiu Aschii gamble (25%) than do those in the rest of Quebec (51%).

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APPENDIX

Table A1
Type of drinker according to certain socio-demographic characteristics (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Current drinkers[a]	Former drinkers[b]	Never consumed
Total	53.7	29.7	16.6
Gender			
Men	61.4[1]	26.4[1]	12.5[1]
Women	45.6[1]	33.5[1]	20.9[1]
Age group			
12-17 years	52.5[1,3]	U	39.8[1,2]
18-29 years	79.5[1,2]	17.0[1,2]	U
30-49 years	51.1[2,4]	36.7[1]	12.2[1,3]
50 years and +	29.9[3,4]	45.6[2]	24.5[2,3]
Education			
Lower level	54.5	31.6	13.8[1]
Middle level	54.0	25.1	20.9[1]
Higher level	51.0	29.2	19.8
Marital status			
Married, common-law union	46.0[1]	39.7[1]	14.4[1]
Single, never married	50.0[2]	40.4[2]	U
Separated, divorced, widowed	64.4[1,2]	14.6[1,2]	21.0[1]
Sub-region			
Coastal	53.4	26.9[1]	19.7[1]
Inland	54.1	33.9[1]	12.0[1]
Communities			
Chisasibi (more than 3,000 inhabitants)	57.7[1]	27.5[1]	14.7
Mistissini (2,000 to 3,000 inhabitants)	47.8[1]	40.7[1,2,3]	11.5*[1]
Medium-sized communities (1,000 to 2,000 inhabitants)	54.1	25.3[2]	20.6[1]
Smaller communities (fewer than 1,000 inhabitants)	54.5	27.7[3]	17.8

[a] "Current drinkers" are individuals who have consumed alcohol occasionally or regularly during the preceding twelve months.
[b] "Former drinkers" are individuals who have previously consumed alcohol but have not done so in the preceding twelve months.
[1, 2, 3] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Table A2
Frequency of alcohol consumption according to certain socio-demographic characteristics (%), current drinkers[a] aged 12 and over, Iiyiyiu Aschii, 2003

	Less than once a month	One to three times a month	Once a week or more
Total	24.1	42.1	33.7
Gender			
Men	21.1	40.8	38.1[1]
Women	28.5	44.0	27.5[1]
Age group			
12-17 years	37.0[1,2]	31.9*[1,2]	31.2*
18-29 years	18.1[1,3]	46.7[1,3]	35.2
30-49 years	19.9[2,4]	46.2[2,4]	33.9
50 years and +	40.9*[3,4]	27.3*[3,4]	31.8*
Education			
Lower level	22.5	48.8[1]	28.7[1]
Middle level	27.5	44.7[2]	27.8[2]
Higher level	28.2	28.1[1,2]	43.7[1,2]
Marital status			
Married, common-law union	29.0	44.5	26.5
Single, never married	U	46.7	39.1*
Separated, divorced, widowed	21.2	39.7	39.1
Sub-region			
Coastal	25.0	41.3	33.7
Inland	22.8	43.4	33.8
Communities			
Chisasibi (more than 3,000 inhabitants)	21.0*	40.7	38.3
Mistissini (2,000-3,000 inhabitants)	21.6*	45.5	33.0
Medium-sized communities (1,000-2,000 inhabitants)	25.3	45.5	29.3
Smaller communities (fewer than 1,000 inhabitants)	29.2	34.9	35.9

[a] "Current drinkers" are individuals who have consumed alcohol occasionally or regularly during the preceding twelve months.
[1, 2, 3, 4] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Table A3
Frequency of excessive (high-level) consumption[a] of alcohol according to certain socio-demographic characteristics (%), current drinkers[b] aged 12 and over, Iiyiyiu Aschii, 2003

	Never	Less than once a month	One to three times a month	Once a week or more
Total	27.5	18.6	39.4	14.5
Gender				
Men	22.3[1]	21.1	39.4	17.2
Women	34.9[1]	15.2	39.4	10.6*
Age group				
12-17 years	22.1*[1]	25.6*	30.8*[1]	21.5*[1]
18-29 years	18.9*[2]	16.1*	43.8	21.2[2]
30-49 years	24.6[3]	20.8	46.1[1]	8.5*[1,2]
50 years and +	67.4[1,2,3]	U	U	U
Education				
Lower level	23.3[1]	19.1	40.8[1]	16.8
Middle level	21.6*[2]	17.5*	47.6[2]	13.3*
Higher level	42.1[1,2]	19.6*	28.4[1,2]	9.9*
Marital status				
Married, common-law union	33.7[1]	23.1[1]	35.2	8.1*[1]
Single, never married	32.4*	U	46.6*	U
Separated, divorced, widowed	20.9[1]	15.0[1]	42.5	21.6[1]
Sub-region				
Coastal	26.7	20.5	37.9	14.9
Inland	28.6	15.9	41.6	13.9
Communities				
Chisasibi (more than 3,000 inhabitants)	21.2*	24.8[1,2]	36.6	17.5*
Mistissini (2,000 to 3,000 inhabitants)	30.9	15.2*[1]	36.9	17.0*
Medium-sized communities (1,000 to 2,000 inhabitants)	29.6	14.5*[2]	46.5[1]	9.6*
Smaller communities (fewer than 1,000 inhabitants)	29.2*	20.9*	33.0[1]	16.9*

[a] Five alcoholic drinks or more on a single occasion.
[b] "Current drinkers" are individuals who have consumed alcohol occasionally or regularly during the preceding twelve months.
[1, 2, 3] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Table A4
Consumption of drugs during the twelve preceding months according to type of drug and certain socio-demographic characteristics (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Consumption in the last twelve months		
	At least one drug[a]	Cannabis	Cocaine
Total	24.7	21.3	8.6
Gender			
Men	30.3[1]	26.2[1]	10.8[1]
Women	18.7[1]	6.1[1]	6.3[1]
Age group			
12-17 years	40.5[1]	38.5[1]	U
18-29 years	41.1[2]	34.1[2]	18.5[1]
30-49 years	19.1[1,2]	15.7[1,2]	8.5*[1]
50 years and +	U	U	U
Education			
Lower level	26.8[1]	23.6[1]	10.0
Middle level	30.6[1,2]	25.8[2]	11.3*
Higher level	17.1[1,2]	14.3[1,2]	U
Marital status			
Married, common-law union	16.0[1]	13.5[1]	7.4
Single, never married	21.3*[2]	15.5*[2]	U
Separated, divorced, widowed	37.1[1,2]	32.9[2]	10.3
Sub-region			
Coastal	18.0[1]	16.1[1]	4.7*[1]
Inland	34.8[1]	29.2[1]	14.5[1]
Communities			
Chisasibi (more than 3,000 inhabitants)	23.3	21.8	3.9*[1,2,3]
Mistissini (2,000-3,000 inhabitants)	30.8[1]	27.4[1]	8.7*[1]
Medium-sized communities (1,000-2,000 inhabitants)	20.1[1,2]	16.5[1]	10.6*[2]
Smaller communities (fewer than 1,000 inhabitants)	27.8[2]	22.2	11.2*[3]

[a] The category "at least one drug" covers all drugs included in the CCHS survey.
[1, 2, 3] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.

Table A5
Frequency of consumption of marijuana, cannabis, or hashish during the twelve preceding months according to certain socio-demographic characteristics (%), population aged 12 and over, Iiyiyiu Aschii, 2003

	Frequency of consumption of marijuana, cannabis, or hashish during the twelve preceding months		
	Less than once a month	One to four times a month	Once a week or more
Total	30.1	26.1	43.8
Gender			
Men	23.1*[1]	23.3*	53.6[1]
Women	41.8[1]	30.8*	27.4*[1]
Age group			
12-17 years	U	34.6*	48.5*
18-29 years	29.6*	18.8*	51.6
30-49 years	36.5*	28.3*	35.2*
50 years and +	U	U	U
Education			
Lower level	29.1*	23.4*	47.4
Middle level	23.0*[1]	38.1*	38.9*
Higher level	47.3*[1]	U	40.8*
Marital status			
Married, common-law union	38.8*[1]	21.4*	39.8
Single, never married	U	U	U
Separated, divorced, widowed	22.5*[1]	29.2*	48.3
Sub-region			
Coastal	38.5[1]	35.4[1]	26.2*[1]
Inland	23.7[1]	19.0*[1]	57.3[1]
Communities			
Chisasibi (more than 3,000 inhabitants)	45.3*[1,2]	35.3*	31.8[1]
Mistissini (2,000-3,000 inhabitants)	31.3*	20.1*	52.1[1]
Medium-sized communities (1,000-2,000 inhabitants)	22.6*[1]	25.8*	51.8
Smaller communities (fewer than 1,000 inhabitants)	21.1*[2]	28.7*	50.3

[1, 2] Estimates with the same exponent are significantly different at a level of $\alpha = 0.05$.
* Imprecise estimate. Interpret with caution (CV between 16.6% and 33.3%).
U Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 - Iiyiyiu Aschii, 2003.