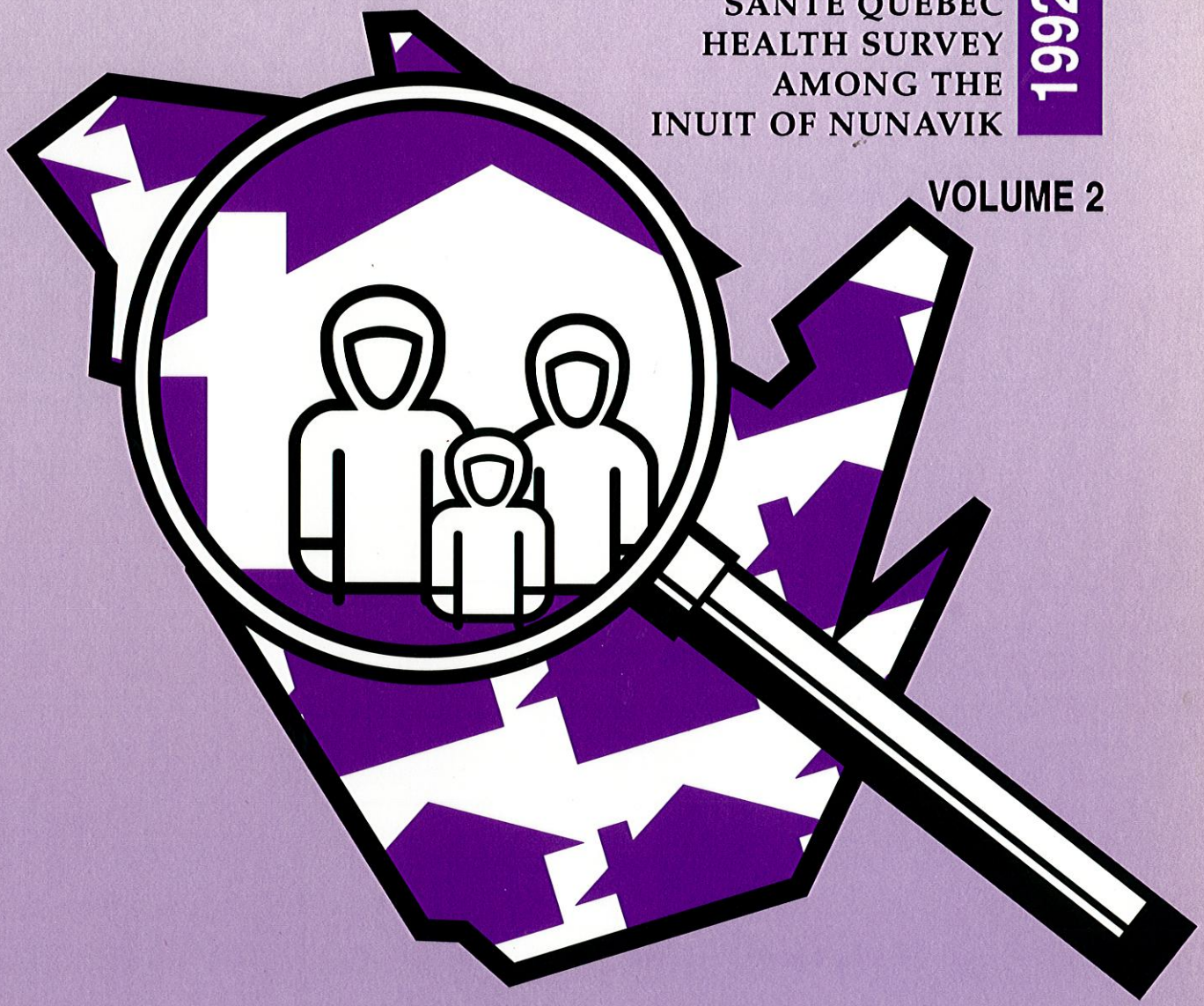
# SANTÉ QUÉBEC

## A HEALTH PROFILE OF THE INUIT

## REPORT

OF THE SANTÉ QUÉBEC HEALTH SURVEY AMONG THE INUIT OF NUNAVIK 1992

VOLUME 2



Québec

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# A HEALTH PROFILE OF THE INUIT

REPORT OF THE SANTÉ QUÉBEC HEALTH SURVEY AMONG THE INUIT OF NUNAVIK, 1992

**VOLUME II**

**HEALTH STATUS AND ITS CONSEQUENCES**

*Editor : Mireille Jetté*

Gouvernement du Québec
**Santé Québec**

# SANTÉ QUÉBEC

# A HEALTH PROFILE OF THE INUIT

## *Report of the Santé Québec Health Survey Among the Inuit of Nunavik, 1992*

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# FEW INTRODUCTORY WORDS ...

The first volume of this work bears witness to the fact that for over twenty years Inuit society has been confronted with a barrage of cultural, economic and social change. The process of acculturation has extended to education, housing and communications, and has created a dependence upon government transfer payments. This change has not, however, occurred smoothly and the result has been a more sedentary lifestyle, constantly changing eating habits, a questioning of cultural, traditional and spiritual values that has sparked inter-generational conflict, and a social climate conducive to violence. In the following pages, a profile of the physical and mental health status of the Inuit, its consequences on ability to function and on the health care and social services system will reveal that these fundamental transformations may have caused a backlash in the evolution of this population.

The process of adaptation has brought with it a constant struggle between life style and the environment, and has tended to be hindered or even inhibited by a series of calamitous events.

By definition, sudden change tends to upset basic human activity, thereby leading to disruption at all social levels and requiring a series of attempts to adapt. On this subject Dubos notes :

> *« The process of adaptation in ancient agrarian society was completely different from the process of adaptation in 19th-century industrial society, and the qualities necessary to adapt to the computer age are entirely unrelated to those required in those two periods. « Progress » always entails the risk of facing new dangers, and disease occurs each time man does not react quickly enough to the new milieu in which he has chosen to live and operate -- that is, almost constantly. »* Dubos, 1981 : p. 78)[1]

(1) DUBOS, R. (1981). «L'homme face à son milieu», *Médecine et société. Les années 80*, Édition coopératives Albert Saint-Martin, 53-79.

Like Dubos, we have no intention of denouncing « progress ». We have, however, observed that when change of any kind occurs too rapidly there is a price to pay, be it physical, mental or social.

> *« Current technological and social changes follow a rhythm that is impossible to keep up with and that simultaneously affect all parts of the world, and all social levels. In the past, change was generally so slow that the human race -- if not individuals -- could unconsciously adapt to survive. Little by little, humanity's genetic heritage has changed ; phenotypical alterations (relating to the hereditary trait that comes from particular circumstances of the milieu) have helped individuals -- or at least most of them -- to function efficiently in their particular circumstances. Man, especially, has learned to adapt technologically and socially to his surroundings. However, if the rate of change continues to increase, we shall no longer have sufficient time to so adapt, either unconsciously or gradually. »* (Ibid, p. 77).

In summary, Dubos questions not the idea of this « forward march », rather the rhythm of ongoing change that propels the human race toward a future that does not allow people sufficient time to master -- from the biological, mental or social standpoint -- their surroundings and adapt to them.

Bernard Lamothe
Louise Lemire
Mireille Jetté

# PART II

# HEALTH STATUS

# CHAPTER 9

# PHYSICAL STATE OF HEALTH

## SECTION I

## PERCEIVED STATE OF HEALTH AND HAPPINESS

## SECTION II

## REPORTED HEALTH PROBLEMS

## SECTION III

## HEARING AND VISION PROBLEMS

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## ACCIDENTS AND INJURIES

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# GLOSSARY

**Antagonistic tooth**

Tooth of opposite maxilla.

**Comparative index**

Result of a mathematical calculation using findings from other surveys to forecast results (expected results) or compare the results of the new survey with those of the reference surveys. This index allows us to determine, for example, whether Inuit health problems are more or less prevalent than those which came to light in the 1991 Cree and 1987 master survey.

**Complete natural dentition**

Presence of no less than 24 natural teeth.

**HPL**

Human Population Laboratory of the California Department of Public Health.

**ICDA**

Grouping together of states of morbidity using class names set out in the International Classification of Diseases (ICD, the 9th edition).

**Inferior maxilla**

Lower jaw.

**ODQ**

*Ordre des dentistes du Québec* (Québec Order of Dentists)

**Sector III**

Includes the villages of *Kuujjuaq, Umiujaq* and *Kuujjuarapik*.

**Sector IV**

Includes the villages of *Inukjuak* and *Povungnituk*.

**Sector A**

Includes the villages of Sectors III and IV.

**Sectors V or B**

Includes the villages of *Akulivik, Ivujivik, Salluit, Kangiqsujuaq, Quataq, Kangirsuk, Aupaluk, Tasiujaq* and *Kangiqsualujjuaq*.

**Superior maxilla**

Upper jaw.

**TCCF**

Index used to measure the incidence of teeth with caries, cavities and fillings, as well as missing teeth.

## 9.0 INTRODUCTION

Of the numerous means of measuring a population's state of health, subjective evaluation is still widely used. In general, people are asked to describe their state of health, either in absolute terms or relative to others in the same age group. The increasing popularity of this method since the 1960s has been amply justified (Goldstein *et al.*, 1984). In addition to being simple and inexpensive, it relates to other measures of a person's state of health, including measures said to be objective. The reliability of this index has already been established, particularly through studies that examine its association with mortality (Idler *et al.*, 1990 ; Kaplan and Camacho, 1983 ; Mossey and Shapiro, 1982). In these studies, the effect of poor state of health on mortality is clear, even considering other measures of a person's state of health (clinical or subjective). In other respects, the perception that individuals have of their health is related to other measures such as reporting chronic illnesses, functional disabilities, or symptoms (Idler *et al.*, 1990 ; Segovia *et al.*, 1989a). This perception is also associated with the majority of components of the index of healthy lifestyles (Segovia *et al.*, 1989b), the use of health care services (Segovia *et al.*, 1989b) or the institutionalization of the elderly (Weinberger *et al.*, 1986).

Some authors have argued that the perception individuals have of their chronic illnesses is reflected in their subjective state of health (Goldstein *et al.*, 1984). Data from the 1987 Santé Québec survey revealed an association between the perceived state of health and the overall health index based upon reported health problems and disabilities. The relation between perceived state of health measured by distress or psychological well-being was established by data from the same survey for the Montréal region (Massé and Poulin, 1990).

Previous studies have made it possible to depict part of the total health picture for the Inuit population based on mortality and hospital morbidity indicators. In general, the state of health of the Inuit has been shown to be poorer than that of the Québec population as a whole. Even where health problems were similar[1] for both populations, they were more widespread and more severe among the Inuit (Dufour, 1991). According to these studies, some of the most prevalent health problems among the Inuit were hearing problems (CRKSSS, 1991 ; Muir, 1991). According to the Plasannouq survey, conducted by Foggin in 1983-1984, more than one third of the Inuit population, children and adults combined, showed past or present signs of ear disease. In fact, the problems tended to start at a very young age in the form of otitis media. In a 1984 survey of schoolchildren in *Kuujjuarapik*, the prevalence of chronic

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(1) One of the challenges encountered in this survey was to translate precise medical terms such as illnesses, symptoms, etc. in Inutitut. Despite the numerous measures taken to ensure the reliability and validity of the translation (see Methodology), some problems remained : did the terms used throughout the study all mean the same for the Inuit? Was it possible that higher levels of reporting were caused by an inadequate comprehension of the concepts used? Even after conducting extensive research, we could not provide conclusive answers to these questions. Throughout this second volume, we shall therefore need to nuance our conclusions with respect to the extent to which the population is affected by certain ailments, illnesses and diseases.

otitis with hearing loss was much higher among the Inuit children than among the Cree children (Baxter *et al.*, 1986).

Several factors could explain the higher prevalence of these problems : overheated dwellings, dry air and pollution from cigarette smoke, bottle-feeding in the reclining position, delayed treatment of acute otitis, and, possibly, biological or racial factors (Blanchet *et al.*, 1992). To the foregoing, Dufour (1991) added malformations, lack of parent knowledge, lack of expertise regarding children's health, deficient hygiene, and inadequate health care services. Among adults, frequent use of firearms and ATVs (such as snowmobiles and four-wheel drive vehicles) may also contribute to hearing loss.

Career is the second most important health problem in Nunavik. From 1982 to 1986, it accounted for one death in seven (Proulx, 1991) in the Hudson Bay area. Cancer mortality was much higher among women than men, although the incidence was generally greater in men (Dufour, 1991). The most common cancers were lung, cervix, large intestine, and rhinopharynx (CRKSSS, 1991 ; Dufour, 1991 ; Labbé, 1987).

With respect to respiratory problems, they were responsible for one in seven deaths in the Inuit population (Dufour, 1991). They were also the primary reason for consultation (Muir, 1991). In fact, chronic respiratory illnesses are highly prevalent in the Nunavik region (CRKSSS, 1991 ; Dufour, 1991 ; Muir, 1991 ; Thouez *et al.*, 1990). Inflammatory and articular illnesses or other autoimmune diseases were also among the most frequently occurring health problems in the Inuit population, especially among the women (CRKSSS, 1991 ; Dufour, 1991 ; Proulx, 1988).

These health problems were related to sociodemographic factors such as age and sex (CRKSSS, 1991 ; Dufour, 1987, 1991 ; Proulx, 1988 ; Thouez *et al.*, 1993), place of residence (CRKSSS, 1991 ; Thouez *et al.*, 1993), and unemployment rate (CRKSSS, 1991). Alcohol and drug abuse, as well as smoking, have also been associated with health problems in the Nunavik population (CRKSSS, 1991 ; Dufour, 1991 ; Muir, 1991 ; Proulx, 1988 ; Thouez *et al.*, 1993). Furthermore, the Inuit population has been faced with sweeping change that resulted in a more sedentary lifestyle, homes that were overheated and sometimes overcrowded, poor eating habits, and decreased tendency to adopt preventive measures (Béïque, 1986 ; Dufour, 1991 ; Proulx, 1988).

As for vision problems, the ocular structure of the Inuit demonstrated a predisposition to acute-angle glaucoma (Labbé, 1987). Moreover, the intense presence of ultraviolet rays in the atmosphere, and the reflection of these rays off the snow in spring appeared to cause many eye problems (e.g. : snowblindness, pterygium and Labrador keratopathy) (Labbé, 1987).

Lastly, diseases of the nervous system and body organs were the fifth largest cause of hospitalization. Middle-ear infections were the most frequently diagnosed, especially among children (Blanchet *et al.*, 1992).

Mortality statistics were telling : accidents[1] were clearly the principal cause of death among the Inuit. From 1984 to 1988, more than one quarter of deaths were attributable to poisonings and traumatisms -- three times greater than the figure for the Québec population as a whole (Blanchet *et al.*, 1992). Men were particularly affected. The phenomenon has progressed sharply : from 1974 to 1979, accidents represented approximately one fifth of all deaths (Labbé, 1987).

In terms of hospitalization, traumatic injuries and poisonings from 1987-1988 ranked fourth place and accounted for 8 % of all hospitalizations (Blanchet *et al.*, 1992). Once again, men, especially those in the 15-34 age group, were most affected. From 1988-1989, accidents ranked second among all medical evacuations outside the region, 13 % overall.

Most accidents related to lifestyle : a number of safety standards were little respected while operating motor vehicles, the wearing of a protective helmet was less widespread, and water safety left much to be desired, especially when it came to wearing individual life jackets (Labbé, 1987 ; Delisle *et al.*, 1989).

Hunting and fishing involved many risks, some of which were associated with the use of firearms. According to a report on fatal accidents in the Hudson Bay coastal area, drownings represented more than a third of all accidents (CRKSSS, 1991), followed by burns and suffocation, and traumatisms resulting from the use of motor vehicles. More recent data (1988-1990) for the entire Kativik region show that suicides and drownings represented the two main causes of death by traumatism. The figures stood at 36.6 % and 12.4 % respectively (Choinière *et al.*, 1993).

Traumatisms resulted in relatively few deaths. However, the effects of traumatisms on restrictions of activity, work, the cost of health services, and several other aspects of modern lifestyle were considerable (Beaulne *et al.*, 1991). The data from the 1987 Santé Québec

(1) In this survey, « accident » is used as a generic term comprising intentional and non-intentional traumatisms.

survey showed, for example, that traumatisms ranked third among the causes of long term disability, and fifth among reasons for consulting a health care professional. Moreover, they represented a quarter of all emergency admissions.

Although the state of Inuit dental health has been described as deplorable, there were no reliable data available in Québec respecting particularly the adult population. Dental health workers in Nunavik have demonstrated that teeth decay was extremely widespread and that periodontal complications were largely responsible for loss of teeth among young adults. Premature tooth extraction was common, but replacement by prosthesis difficult as services were not always adequate. The Inuit had difficulty adapting to dentures and often preferred not to wear them despite the ensuing loss of chewing ability. This problem was identified as a priority among dental health care professionals in Nunavik (CRKSSS, 1991).

Previous studies of Inuit youth has shed light on the severe, premature occurrence of tooth decay and the disastrous consequence of poor diet on dental health (Labbé, 1987 ; Gagnon, Cléroux, Brodeur and Tremblay, 1989 ; Gagnon, Bergeron, Chatel, Brodeur and Tremblay, 1989 ; Houde, Gagnon and St-Germain, 1991). Among adults, it was thought that the after-effects of dental problems -- tooth loss, abnormal dental placement, diminished chewing ability, and functional disability -- were irreversible.

Each section of this chapter begins with a brief description of the scope and limits of the data used as well as a presentation of results. In addition, whenever comparisons are possible between Inuit and Cree, or between the Inuit and the rest of Québec, results are presented.

The perception of and satisfaction with the state of health, as well as the perception of happiness are described in the first part. The following section discusses health problems. To thoroughly study specific problems, hearing and visual impairments, accidents and injuries, as well as dental health are dealt with in detail in separate sections. The last section presents the results of the Overall Health Index compared with the self-evaluation of health presented in the first part.

# CHAPTER 9 - SECTION I

# PERCEIVED STATE OF HEALTH AND HAPPINESS

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## 9.1 SCOPE AND LIMITS OF DATA

For perceived state of health there were three questions directed at Inuit respondents aged 15 years and over : the perception that people have regarding their state of health, their degree of satisfaction with their state of health, and their perceived happiness.

In this survey, the first question regarding the general state of health offered a choice of four answers, one fewer than in the 1987 Santé Québec survey. In fact, the answer « excellent » did not appear in the questionnaire designed for the Inuit population. Therefore, only a partial comparison between the two surveys was possible. We may therefore use this answer category either by integrating it with the choice « very good » or by disregarding it and comparing the results in terms of the same answer choices. It is obvious that in either case a certain bias will exist. We have preferred the first approach.

## 9.2 RESULTS

### 9.2.1 Perceived state of health

Slightly less than half of the Inuit population considered themselves in very good or good health (12 % and 37 % respectively) (Table 9.1). A roughly similar proportion considered their state of health to be average (48 %), and barely 3 % considered theirs poor.

For the Inuit population as a whole, self-evaluation of state of health was similar for both sexes (Graph 9.1).

The respondents for each age group viewed their state of health differently (Table 9.1 or Graph 9.2). Those in the 25-44 age group considered themselves to be in the best of health, because proportionally more of them considered their state of health as very good or good (almost six out of ten people) and fewer assessed it as average (four people of ten). Among young people aged 15-19, self-evaluation of state of health was very surprising, to say the least, as a very high proportion of them (almost six out of ten) described their state of health as average. This proportion was similar to that observed among people aged 45 and over. How can one explain such a perception? Does physical health or mental health contribute more to self-image? Is it owing to a change of lifestyle among the Inuit? Is it a reflection of a deep unrest among the young? Are the young more critical or more demanding vis-à-vis their state of health? The analyses found in the following chapters, or subsequent analyses, should shed more light on these issues. In addition to these results, data from the current survey revealed that the proportion of people in either very good and good health increased with age up to 44 years but diminished thereafter. This contrasted with findings observed elsewhere in Québec following the 1987 Santé Québec master survey. According to the latter, the

proportion of respondents who perceived their health as excellent, very good or good increased with age. Even though men and women in the same age group did not assess their state of health in the same way, none of the differences were statistically significant.

Residents of **Sector III** described their state of health more positively than those of **Sectors IV** and V (1) : more than six people out of ten in Sector III evaluated their health as good or very good (46 and 16 % respectively, for a total of 62 %), compared with less than five out of ten (48 %) in Sector IV, and four out of ten in **Sector V** (or B) (41 %). Was the population of Sector III better served in terms of health or other services (e.g., hospitals, medical visits and transportation)? Or was it because they lived under more favourable climatic conditions? Is this population more culturally integrated? Or could this more positive self-perception be linked to lower unemployment?

The majority of lifestyle habits (smoking, drinking, participation in leisure or physical activities in the village, body mass) did not prove to be factors that influenced in any marked way the self-evaluated state of health. However, the use of marijuana, hashish or drugs in general seemed to be linked to the perceived state of health. More precisely, former users of marijuana or hashish considered themselves in better health than abstainers or current users.

Survey results were only partially comparable with those of the 1987 Santé Québec master survey and the Canada Health Promotion Survey of 1990 but did compare with the findings of the Cree survey. These comparisons revealed that the Inuit population 15 years and over feels disadvantaged compared with those of Québec, Canada and the James Bay area Cree. Indeed, more than half (51 %) of this population considered themselves to be in average or poor health, compared with 11 % in Québec, 13 % in Canada and 23 % among the Cree.

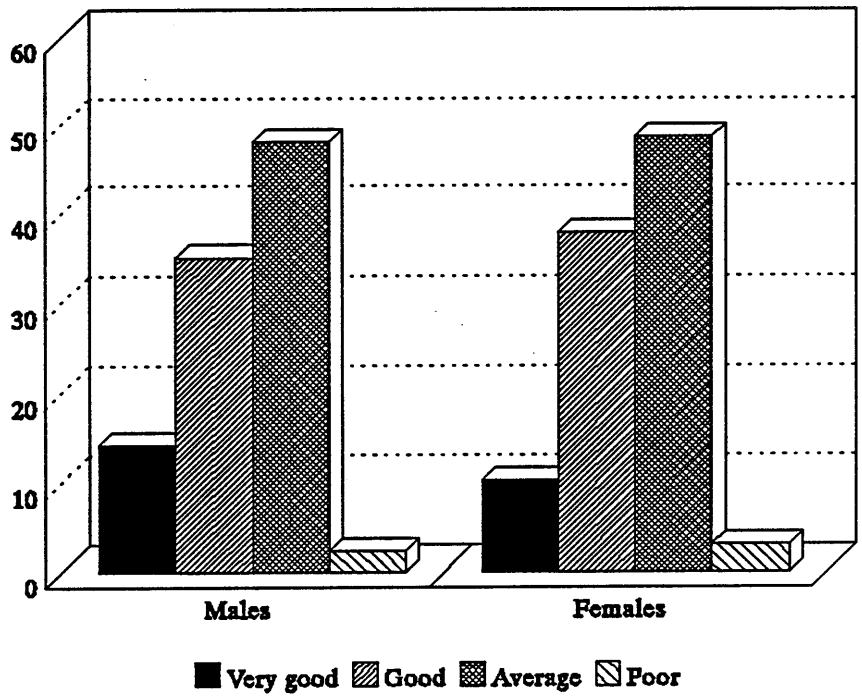
# TABLE 9.1

## Self-perception of state of health by Inuit individuals aged 15 years and over, according to age and sex (%) [Inuit, 1992]

| AGE GROUP - SEX | PERCEIVED STATE OF HEALTH | | | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | VERY GOOD | | GOOD | | AVERAGE | | POOR | | | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Total | 12.4 | 502 | 36.5 | 1,485 | 48.4 | 1,967 | 2.7 | 109 | 100 | 4,063 |
| Males | 14.3 | 299 | 35.2 | 739 | 48.1 | 1,010 | 2.4 | 49 | 100 | 2,097 |
| Females | 10.3 | 203 | 37.9 | 746 | 48.7 | 957 | 3.1 | 60 | 100 | 1,966 |
| Age group | | | | | | | | | | |
| 15-19 years / Total | 10.7 | 85 | 31.7 | 251 | 56.6 | 448 | 1.0 | 7 | 100 | 791 |
| Males | 15.2 | 62 | 31.4 | 129 | 53.4 | 219 | 0.0 | 0 | 100 | 410 |
| Females | 6.0 | 23 | 32.1 | 122 | 60.0 | 229 | 1.9 | 7 | 100 | 381 |
| 20-24 years / Total | 11.9 | 79 | 39.3 | 260 | 47.7 | 316 | 1.1 | 7 | 100 | 662 |
| Males | 14.4 | 48 | 29.6 | 99 | 53.8 | 180 | 2.2 | 7 | 100 | 334 |
| Females | 9.4 | 31 | 49.1 | 161 | 41.5 | 136 | 0.0 | 0 | 100 | 328 |
| 25-44 years / Total | 13.8 | 236 | 43.1 | 738 | 41.4 | 710 | 1.7 | 29 | 100 | 1,713 |
| Males | 14.2 | 128 | 46.2 | 416 | 37.7 | 341 | 1.9 | 17 | 100 | 902 |
| Females | 13.3 | 108 | 39.7 | 322 | 45.5 | 369 | 1.5 | 12 | 100 | 811 |
| 45 years + / Total | 11.4 | 102 | 26.3 | 236 | 54.9 | 493 | 7.4 | 66 | 100 | 897 |
| Males | 13.5 | 60 | 21.1 | 95 | 59.8 | 270 | 5.6 | 25 | 100 | 450 |
| Females | 9.4 | 42 | 31.4 | 141 | 50.0 | 223 | 9.2 | 41 | 100 | 447 |

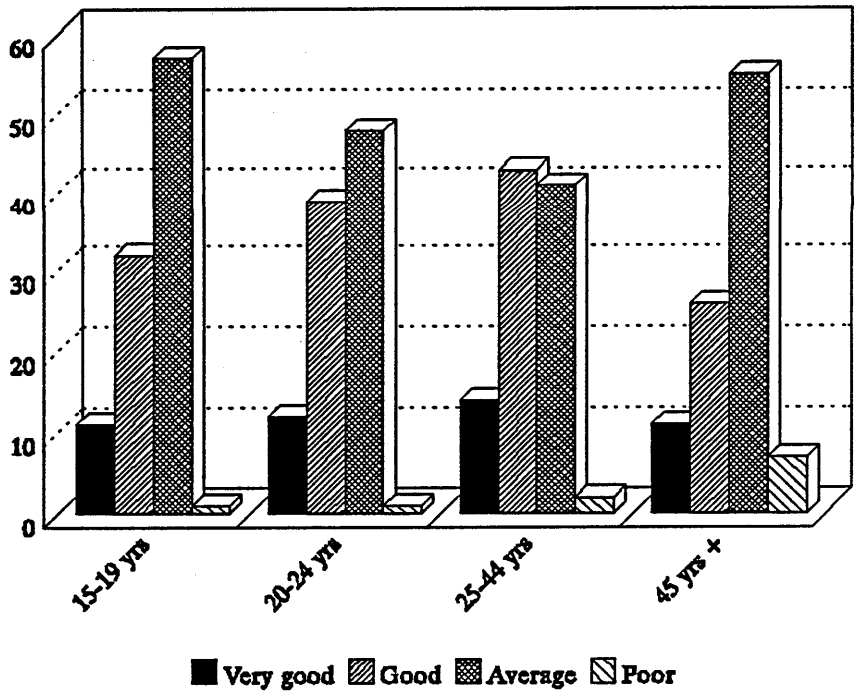
## GRAPH 9.1

**Self-perception of state of health by Inuit individuals aged 15 years and over, according to sex (%) [Inuit, 1992]**



## GRAPH 9.2

**Self-perception of state of health by Inuit individuals aged 15 years and over, according to age (%) [Inuit, 1992]**




## 9.2.2 Satisfaction with state of health

Almost a third of the Inuit population (31 %) was very satisfied, and more than half (52 %) fairly satisfied with their state of health (Table 9.2). The proportion of those who were « not at all satisfied » was very low (2,0 %) and was grouped together with the « not very satisfied » responses to create a category entitled « dissatisfied ».

Table 9.2 shows that almost twice as many women (22 %) as men (12 %) were dissatisfied with their state of health. However, the proportion of women very satisfied was greater (34 % vs 29 %).

The degree of satisfaction was also found to be related to age. However, contrary to what one might expect, proportionately more individuals aged 45 years and over than young people aged 15 to 19 years (43 % vs 27 %) reported being very satisfied with their state of health.

As expected, satisfaction with state of health was on a par with perceived health, along with the number of chronic problems. In effect, there were more people satisfied with their health when it was better, and less when it was average or poor (Graph 9.3). Similarly, people suffering from at least one chronic health problem were more likely to be dissatisfied with their health (21 % vs 12 %) (Graph 9.4) than those declaring no problem.

The Inuit in Sector IV were clearly more satisfied with their health than those in Sector III (40 % very satisfied vs 21 %). Those in Sector V classified themselves as half-way between (31 % very satisfied) (Graph 9.5).

Moreover, the degree of satisfaction with one's state of health was examined in the light of various sociodemographic or lifestyle characteristics. The results indicated that regular smokers were the most dissatisfied with their state of health (19 %) whereas nonsmokers were proportionally the most satisfied (41 %).

The Inuit population was much less satisfied with their state of health than Quebecers and slightly less so than the Cree (Table 9.3). Almost twice as many Inuit as Quebecers were dissatisfied[1] (17 % vs 9 %) and fewer Inuit than Cree very satisfied with their state of health (31 % vs 38 %).

(1) The « dissatisfied » category groups Inuit « not too satisfied » and « not at all satisfied ».

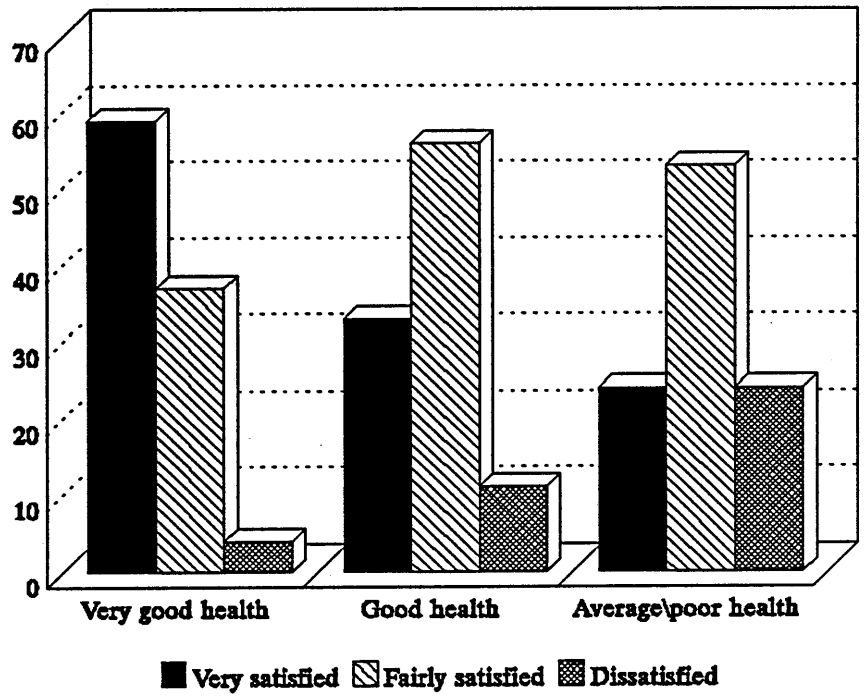
# TABLE 9.2

## Degree of satisfaction with state of health expressed by Inuit individuals aged 15 years and over, according to age and sex (%) [Inuit, 1992]

| AGE GROUP - SEX | DEGREE OF SATISFACTION OF STATE OF HEALTH | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | VERY SATISFIED | | FAIRLY SATISFIED | | DISSATISFIED | | | |
| | % | Ep | % | Ep | % | Ep | % | Ep |
| Total | 31.2 | 1,245 | 52.0 | 2,070 | 16.8 | 671 | 100 | 3,985 |
| Males | 29.0 | 594 | 59.3 | 1,212 | 11.7 | 240 | 100 | 2,046 |
| Females | 33.5 | 651 | 44.2 | 858 | 22.3 | 430 | 100 | 1,939 |
| Age group | | | | | | | | |
| 15-19 years / Total | 26.5 | 209 | 53.0 | 418 | 20.5 | 162 | 100 | 789 |
| Males | 24.1 | 95 | 64.3 | 253 | 11.6 | 46 | 100 | 394 |
| Females | 28.8 | 114 | 41.8 | 165 | 29.4 | 116 | 100 | 395 |
| 20-24 years / Total | 18.9 | 118 | 63.1 | 394 | 18.0 | 112 | 100 | 624 |
| Males | 12.2 | 39 | 73.8 | 232 | 14.0 | 44 | 100 | 315 |
| Females | 25.7 | 79 | 52.1 | 162 | 22.2 | 68 | 100 | 309 |
| 25-44 years / Total | 31.8 | 528 | 53.9 | 897 | 14.3 | 237 | 100 | 1,662 |
| Males | 28.4 | 249 | 60.5 | 531 | 11.1 | 98 | 100 | 878 |
| Females | 35.5 | 279 | 46.7 | 366 | 17.8 | 139 | 100 | 784 |
| 45 years + / Total | 42.9 | 390 | 39.6 | 361 | 17.5 | 159 | 100 | 910 |
| Males | 46.0 | 211 | 42.8 | 196 | 11.2 | 52 | 100 | 459 |
| Females | 39.7 | 179 | 36.4 | 165 | 23.9 | 107 | 100 | 451 |

## GRAPH 9.3

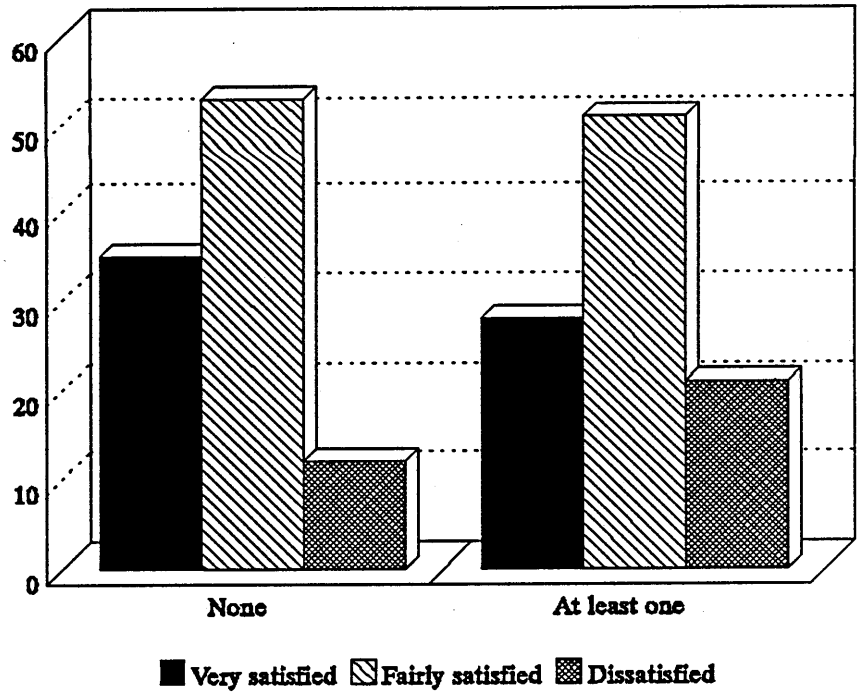
**Degree of satisfaction with state of health expressed by Inuit individuals aged 15 years and over, in accordance with self-evaluation (%) [Inuit, 1992]**




p = 0.0000

## GRAPH 9.4

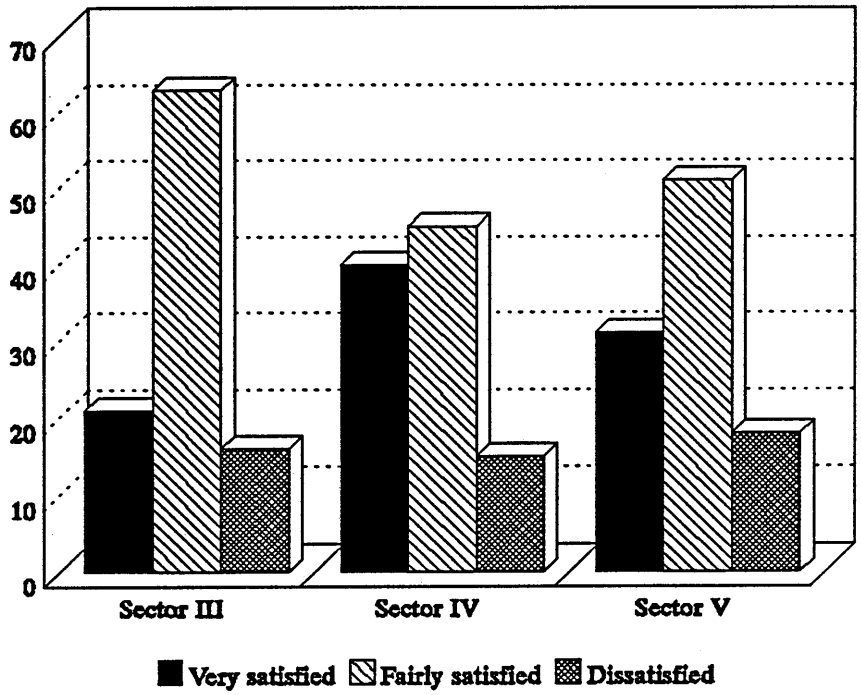
**Degree of satisfaction with state of health expressed by Inuit individuals aged 15 years and over, according to number of reported health problems (%) [Inuit, 1992]**




p = 0.00643

## GRAPH 9.5

**Degree of satisfaction with state of health expressed by Inuit individuals aged 15 years and over, according to sector of residence (%) [Inuit, 1992]**




p = 0.00575

## TABLE 9.3

**Degree of satisfaction with state of health among the Inuit, Cree (1991) and Quebecers (1987) aged 15 years and over (%) [Inuit, 1992]**

| DEGREE OF SATISFACTION | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Very satisfied | 31.2 | 1,244 | 38.1 | 2,269 | 42.3 | 2,147,531 |
| Fairly satisfied | 51.9 | 2,069 | 45.5 | 2,710 | 48.7 | 2,469,708 |
| Not very satisfied | 14.9 | 589 | 15.2 | 907 | 7.3 | 368,951 |
| Not at all satisfied | 2.0 | 82 | 1.2 | 72 | 1.7 | 87,439 |
| TOTAL | 100 | 3,984 | 100 | 5,958 | 100 | 5,073,629 |

## 9.3 PERCEIVED HAPPINESS

The majority of the Inuit population aged 15 and over was either fairly happy (68 %) or very happy (18 %) (table 9.4). Women described themselves as less happy than men ; indeed one in five reported being unhappy (18 %) compared with one in ten men (10 %).

Perception of happiness varied according to age group : people aged 45 and over seemed to be the happiest while youth in the 20-24 age group were the least happy (table 9.4).

People living as couples (married or not) were apparently less unhappy (only 12 % were « not very happy ») than singles (19 %) or people who were either divorced/separated (20 %) or widowed (15 %) (Graph 9.6 ).

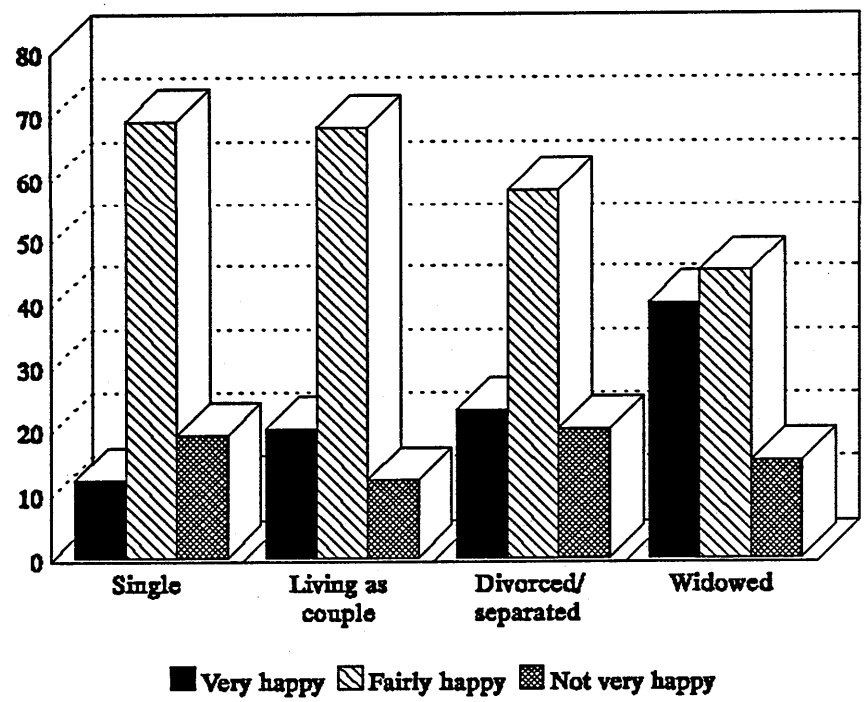
# TABLE 9.4

## Perception of happiness among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]

| AGE GROUP - SEX | DEGREE OF PERCEIVED HAPPINESS | | | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | VERY HAPPY | | FAIRLY HAPPY | | NOT VERY HAPPY | | | |
| | % | Ep | % | Ep | % | Ep | % | Ep |
| Total | 18.3 | 729 | 67.6 | 2,695 | 14.1 | 562 | 100 | 3,986 |
| Males | 18.6 | 388 | 71.1 | 1,477 | 10.3 | 213 | 100 | 2,078 |
| Females | 17.9 | 341 | 63.8 | 1,218 | 18.3 | 349 | 100 | 1,908 |
| Age group | | | | | | | | |
| 15-19 years / Total | 17.7 | 143 | 58.6 | 472 | 23.7 | 191 | 100 | 806 |
| Males | 17.6 | 76 | 63.5 | 274 | 18.9 | 81 | 100 | 431 |
| Females | 18.0 | 67 | 52.8 | 198 | 29.2 | 110 | 100 | 375 |
| 20-24 years / Total | 8.0 | 50 | 74.6 | 469 | 17.4 | 109 | 100 | 628 |
| Males | 7.6 | 24 | 85.9 | 268 | 6.5 | 20 | 100 | 312 |
| Females | 8.4 | 26 | 63.5 | 201 | 28.1 | 89 | 100 | 316 |
| 25-44 years / Total | 19.8 | 328 | 72.2 | 1,195 | 8.0 | 133 | 100 | 1,656 |
| Males | 20.6 | 183 | 72.1 | 642 | 7.3 | 65 | 100 | 890 |
| Females | 18.9 | 145 | 72.2 | 553 | 8.9 | 68 | 100 | 766 |
| 45 years + / Total | 23.2 | 208 | 62.3 | 559 | 14.4 | 129 | 100 | 896 |
| Males | 23.5 | 105 | 65.9 | 293 | 10.6 | 47 | 100 | 445 |
| Females | 23.0 | 103 | 58.9 | 266 | 18.2 | 82 | 100 | 451 |

## GRAPH 9.6

**Perception of happiness among the Inuit aged 15 years and over, according to marital status (%) [Inuit, 1992]**




p = 0.0019

Self-perception in terms of very good health seemed to go hand in hand with being happy : half of the Inuit that considered themselves to be in very good health also considered themselves very happy, and the other half fairly happy. At the other extreme, those whose health was average or poor seemed to be the most unhappy (Graph 9.7).

## GRAPH 9.7

**Perception of happiness among the Inuit aged 15 years and over, assessed in accordance with self-evaluation (%) [Inuit, 1992]**


p = 0.0000

Finally, perceived happiness did appear to be linked to various lifestyle habits such as cigarette smoking, marijuana or hashish consumption, and physical activities in the village. Perceived happiness was not associated with alcohol consumption.

# CHAPTER 9 - SECTION II

# REPORTED HEALTH PROBLEMS

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## 9.4 SCOPE AND LIMITS OF DATA

Evaluation of the Inuit state of health was based upon data collected from the Household Questionnaire. Questions on chronic illnesses, limitation of activities, health care utilization, use of medication, as well as prevalence and types of injuries were asked of a third party (a primary respondent) who reported on behalf of all members of the household regardless of age. The data therefore estimates the health problems in the Inuit population including those in children under the age of 15 years. The reported conditions were those perceived by the primary respondent as being currently experienced and could be either acute or chronic in nature.

Third-person reporting in health surveys is widely recognized as a valid and reliable method of obtaining data on household state of health (Mosely and Wolinsky, 1986). One limitation, however, is that reported conditions may or may not have been diagnosed by a health care professional. Another is that specific symptoms, conditions or disabilities would tend to be underestimated.

To partially counteract this, data on two particular health problems of interest, namely diabetes and hypertension, obtained from the Individual Questionnaire, was combined with the information provided by the primary respondent in the Household Questionnaire. Given that this was done for only two health conditions (i.e. diabetes, hypertension) and referred only to individuals 15 years of age and over does, however, limit the completeness of the data. Though this procedure was not applied to findings from the 1987 Santé Québec master survey, comparisons between the studies have been made.

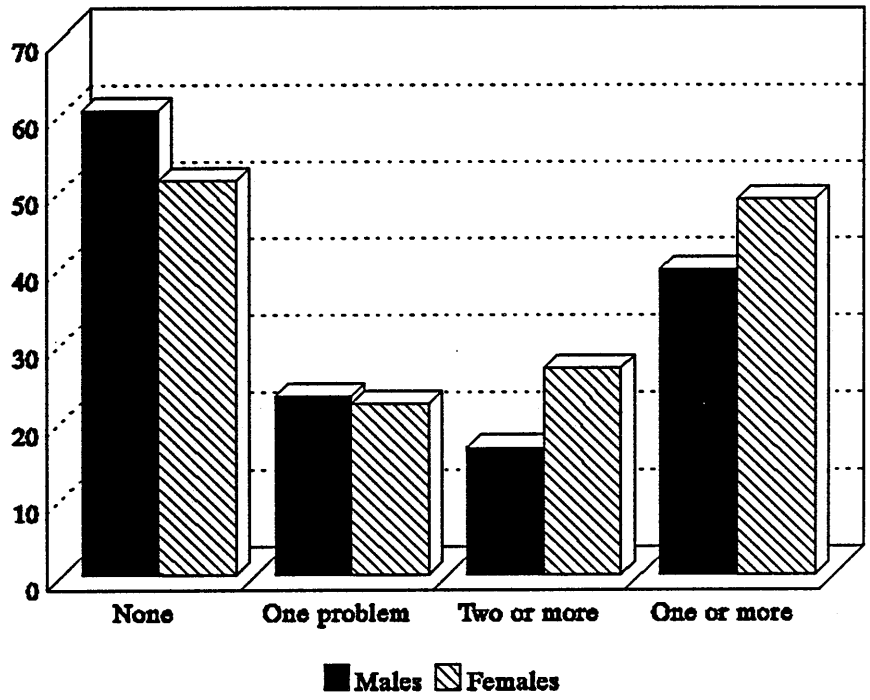
Finally, a special section on hearing problems which did not appear in the 1987 master survey was included in this study. Comparisons were obviously not possible.

## 9.5 RESULTS

In the Inuit population, 44 % reported at least one health problem during the two weeks before the survey. This occurred more frequently among women than among men (49 % vs 40 %) (Graph 9.8). Furthermore, women reported more health problems than men.

## GRAPH 9.8

**Number of health problems reported by Inuit population according to sex (%) [Inuit, 1992]**




The proportion of individuals reporting at least one health problem increased with age, from 29 % among those under 15 years of age to 78 % among those 45 years old and over (Table 9.5). In all age groups starting at age 15 years, women reported significantly more problems (at least one) than men. For those of both sexes under 15 years of age, answers were similar (also Graph 9.9).

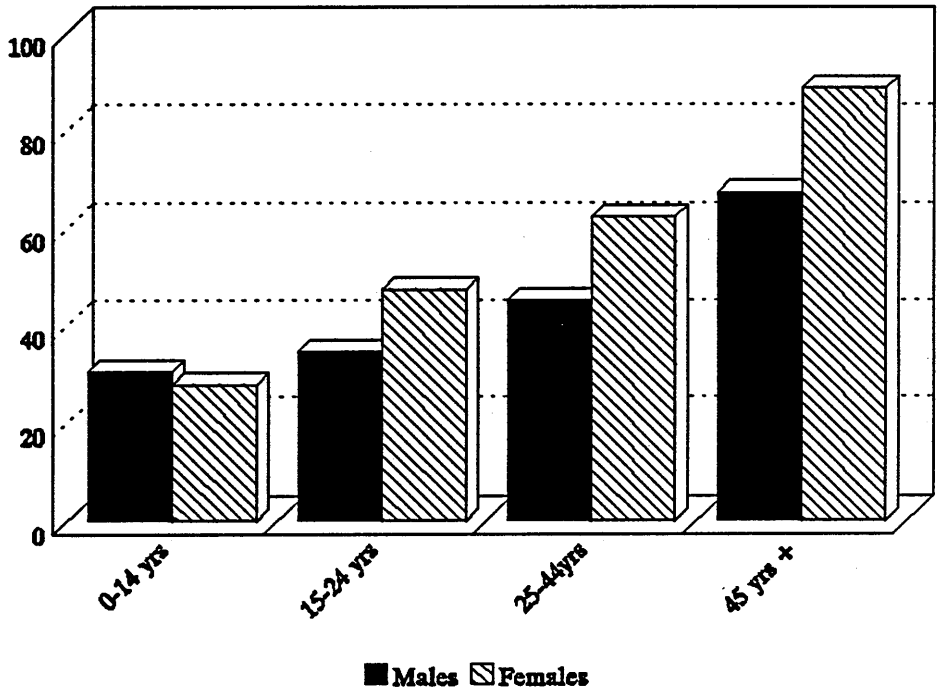
# TABLE 9.5

## Number of health problems reported by Inuit population aged 15 years and over, according to age and sex (%) [Inuit, 1992]

| AGE GROUP - SEX | NUMBER OF HEALTH PROBLEMS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NO PROBLEM | | ONE PROBLEM | | TWO OR MORE | | AT LEAST ONE PROBLEM | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Total | 55.9 | 3,960 | 22.7 | 1,601 | 21.4 | 1,516 | 44.1 | 3,117 | 100 | 7,078 |
| Males | 60.4 | 2,215 | 23.1 | 848 | 16.5 | 605 | 39.6 | 1,453 | 100 | 3,669 |
| Females | 51.2 | 1,745 | 22.1 | 753 | 26.7 | 911 | 48.8 | 1,664 | 100 | 3,409 |
| Age group | | | | | | | | | | |
| 0-14 years / Total | 70.9 | 2,031 | 20.8 | 597 | 8.3 | 239 | 29.1 | 836 | 100 | 2,867 |
| Males | 69.6 | 1,055 | 22.3 | 338 | 8.2 | 124 | 30.4 | 462 | 100 | 1,517 |
| Females | 72.3 | 976 | 19.2 | 259 | 8.5 | 115 | 27.7 | 374 | 100 | 1,350 |
| 15-24 years / Total | 59.0 | 925 | 21.6 | 338 | 19.4 | 305 | 41.0 | 643 | 100 | 1,568 |
| Males | 65.4 | 513 | 20.8 | 163 | 13.8 | 108 | 34.6 | 271 | 100 | 785 |
| Females | 52.6 | 412 | 22.3 | 175 | 25.1 | 197 | 47.4 | 372 | 100 | 783 |
| 25-44 years / Total | 46.7 | 799 | 24.5 | 420 | 28.8 | 492 | 53.3 | 912 | 100 | 1,710 |
| Males | 54.7 | 496 | 24.0 | 218 | 21.3 | 193 | 45.3 | 411 | 100 | 907 |
| Females | 37.7 | 303 | 25.1 | 202 | 37.2 | 299 | 62.3 | 501 | 100 | 803 |
| 45 years + / Total | 21.9 | 204 | 26.5 | 246 | 51.6 | 482 | 78.1 | 728 | 100 | 932 |
| Males | 32.7 | 150 | 28.1 | 129 | 39.2 | 181 | 67.3 | 310 | 100 | 460 |
| Females | 11.4 | 54 | 24.9 | 117 | 63.7 | 301 | 88.6 | 418 | 100 | 472 |

## GRAPH 9.9

**Proportion of Inuit having reported at least one health problem, according to age and sex (%) [Inuit, 1992]**




The perception of state of health appeared closely linked with the presence of health problems (Table 9.6). Also, there were proportionally more people affected by one or more health problems than people who described their state of health as average or poor (59 % vs 41 %).

## TABLE 9.6

**Number of health problems reported by Inuit Individuals aged 15 years and over, according to their level of satisfaction with their state of health (%) [Inuit, 1992]**

| LEVEL OF SATISFACTION | NUMBER OF HEALTH PROBLEMS | | | | | |
|---|---|---|---|---|---|---|
| | NONE | | AT LEAST ONE | | TOTAL | |
| | % | Ep | % | Ep | % | Ep |
| Very good or good | 49.3 | 980 | 50.7 | 1,007 | 100 | 1,987 |
| Poor or average | 40.7 | 845 | 59.3 | 1,231 | 100 | 2,076 |
| TOTAL | 44.9 | 1,825 | 55.1 | 2,238 | 100 | 4,063 |

p = 0.3

Those who reported more health problems were fairly inactive in the labour market (e.g., homemakers or were inactive owing to health or other considerations). Similarly, the absence or low rate of participation in leisure or village activities were significantly linked to the presence of reported health problems.

As an exploratory measure, a **comparative index** of health problems was calculated based upon the Inuit data. However, to reduce the effect of age, the Cree or Québec population was used as a reference. Therefore, as shown in Table 9.7, the Inuit reported as many health problems as the Cree. However, the Inuit, like the Cree reported fewer health problems than Quebecers as a whole in 1987. The lower incidence of such statements among the Inuit was mainly attributable to men. Two hypotheses could explain this phenomenon : the first is that men were in better health ; the second, and the more probable of the two, is that Nunavik women -- having been the principal respondent for 83 % of household cases -- would have reported fewer health problems among men because they would have been less aware of them.

## TABLE 9.7

**Standardized comparative index of health problems reported by the Inuit, the Cree (1991) the Quebecers (1987), according to age and sex (index) (%) [Inuit, 1992]**

| SEX | COMPARATIVE INUIT/CREE INDEX | | |
|---|---|---|---|
| | NO PROBLEM | ONE PROBLEM | TWO OR MORE |
| Males | 1.00 | 0.99 | 0.99 |
| Females | 1.04 | 0.87 | 1.04 |
| TOTAL | 1.02 | 0.93 | 1.02 |
| | COMPARATIVE INUIT/1987 SQS INDEX | | |
| | NO PROBLEM | ONE PROBLEM | TWO OR MORE |
| Males | 1.11* | 0.86 | 0.88 |
| Females | 1.06 | 0.84 | 1.04 |
| TOTAL | 1.09* | 0.85** | 0.97 |

* $p < 0.05$ ** $p < 0.01$

## 9.6 NATURE AND PREVALENCE[1] OF HEALTH PROBLEMS

Apart from specific hearing problems such as otitis or deafness, hearing impairments represented the most frequently occurring health problems reported by the Inuit. As shown in Table 9.8, 12 % of the population was affected. In decreasing order, the other most frequently occurring health problems were : respiratory-tract diseases (8 %), headaches (8 %) and mental health problems (7 %). The eight most prevalent health problems represent more than half of all reported problems.

(1) This prevalence was established based upon a comparative index. It would be more accurate to address the issue in terms of indicators.

# TABLE 9.8

## Prevalence of health problems reported during last two weeks by Inuit population and comparative index of such problems for the Inuit, the Cree (1991) and Quebecers (1987) according to sex (%) [Inuit, 1992]

| HEALTH PROBLEMS | MALES | | FEMALES | | TOTAL | | INDEX | INDEX |
|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | SQSI/ SQSC | SQS 87 |
| Hearing problems | 14.0 | 515 | 10.7 | 364 | 12.4 | 879 | 1.48** | NAP |
| Diseases of respiratory tract | 7.4 | 270 | 9.1 | 310 | 8.2 | 580 | 1.16 | 1.09 |
| Headaches | 4.5 | 163 | 11.1 | 379 | 7.7 | 542 | 1.27* | 1.18 |
| Mental health problems | 2.3 | 84 | 12.6 | 429 | 7.3 | 513 | 4.00** | 1.53** |
| Allergies | 3.8 | 140 | 7.0 | 239 | 5.3 | 379 | 0.74* | 0.48** |
| Hypertension[1] | 3.5 | 129 | 6.9 | 237 | 5.2 | 366 | 0.62** | 1.65** |
| Cutaneous allergies and other infections | 3.9 | 144 | 5.6 | 190 | 4.7 | 334 | 1.12 | 0.58** |
| Other problems | 4.0 | 147 | 5.0 | 169 | 4.5 | 316 | 0.35** | 0.22** |
| Back problems | 4.3 | 158 | 4.6 | 157 | 4.5 | 315 | 0.97 | 0.86 |
| Arthritis and rheumatism | 3.2 | 118 | 4.8 | 164 | 4.0 | 282 | 0.74* | 0.71* |
| Diabetes[1] | 1.4 | 51 | 5.9 | 202 | 3.6 | 253 | 0.72* | 4.01** |
| Bone and joint problems | 3.2 | 118 | 3.7 | 126 | 3.5 | 244 | 9.89** | 2.27** |
| Digestive problems | 2.4 | 88 | 4.5 | 152 | 3.4 | 240 | 1.13 | 0.84 |
| Anaemia | 2.0 | 75 | 3.7 | 128 | 2.9 | 203 | 2.03** | 3.01** |
| Thyroid problems | 1.2 | 43 | 3.1 | 104 | 2.1 | 147 | 1.77** | 2.89** |
| Heart disease | 1.4 | 52 | 2.4 | 82 | 1.9 | 134 | 0.91 | 0.86 |
| Urinary problems | 1.1 | 40 | 2.3 | 79 | 1.7 | 119 | 1.33 | NAP |
| Gastric and duodenum ulcers | 1.8 | 64 | 1.3 | 43 | 1.5 | 107 | 1.49 | 1.43 |

1 This data was obtained by imputation.
* $p < 0.05$ ** $p < 0.01$

The prevalence of hearing problems was slightly higher among men than women (14 % vs 11 %). Moreover, if we exclude illnesses of the respiratory tract that affected as many men as women, the health profile of the Inuit then showed a greater incidence of problems reported among women such as mental health problems (five times more prevalent among women than men) and headaches (almost three times more frequent among women than men). In this survey, mental health problems encompassed depression, periods of excessive nervousness, irritability, confusion, frequent loss of memory, or periods of six months or longer of having visions, hearing voices or being subject to irrational fears.

Some differences were noted between the Cree and the Inuit (Table 9.8). The latter reported fewer cases of diabetes (comparative index = 0.7), allergies (0.7), arthritis and rheumatism (0.7), hypertension (0.6), and many fewer instances of other problems (0.4). However, compared with the Cree, the Inuit were more likely to report diseases of the bones and joints (9.9), mental-health problems (4.0), anaemia (2.0), thyroid problems (1.8), hearing problems (1.5) and headaches (1.3). Note that these last two problems could be interrelated for the Inuit as headaches could include hearing problems which are both localized in the head.[1]

Compared with the 1987 health profile of Quebecers as a whole, that of the Inuit showed differences with respect to certain problems. Bone and joint diseases (2.3), anaemia (3.0), thyroid problems (2.9), and mental health problems (1.5) were more frequently reported by the Inuit than by Quebecers. This divergence, however, proved generally different than that between the Inuit and the Cree. The difference between the Inuit and Quebecers was lesser for bone and joint diseases, as well as for mental health problems, whereas it was greater for anaemia and thyroid problems. However, while hypertension was reported less frequently among the Inuit than the Cree (0.6), the problem was actually more prevalent when compared with figures for Québec as a whole (1.7). The same was true for diabetes (Inuit/Cree = 0.7 and Inuit/SQS 87 = 4.0). Furthermore, compared with Quebecers, the Inuit reported fewer cutaneous allergies and other diseases (0.6), allergies in general (0.5), arthritis and rheumatism (0.7), as well as other general health problems (0.2).

One very important fact merits emphasis : among the Inuit, bone and joint diseases have proven to be ten times more frequent than among the Cree, and twice as often than among Quebecers. Mental health problems, anaemia, and thyroid problems also constituted problems more frequently reported by the Inuit than by other reference populations. Hearing problems were more frequently reported by the Inuit than by the Cree, as were headaches. Lastly, hypertension seemed more widespread among the Inuit than among Quebecers and diabetes four times more prevalent.

(1) Hypotheses of the like as well as others which may appear in this report are based upon close follow-up of data collected and ongoing exchange with representatives of health care professionals in Nunavik.

Further research would make it possible to better understand and explain these sometimes surprising variations. It would also make it possible to better document the methodological limits owing to cultural differences, especially the problems involved in translating and understanding medical concepts.

### 9.6.1 Health Problems Among Youth 15 Years and Under[1]

More than a quarter of Inuit youth under 15 years of age (29 %) suffered from at least one health problem (Table 9.5). Among all the problems reported, the most frequent were hearing problems (9 %), diseases of the respiratory tract diseases (8 %), cutaneous allergies and other infections (5 %), and allergies (4 %). No important differences were found between boys and girls of this age group (Table 9.9). According to clinical observations among the Inuit, and especially among the Cree, health care professionals in northern Québec suspected a relation between these health problems and allergies, upper respiratory tract problems, and otitis.

Compared with young Cree, information reported on young Inuit showed that hearing problems were more common (9 % vs 6%). Allergies, however, were less widespread among Inuit than among young Cree (4 % vs 6 %) and young Quebecers in general (4 % vs 9 %). Lastly, cutaneous allergies and other diseases (5 % vs 8 %) were less reported among the Inuit than among Quebecers (5 % vs 8 %).

(1) Refer to Appendix 1, Table A.9.1 for an exhaustive list of the health problems affecting Inuit youth aged 0 to 14 years.

# TABLE 9.9

## Prevalence of ten main health problems among Inuit youth aged 15 years and under and comparison of ratios for the Inuit, the Cree (1991) and Quebecers (1987) in same age group, according to sex (%) [Inuit, 1992]

| HEALTH PROBLEM | MALES | | FEMALES | | TOTAL | | SQSC | | SQS 87 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Hearing problems | 8.7 | 132 | 9.6 | 129 | 9.1 | 261 | 5.7 | 185 | NAP | NAP |
| Diseases of respiratory tract | 9.0 | 136 | 6.1 | 82 | 7.6 | 218 | 9.9 | 320 | 9.9 | 131,722 |
| Cutaneous allergies and other diseases | 4.7 | 71 | 4.4 | 59 | 4.5 | 130 | 6.1 | 199 | 8.4** | 112,645 |
| Allergies | 4.0 | 61 | 4.0 | 53 | 4.0 | 114 | 6.4** | 209 | 8.9** | 118,124 |
| Thyroid problems | 1.7 | 26 | 2.1 | 29 | 1.9 | 55 | 0.3** | 11 | 0.2** | 2,085 |
| Anaemia | 2.1 | 32 | 1.4 | 19 | 1.8 | 51 | 1.6 | 51 | 0.4** | 4,868 |
| Digestive problems | 1.7 | 25 | 1.7 | 22 | 1.7 | 47 | 0.6 | 19 | 1.9 | 24,922 |
| Headaches | 1.2 | 19 | 2.0 | 26 | 1.6 | 45 | 1.4 | 44 | 1.6 | 21,919 |
| Bone and joint problems | 2.0 | 30 | 0 | 0 | 1.1 | 30 | 0 | 0 | 0.4 | 4,931 |
| Mental health problems | 0 | 0 | 2.2 | 30 | 1.1 | 30 | 1.1 | 37 | 1.1 | 14,030 |

* $p < 0.05$ ** $p < 0.01$

## 9.6.2 Health Problems Among Adolescents and Young Adults (15-24 Years)[1]

In the 15-24 age group, 41 % of Inuit reported at least one health problem (Table 9.5). Hearing impairments were the most common (15 %), followed by headaches (8 %), hypertension (7 %), mental health problems (5 %), and diabetes (5 %).[2] Except for hearing problems which affected more men, women in this age group were more affected by other types of problems (Table 9.10).

### TABLE 9.10

**Prevalence of ten main health problems among Inuit youth aged between 15 and 24 years and comparison of ratios for the Inuit, the Cree (1991) and Quebecers (1987) in same age group, according to sex (%) [Inuit, 1992]**

| HEALTH PROBLEM | MALES | | FEMALES | | TOTAL | | SQSC | | SQS 87 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Hearing problems | 20.6 | 162 | 8.9 | 69 | 14.8 | 231 | 5.3** | 119 | 0.6 | 6,436 |
| Headaches | 4.4 | 34 | 12.4 | 97 | 8.4 | 131 | 6.5 | 145 | 7.4 | 75,429 |
| Hypertension[1] | 3.6 | 28 | 10.6 | 83 | 7.1 | 111 | 5.4[1] | 120 | 0.5** | 5,485 |
| Mental health problems | 1.2 | 10 | 9.7 | 76 | 5.4 | 86 | 1.1** | 25 | 3.4 | 34,183 |
| Diabetes[1] | 1.1 | 9 | 9.5 | 75 | 5.3 | 84 | 2.9*[1] | 64 | 0.3** | 3,431 |
| Diseases of respiratory tract | 2.7 | 21 | 6.8 | 53 | 4.7 | 74 | 3.9 | 87 | 6.1 | 62,116 |
| Allergies | 3.1 | 24 | 6.1 | 47 | 4.6 | 71 | 7.5* | 168 | 15.7 | 159,385 |
| Cutaneous allergies and other diseases | 1.8 | 14 | 3.8 | 30 | 2.8 | 44 | 3.1 | 69 | 8.7 | 88,568 |
| Thyroid problems | 1.0 | 8 | 4.5 | 35 | 2.7 | 43 | 0.2** | 4 | 0.2** | 2,240 |
| Anaemia | 0 | 0 | 4.5 | 35 | 2.3 | 35 | 1.6 | 36 | 0.9 | 8,648 |

1 This data was obtained by imputation for the Cree and Inuit surveys only.
* $p < 0.05$ ** $p < 0.01$

(1) Refer to Appendix 1, Table A.9.1 for an exhaustive list of the health problems affecting Inuit youth aged 15 to 24 years.

(2) Note that a significant portion of this ratio could reflect diabetes during pregnancy which is more prevalent among young Inuit women.

Compared with Cree of the same age, Inuit in the 15-24 age group reported considerably more mental health problems (5 % and 1 %), hearing problems (15 % and 5 %) and diabetes (5 % and 3 %). Compared with the 1987 data for all Quebecers, diabetes was also more widespread (diabetes : 5 % and 0.3 %), as well as hypertension (7 % vs 1 %). Moreover, as with the preceding age group, allergies were less common among the Inuit than among the two other populations (5.8 % and 16 %).

## 9.6.3 Health Problems Among Adults Aged 25 To 44 Years[1]

More than half (53 %) of those in the 25-44 age group reported at least one health problem (Table 9.5). As shown in Table 9.11, the most prevalent problems were headaches (13 %), mental health problems (12 %), hearing problems (10 %), allergies (8 %), and hypertension (7 %). Except for backaches, women were more likely to report these health problems.

### TABLE 9.11

**Prevalence of ten main health problems among Inuit aged between 25 and 44 years and comparison of ratios for the Inuit, the Cree (1991) and Quebecers (1987) in same age group, according to sex (%) [Inuit, 1992]**

| HEALTH PROBLEM | MALES | | FEMALES | | TOTAL | | SQSC | | SQS 87 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Headaches | 7.9 | 72 | 17.7 | 142 | 12.5 | 214 | 10.7 | 248 | 13.1 | 286,474 |
| Mental health problems | 5.0 | 46 | 19.9 | 160 | 12.0 | 206 | 2.3** | 54 | 6.8 | 149,591 |
| Hearing problems | 8.6 | 78 | 11.4 | 92 | 9.9 | 170 | 8.2 | 191 | 0.6 | 13,348 |
| Allergies | 4.8 | 43 | 11.6 | 93 | 8.0 | 136 | 8.7 | 202 | 13.1 | 288,079 |
| Hypertension[1] | 5.0 | 46 | 9.6 | 77 | 7.2 | 123 | 12.5[1] | 291 | 2.2 | 47,782 |
| Backaches | 7.6 | 69 | 5.4 | 43 | 6.6 | 112 | 7.9 | 184 | 10.4 | 228,282 |
| Diseases of respiratory tract | 4.3 | 39 | 7.9 | 64 | 6.0 | 103 | 5.1 | 118 | 4.7 | 103,377 |
| Arthritis or rheumatism | 5.3 | 48 | 6.0 | 48 | 5.7 | 96 | 6.0 | 140 | 6.4 | 140,503 |
| Cutaneous allergies and other diseases | 3.3 | 30 | 7.2 | 58 | 5.2 | 88 | 3.1* | 72 | 8.6 | 189,339 |
| Digestive problems | 4.4 | 40 | 5.8 | 46 | 5.0 | 86 | 5.3 | 122 | 5.6 | 122,814 |

1 This data was obtained by imputation for the Cree and Inuit surveys only.
* $p < 0.05$ ** $p < 0.01$

(1) Refer to Appendix 1, Table A.9.1 for an exhaustive list of the health problems affecting Inuit youth aged 25 to 44 years.

Compared with the Cree and Quebecers, the only significant differences were found in the high proportion of mental health problems reported by the Inuit. The prevalence of hypertension was higher among the latter than for Quebecers of the same age group and nearly half of that reported by the Cree.

### 9.6.4 Health Problems Among Individuals aged 45 Years and Over[1]

Once more, as previously shown (Table 9.5), three quarters of adults aged 45 years and over reported at least one health problem (78 %), and in this group, more than half (52 %) reported two or more. Hearing problems were the most prevalent for this age group (23 %), followed by mental health problems (21 %), diseases of the respiratory tract (20 %), backaches (18 %), and arthritis or rheumatism (17 %) (Table 9.12). Except for hearing problems, women were more likely to report health problems.

The fact that hearing problems were more frequently reported in this age group may be owing to excessive exposure to noise (e.g., firearms, snowmobiles and ATVs).

Comparisons between the Inuit and the Cree revealed that mental health problems, diseases of the respiratory tract, headaches, as well as osteoarticular diseases were common problems among the Inuit of this age group. However, arthritis and rheumatism, as well as hypertension and diabetes, were less common among the Inuit than the Cree. Compared with Santé Québec 1987 survey data, the same differences were found with two noteworthy exceptions : mental health problems and backaches were reported more frequently among the Inuit.

(1) Refer to Appendix 1, Table A.9.1 for an exhaustive list of the health problems affecting Inuit aged 45 years and over.

# TABLE 9.12

## Prevalence of ten main health problems among Inuit aged 45 years and over and comparison of ratios for the Inuit, the Cree (1991) and Quebecers (1987) in same age group, according to sex (%) [Inuit, 1992]

| HEALTH PROBLEM | MALES | | FEMALES | | TOTAL | | SQSC | | SQS 87 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Hearing problems | 30.9 | 142 | 15.6 | 74 | 23.1 | 216 | 21.8 | 334 | NAP | NAP |
| Mental health problems | 6.3 | 29 | 34.6 | 163 | 20.6 | 192 | 3.9** | 59 | 14.8 | 281,483 |
| Diseases of respiratory tract | 15.9 | 73 | 23.5 | 111 | 19.8 | 184 | 7.9 | 121 | 8.1 | 153,423 |
| Backaches | 14.0 | 64 | 22.7 | 107 | 18.4 | 171 | 13.1 | 200 | 11.6 | 220,126 |
| Arthritis or rheumatism | 9.2 | 42 | 24.4 | 115 | 16.9 | 157 | 24.4* | 374 | 24.6 | 467,358 |
| Headaches | 8.4 | 39 | 24.2 | 114 | 16.4 | 153 | 11.3* | 174 | 8.5 | 160,888 |
| Hypertension[1] | 11.9 | 55 | 16.2 | 77 | 14.1 | 132 | 31.1 | 476 | 18.7 | 356,153 |
| Bone and joint diseases | 6.2 | 29 | 17.3 | 81 | 11.8 | 110 | 0.4** | 6 | 4.4 | 84,304 |
| Digestive problems | 4.2 | 19 | 14.1 | 67 | 9.2 | 86 | 9.1 | 139 | 10.1 | 191,749 |
| Diabetes[1] | 5.2 | 24 | 11.7 | 55 | 8.5 | 79 | 20.5** | 314 | 4.5 | 85,374 |

1 This data was obtained by imputation for the Cree and Inuit surveys only.
* $p < 0.05$ ** $p < 0.01$

# CHAPTER 9 - SECTION III

# HEARING AND VISION PROBLEMS

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## 9.7 SCOPE AND LIMITS OF DATA

Questions on hearing or vision problems were asked in the Household Questionnaire and served not only to establish prevalence but also to recommend appropriate remedial measures. Just as for acute or chronic health problems, hearing and vision problems were reported by the primary respondent for each household. This approach allowed us to determine the extent of these problems, especially ear problems among individuals in the 0-15 year age group.

Comparisons with 1987 survey data were possible only with respect to persons 15 years of age and over, as 1987 Santé Québec survey questions appeared in the Self-administered Questionnaire. Comparisons with the Santé Québec Health Survey of the James Bay Cree were possible for hearing problems only.

## 9.8 ANALYSIS OF RESULTS

### 9.8.1 Hearing

As we have already noted in table 9.8, one Inuit in nine (12 %) suffered from hearing problems -- men somewhat more so than women (14 % and 11 %) -- and those 45 and over, much more than others (23 % and 16 %) (Table 9.12). Approximately one in ten persons (9 %) suffered from a chronic hearing problem, that is was hearing impaired.

As many people who had difficulty understanding a normal conversation had at least one chronic hearing problem (9 %). Men were more likely to experience difficulty in following a conversation (11 % vs 8 %) (Table 9.13). This was also true for individuals 45 and over (20 %). These same problems were already apparent among youth under 15 years of age (6 %), and the rate doubled for the 15-24 age group (12 %). While hearing loss (unilateral or bilateral) among youths owed mainly to moderately chronic otitis, hearing loss among older people stemmed -- in addition to past cases of otitis -- from other sources such as noise from firearms or snowmobiles.

Lastly, difficulties in hearing a normal conversation was more prevalent among Inuit of the Hudson Bay shore than those of Ungava Bay (11 % vs 8 %) (Table 9.13).

## TABLE 9.13

**Proportion of Inuit individuals experiencing difficulties in hearing a normal conversation, according to coastal region, age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep |
|---|---|---|
| **Age group / Total** | 9.3 | 657 |
| 0-14 years | 5.9 | 170 |
| 15-19 years | 11.4 | 97 |
| 20-24 years | 11.5 | 82 |
| 25-44 years | 7.4 | 126 |
| 45 years + | 19.7 | 184 |
| **Sex** | | |
| Males | 10.8 | 395 |
| Females | 7.8 | 263 |
| **Coastal region** | | |
| Hudson Bay | 10.6 | 444 |
| Ungava Bay | 7.5 | 213 |

A little more than half (51 %) of the people who had trouble following a conversation wore a hearing aid. In most cases (85 %), hearing aids were enough to alleviate hearing problems. Their use was most common and no less than twice as frequent among individuals 45 years of age and over. (Table 9.14).

## TABLE 9.14

**Proportion of Inuit individuals using a hearing aid, according to coastal region, age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep |
|---|---|---|
| **Age group / Total** | 4.7 | 336 |
| 0-14 years | 3.7 | 106 |
| 15-19 years | 4.5 | 39 |
| 20-24 years | 3.2 | 23 |
| 25-44 years | 4.5 | 77 |
| 45 years + | 9.8 | 91 |
| **Sex** | | |
| Males | 4.7 | 171 |
| Females | 4.8 | 165 |
| **Coastal region** | | |
| Hudson Bay | 5.5 | 232 |
| Ungava Bay | 3.6 | 104 |

The prevalence of hearing problems among the Inuit was greater than that observed among the Cree (12 % vs 8 %). Moreover, difficulty in understanding a conversation occurred twice as often among the Inuit (individuals 15 years of age and over) than Quebecers, and 30 % higher than among the Cree of the same age group (12 % vs 7 % and 9 % respectively), despite an age structure where youth is clearly over-represented. Lastly, more than one Inuit in 20 aged 15 years and over (6 %) used a hearing aid, compared with one Quebecer in 100 and one Cree in 50.

### 9.8.2 Vision

Nearly a quarter (24 %) of the Inuit population reported wearing eyeglasses or contact lenses to correct vision problems (Table 9.15). Women especially were more likely than men to wear them (29 % vs 18 %).

## TABLE 9.15

**Proportion of Inuit individuals having eyeglasses or contact lenses according to sector of residence, age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep |
|---|---|---|
| **Age group / Total** | 23.7 | 1,672 |
| 0-14 years | 3.5 | 101 |
| 15-19 years | 22.2 | 189 |
| 20-24 years | 21.5 | 153 |
| 25-44 years | 35.1 | 598 |
| 45 years + | 67.5 | 630 |
| **Sex** | | |
| Males | 18.3 | 670 |
| Females | 29.4 | 1,002 |
| **Sector** | | |
| III | 28.1 | 511 |
| IV | 17.1 | 366 |
| V | 25.6 | 795 |

Visual acuity seems to decrease with age : two thirds (68 %) of individuals 45 years of age and over had to wear glasses to see as their visual problems had continually worsened from age 15. This compared with a fifth of individuals in the 15-24 age group (22 %) and a third of those in the 25-44 age group (35 %) (Table 9.15). Fewer Inuit in Sector IV wore glasses (17 % vs 28 % and 26 % for Sectors III and V respectively.)

As for near- or farsightedness, one Inuit in nine (11 %) experienced reading problems, and, as many (11 %) could not recognize someone from afar without corrective lenses (Table 9.16).

## TABLE 9.16

**Proportion of Inuit individuals having eyeglasses or contact lenses who experienced reading problems or difficulty in recognizing someone from far away, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | DIFFICULTY READING | | DIFFICULTY RECOGNIZING SOMEONE FROM AFAR | |
|---|---|---|---|---|
| | % | Ep | % | Ep |
| **Sex / Total** | 11.3 | 787 | 10.8 | 748 |
| Males | 9.7 | 351 | 7.0 | 250 |
| Females | 12.9 | 436 | 14.9 | 498 |
| **Age group** | | | | |
| 0-14 years | 1.2 | 33 | 1.3 | 35 |
| 15-19 years | 5.4 | 45 | 7.5 | 61 |
| 20-24 years | 8.4 | 59 | 11.4 | 80 |
| 25-44 years | 15.6 | 264 | 20.1 | 337 |
| 45 years + | 42.0 | 387 | 26.4 | 235 |

Proportionally more women than men experienced reading problems (13 % and 10 %), or had trouble recognizing someone from far away (15 % vs 7 %). As anticipated, a large majority of people 45 years of age and over were unable to read (42 %) or recognize someone from far away (26 %). Corrective lenses allowed the majority of Inuit who had vision problems (88 %) to read or recognize someone from far away. Twice as many Inuit from the Hudson Bay shore than those from the Ungava Bay shore still experienced vision problems even when wearing glasses (15 % and 8 %) but tended to be less disadvantaged in terms of being able to see at a distance (10 % vs 13 %).

Fewer Inuit 15 years of age and over than Quebecers of the same age group wore corrective lenses (37 % and 57 %), but almost the same number experienced vision problems even with corrective lenses (12 % vs 10 % among Quebecers). Far fewer Inuit aged 15 years and over than Quebecers needed to wear glasses to read or were able to recognize someone from far away (respectively, 18 % vs 38 % for seeing close up, and 18 % vs 25 % for seeing far).

# CHAPTER 9 - SECTION IV

# ACCIDENTS AND INJURIES

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## 9.9 SCOPE AND LIMITS OF DATA

This survey dealt mainly with injuries sustained over the course of the 12 months prior to the survey and which had limited a person's normal activities. Injuries leading to death were not included. Pertinent questions that concerned all family members were put to the household's principal respondent. Moreover, for each person injured, the respondent was asked to define the type of accident that had caused the injury. The questions asked also touched upon the circumstances surrounding the event, the place, and the season during which the accident had occurred. There was a final question about whether or not the injury had led to hospitalization.

We must emphasize that, in the context of this survey, the term « accident » makes no distinction between « intentional » (resulting from an act of violence toward oneself or others) or « unintentional » injury (resulting from an involuntary act).

The questions asked were identical to or slightly modified versions of those appearing in the Cree survey. This allowed us to conclude with certain comparisons between the two surveys. Comparison with the 1987 Santé Québec master survey was possible only to a small degree -- as the context was quite different --especially where the parameters of circumstances, place, and season were concerned.

The analysis of accidents according to their type was somewhat difficult, given the restricted number of observations.

## 9.10 ANALYSIS OF RESULTS

During the year prior to the survey, barely one person in 25 (4 %) in all age groups could not engage in their normal activities because of an accident. Men fell victim to accidents more frequently than women, and youths in the 15-24 age group were more prone than the rest of the population (Table 9.17). The frequency of accidents was greater among the population of Sector III than among those of other sectors, possibly owing to a denser population and a greater number of vehicles in circulation, as well as vehicle engine power.

## TABLE 9.17

**Frequency of accidents among the Inuit according to sector of residence, sex and age (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | STATISTICAL SIGNIFICATION LEVEL («P») |
|---|---|---|---|
| **Sex / Total** | 3.6 | 256 | 0.0448 |
| Males | 4.5 | 166 | |
| Females | 2.6 | 90 | |
| **Age group** | | | 0.0218 |
| 0 - 14 years | 2.0 | 57 | |
| 15 - 24 years | 5.7 | 89 | |
| 25 - 44 years | 4.3 | 74 | |
| 45 years + | 4.0 | 37 | |
| **Sector of residence** | | | 0.0018 |
| III | 6.4 | 117 | |
| IV | 2.3 | 48 | |
| V | 2.9 | 91 | |

At least four accidents in ten (41 %) involved a motor vehicle (such as an automobile, ATV, or snowmobile), two out of ten (19 %) occurred during sporting activities, and slightly fewer (17 %) were the result of a fall (Table 9.18). The number of work accidents was almost negligible (4 %), and certainly less than accidents owing to brawls (7 %).

*Santé Québec Health Survey Among the Inuit of Nunavik, 1992*

## TABLE 9.18

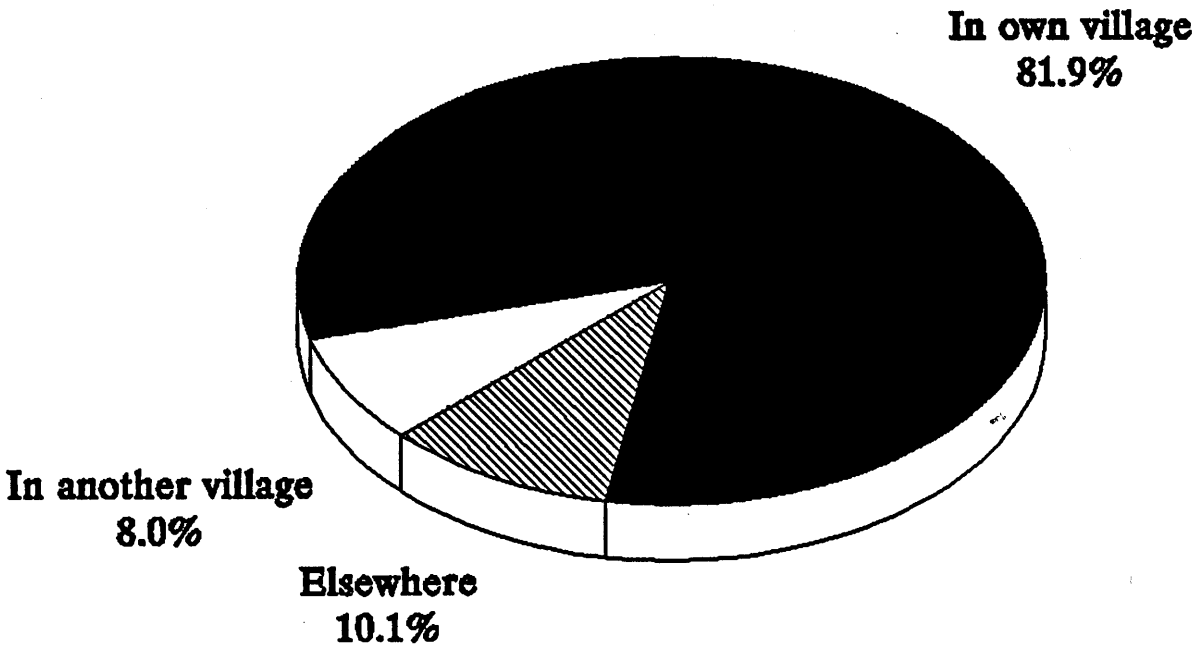
**Breakdown of Inuit individuals injured in twelve months prior to survey, according to type of accident having resulted in injury (%) [Inuit, 1992]**

| TYPE OF ACCIDENT | % | Ep |
|---|---|---|
| Sports accident | 19.4 | 48 |
| Snowmobile accident | 18.1 | 45 |
| Fall | 17.3 | 43 |
| Accident involving an ATV | 13.2 | 33 |
| Other | 9.5 | 24 |
| Brawl | 6.6 | 17 |
| Boat accident | 4.5 | 11 |
| Accident involving a two-wheel vehicle | 3.7 | 9 |
| Work accident | 3.6 | 9 |
| Hunting accident | 2.3 | 6 |
| Car accident | 1.7 | 4 |
| TOTAL | 100 | 250 |

The majority of accidents took place in the villages (90 %) (especially in the victim's village (82 %)), whereas one accident in ten (10 %) occurred elsewhere (Graph 9.10).

## GRAPH 9.10

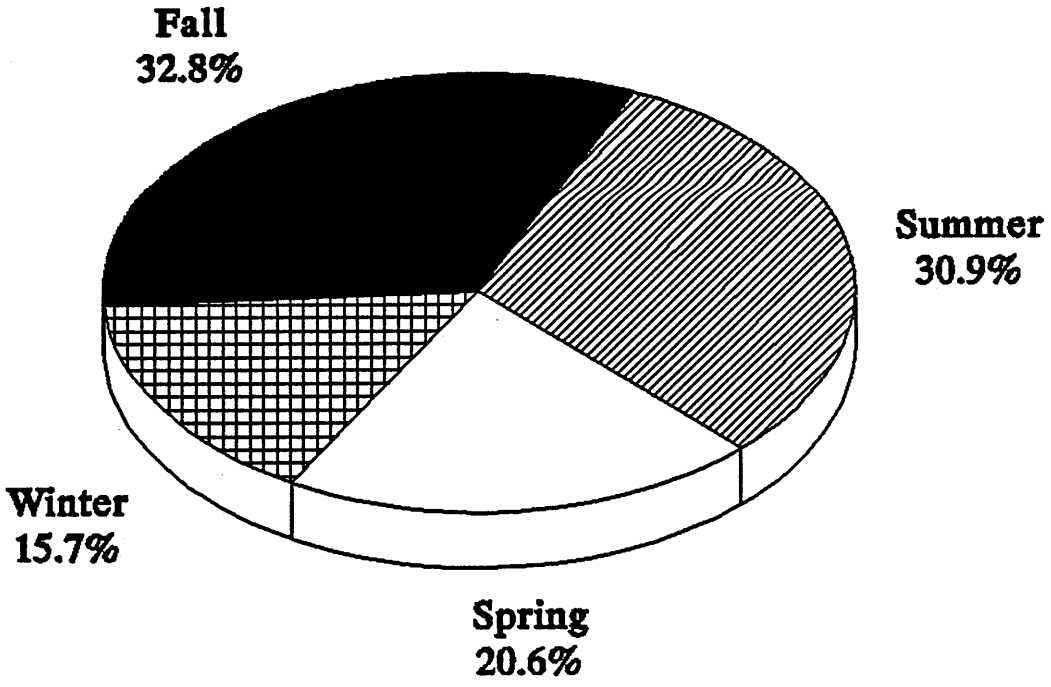
**Breakdown of accidents having occurred in twelve months prior to survey, according to geographical location (%) [Inuit, 1992]**




Three accidents in 10 (31 %) occurred in summer, and slightly more (33 %) in autumn ; fewer accidents took place in winter (16 %) (Graph 9.11).

## GRAPH 9.11

**Breakdown of accidents having occurred in twelve months prior to survey, according to season (%), [Inuit, 1992]**




Lastly, more than four accidents in ten (43 %) were serious enough to warrant hospitalization. For the twelve months preceding the survey, this represented an annual frequency of hospitalization of 2 %.

# CHAPTER 9 - SECTION V

# DENTAL HEALTH

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## 9.11 SCOPE AND LIMITS OF DATA

To adequately assess the dental health of the Inuit in the current survey, conventional use of indices for teeth with caries, cavities and fillings (TCCF) did not seem appropriate as they would not have allowed us to examine the functioning of the masticatory apparatus. We have thus opted for a simple index of counting teeth and classifying them according to their functional capacity (presence or absence of a natural or prosthetic antagonistic tooth). This simple approach facilitated the task of the nurses pollsters who were not too familiar with dentistry.

The main issues dealt with in this section include the loss of teeth, their replacement by prostheses, the prosthesis-wearing habits of the Inuit, and the overall use of dental services.

## 9.12 RESULTS

The proportion of individuals who still had all their teeth -- that is, at least 24 teeth (complete natural dentition) at the time of the examination -- decreased with age to reach 6 % among those aged 45 years and over. Women were less likely to have kept all their teeth than men. This can be explained by the fact that women used dental services more frequently, and extraction was often prescribed (Table 9.19).

## TABLE 9.19

**Proportion of Inuit individuals aged between 18 and 74 years having all their own teeth, according to sex and age (%) [Inuit, 1992]**

| CHARACTERISTICS | TOTAL EDENTIA | |
|---|---|---|
| | % | Ep |
| **Age group** | | |
| 18-24 years | 64.6 | 670 |
| 25-44 years | 29.2 | 519 |
| 45 years + | 5.8 | 51 |
| **Sex** | | |
| Males | 42.4 | 804 |
| Females | 24.2 | 436 |
| **TOTAL** | 33.5 | 1,240 |

Among individuals aged 25-44, almost a third had no natural teeth in the **superior maxilla** (SUP. MAX.) (Table 9.20). Women were much more affected by this problem than men. Edentia of the superior maxilla was much higher -- as can be observed in all populations -- since the anterior superior teeth are generally more prone to decay than those of the **inferior maxilla** (INF. MAX.) . Furthermore, poor upper teeth tend to more seriously affect the appearance of individuals which leads them to have their natural teeth replaced by a prosthesis. For the lower teeth, aesthetics is rarely an issue.

## TABLE 9.20

**Proportion of Inuit individuals aged between 18 and 74 years and being completely or partially edentated, according to sex and age (%) [Inuit, 1992]**

| CHARACTERISTICS | SUP. MAX | | INF. MAX. | | SUP. AND INF. | |
|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep |
| **Age group** | | | | | | |
| 18-24 years | 1.7 | 17 | 0.6 | 6 | 0.6 | 6 |
| 25-44 years | 28.6 | 508 | 12.5 | 222 | 11.1 | 197 |
| 45 years + | 63.8 | 564 | 36.1 | 319 | 34.5 | 305 |
| **Sex** | | | | | | |
| Males | 21.5 | 408 | 9.3 | 176 | 7.8 | 148 |
| Females | 37.8 | 681 | 20.4 | 371 | 20.0 | 360 |
| **TOTAL** | 29.4 | 1,809 | 14.8 | 547 | 13.7 | 508 |

Compared with the results of a study conducted in 1983-1984 (Blanchet *et al.*, 1992), complete edentia had increased for all age groups, except for those between the ages of 18 and 24 years. This group currently presented low edentia rate of 1 %, probably because of preventive programmes recently instituted and more accessible curative dental care.

The fact that those who were completely edentated did not wear prostheses appeared specific to Nunavik where individuals have shown notable problems in adapting to prostheses. Traditional Inuit food was not very compatible with prostheses, especially when the latter were not perfectly stable. Certain foods are known for their exceptional firmness, such as *maqtaq* (beluga skin), raw meat, and *nikkou* (dried caribou meat). Moreover, access to prostheses was limited because denturological services were not broadly available (Table 9.21).

The problem was more severe for prosthesis of the inferior maxilla which were often unstable. Almost half of the completely edentated Inuit (upper and lower) did not wear a prosthesis.

## TABLE 9.21

**Proportion of Inuit individuals aged between 18 and 74 years and being completely or partially edentated, wearing no prosthesis (%) [Inuit, 1992]**

| CHARACTERISTICS | INDIVIDUALS PARTIALLY OR COMPLETELY EDENTATED | | INDIVIDUALS COMPLETELY EDENTATED & WEARING NO PROSTHESIS | |
|---|---|---|---|---|
| | % | Ep | % | Ep |
| Superior maxilla | 29.4 | 1,089 | 44.8 | 487 |
| Inferior maxilla | 14.8 | 547 | 48.1 | 263 |
| Superior and inferior maxilla | 13.7 | 508 | 46.2 | 235 |

Table 9.22 illustrates masticatory functional incapacity. Considering the low proportion of individuals who actually wore prostheses, edentated persons could be considered quite handicapped from a functional point of view.

To be classified as functional, an individual had to demonstrate minimum masticatory function : at least two sextants of two teeth or more making an occlusion with one natural tooth or an antagonistic prosthesis. This index thus took into account prostheses that were in place and consequently provided a direct measure of the capacity of an individual to chew normally. Fortunately, few young people (3 %) demonstrated a serious masticatory disability. Among those aged 45 years and over, almost 60 % did not have an adequate masticatory apparatus.

The proportion of Quebecers aged 25-54 who made annual visits to the dentist varies from 45 % to 55 % (*Ordre des dentistes du Québec (ODQ)*, 1993). Compared with these results (Table 9.23), the frequency of visits to the dentist in Nunavik was low (34 %). The situation was particularly worrisome among the young for whom delays could lead to extraction of teeth rather than restoration. However, as parents normally answered this question, and in Nunavik parents did not always have first-hand knowledge of visits by their children to the dentist office, survey findings may have underestimated the frequency with which the younger Inuit visited the dentist.

## TABLE 9.22

**Proportion of Inuit individuals aged between 18 and 74 years demonstrating masticatory functional incapacity*, according to sex and age (%) [Inuit, 1992]**

| CHARACTERISTICS | FUNCTIONAL INCAPACITY | |
|---|---|---|
| | % | Ep |
| **Age group** | | |
| 18-24 years | 3.4 | 35 |
| 25-44 years | 21.4 | 339 |
| 45 years + | 59.7 | 346 |
| **Sex** | | |
| Males | 20.1 | 351 |
| Females | 25.6 | 369 |
| **TOTAL** | 22.6 | 720 |

* excluding completely edentated individuals

## TABLE 9.23

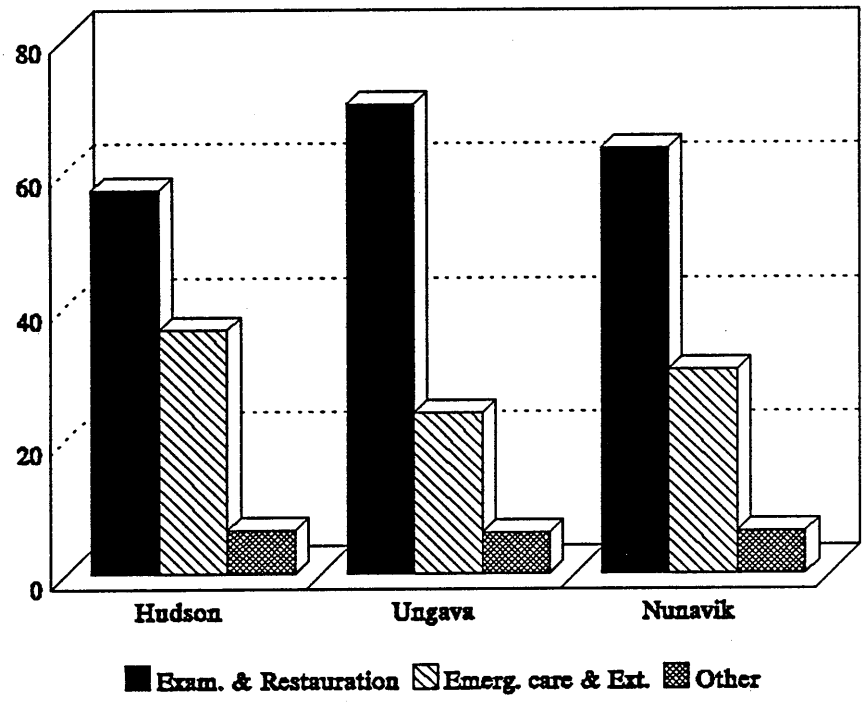
**Proportion of Inuit individuals aged 1 year and over having visited dentist within 12 months prior to survey, according to sex and age (%) [Inuit, 1992]**

| CHARACTERISTICS | MALES | | FEMALES | | TOTAL | |
|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep |
| **Age group** | | | | | | |
| 1-14 years | 39.6 | 542 | 39.7 | 457 | 39.6 | 999 |
| 15-24 years | 30.4 | 215 | 50.6 | 360 | 40.6 | 575 |
| 25-44 years | 29.7 | 255 | 30.8 | 244 | 30.2 | 499 |
| 45 years + | 10.4 | 45 | 12.1 | 56 | 11.3 | 101 |
| **TOTAL** | 31.4 | 1,057 | 35.8 | 1,117 | 33.5 | 2,174 |

Note that in general, emergencies and pain were what motivated a large number of visits to the dentist (Graph 9.12). This was even more prevalent on the Hudson Bay shore where isolation and problems of logistics have for a long time limited access to dental care. In recent years, these problems have been partially alleviated by the construction of permanent dental clinics in the villages of *Salluit* and *Inukjuak*, as well as *Povungnituk* and *Kuujjuarapik*.

## GRAPH 9.12

**Reason for last dental check-up among Inuit aged 1 year and over, according to coastal region (%) [Inuit, 1992]**



# CHAPTER 9 - SECTION VI

# OVERALL HEALTH INDEX

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## 9.13 SCOPE AND LIMITS OF DATA

The results in this section represent a subjective evaluation state of health. In comparing the results of the 1987 Santé Québec master survey with those of the survey among the James Bay Cree in 1991, one must bear in mind that this state of health could be strongly influenced by cultural factors.

The overall health index used in the Santé Québec Health Survey Among the Inuit of Nunavik has been adapted from the survey developed by the Human Population Laboratory of the Department of Public Health for the State of California (HPL). Health is viewed as a continuum stretching from a minimum to a maximum state and may be affected by limitations of activities as well as chronic conditions and a variety of symptoms. Mutually exclusive categories have been defined (Table 9.24) which allowed us to classify responses obtained. Subsequently, each subject was attributed scores between 0 (maximum health status) and 1 (minimum health status), with 1 indicating the probability of a state of health poorer than that of the population as a whole. This score was then used to calculate an average overall health index for a given group -- broken down by age, for example -- which could be compared with findings for other groups.

This index was originally developed specifically to assess physical health, but in this survey, it has been used in a broader perspective.

By definition, the population average works out to 0.5, although a slight variation is possible to make allowance for the degree of accuracy of the method. If scores obtained are lower than the average, the state of health is considered better than that of the population as a whole, whereas a score above 0.5 indicates a generally poorer state of health.

# TABLE 9.24

## Overall health index categories used in Santé Québec surveys [Inuit, 1992]

| CATEGORY | QUESTION OR VARIABLE |
|---|---|
| **1. Severe disability**<br><br>Person having difficulty eating, bathing, getting dressed, going out, confined to sitting or to bed, limited activity owing to mental or physical health problems, unable to perform domestic chores, unable to work or study for the past six months or more | • Usually unable to leave the house for at least the past six months<br>• Obliged to remain in sitting position or in bed for the past six months or more<br>• Limited in movement owing to mental or physical health problems for the past six months or more<br>• Needs help taking care of self and in moving around for the past six months or more<br>• Unable to perform domestic chores for the past six months or more<br>• Unable to work outside the home or pursue studies for the past six months or more<br>• Needs help eating, bathing, getting dressed, or getting out of the house for the past six months or more |
| **2. Less severe disability**<br><br>Person having difficulty eating, bathing, getting dressed, going out, confined to sitting or to bed, limited activity owing to mental or physical health problems, unable to perform domestic chores, unable to work or study, for less than six months. Person whose household activities are limited, whose ability to work in the home or pursue studies is limited, whose leisure activities or mobility is limited, who needs help in taking care of personal matters, domestic chores, shopping, or in getting out of the house. | • Usually unable to leave the house for the past six months or less<br>• Obliged to remain in sitting position or in bed for the past six months or more<br>• Limited in movement due to mental or physical health problems for the past six months or less<br>• Needs help in taking care of self and in getting around inside the house for the past six months or less<br>• Unable to perform domestic chores for the past six months or less<br>• Unable to work outside the home or pursue studies for the past six months or less<br>• Needs help eating, bathing, getting dressed, bathing, getting dressed, or getting around inside the house for the past six months or less<br>• Limited in activities inside the home but able to perform domestic chores<br>• Limited in ability to work outside the home or to pursue studies but still able to do so<br>• Limited in other activities such as leisure or transportation |

| CATEGORY | QUESTION OR VARIABLE |
|---|---|
| **3. More than one chronic condition**<br><br>Person not incapacitated but exhibiting at least two problems or chronic conditions in the past 12 months | • Is there anyone in the home who exhibits problems involving : anaemia, skin disease, allergies, serious backaches or spinal problems, arthritis or rheumatism, other serious bone and joint problems, cancer, cerebral palsy, diabetes, emphysema or chronic bronchitis or persistent cough or asthma, severe mental or intellectual deficiency, depression, epilepsy, hypertension, heart disease, urinary or kidney disease, stomach ulcers, other digestive problems, goitre or thyroid problems, migraines or frequent headaches, disability or handicap resulting from the loss of a limb, paralysis resulting from an accident, paralysis resulting from an attack or a cerebral haemorrhage, periods of intense nervousness or irritability, periods of confusion or frequent loss of memory, disability owing to obesity, periods of six months or more of having visions or hearing voices or facing irrational fears, belief that one's spirit has been affected by a spell, hearing problems |
| **4. Chronic condition**<br><br>Person not incapacitated but exhibiting one problem or chronic condition in the past 12 months | |
| **5. Symptomatic**<br><br>Person having no chronic disability, problem, or condition, but having exhibited at least one symptomatic state in the past 12 months | • Health problems reported that did not lead to a chronic disability or condition |
| **6. No illness**<br><br>Person having reported no health problems in the past 12 months | • No disability, chronic condition or health problem |

## 9.14 SAMPLE SIZE, FREQUENCIES AND ANSWER RATES

For the overall health index, 99,8 % of the Inuit were grouped into one or other of the categories. This high rate can be explained by the fact that the index was calculated solely based upon answers to the Household Questionnaire filled in by the interviewer. As respondents to a given questionnaire together form a specific population, a ranking has been attributed to each subject for each unit of measurement.

Table 9.24 illustrates the categories used in the Santé Québec Health Survey Among the Inuit of Nunavik and the questions used to classify each subject. Note, however, that there were differences between this index and the indices designed for the 1987 and James Bay Cree surveys : in the 1987 survey, Santé Québec offered a choice of 28 chronic health problems while the Cree survey included two more for a total of 30, which may have led to a greater degree of reporting of these conditions. In this current survey, there were also 30 chronic health problems. However, hay fever in the Cree survey was replaced by hearing problems in the Inuit one.

## 9.15 RESULTS

In this survey, almost half the population -- that is, 48 % (Table 9.25) -- reported no illnesses, whereas 20 % reported only one chronic condition. Very few people were classified as suffering from disabilities : 3 % for severe disabilities, and 1 % for less severe disabilities. While there were slightly more men in the severe disability category, there were many more who reported no diseases at all (9 % more than women).

# TABLE 9.25

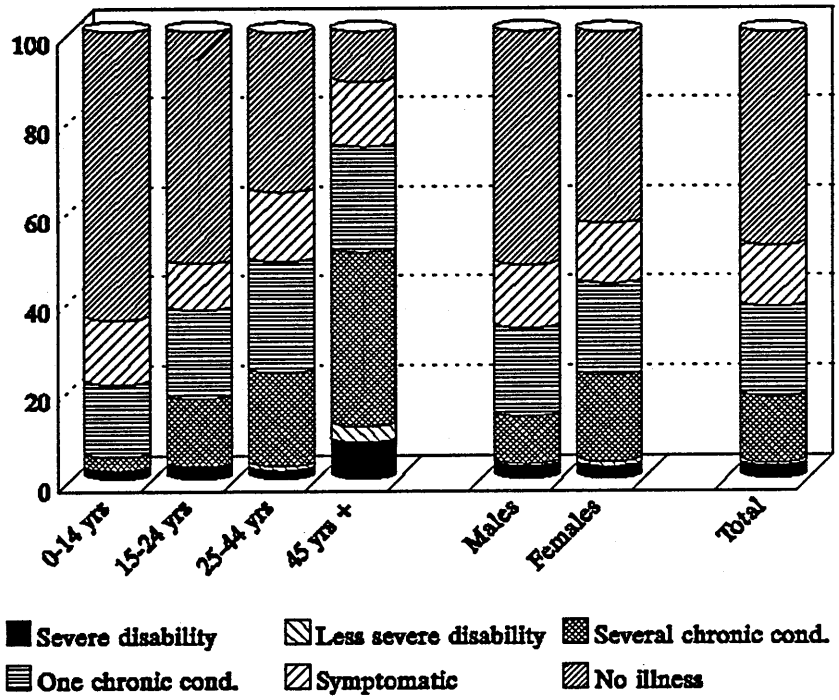
## Breakdown of Inuit based upon overall health index categories, according to sex and age (%) [Inuit, 1992]

| AGE GROUP AND SEX | SEVERE DISABILITY | | LIMITING DISABILITY | | SEVERAL CHRONIC CONDITIONS | | ONLY ONE CHRONIC CONDITION | | SYMPTOMATIC | | NO ILLNESS | | UNKNOWN | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | Ep |
| **0-14 years** | | | | | | | | | | | | | | | |
| Males | 1.7 | 26 | 0.3 | 5 | 2.4 | 36 | 16.8 | 256 | 14.9 | 226 | 63.9 | 969 | 0.0 | 0 | 1,518 |
| Females | 1.3 | 18 | 0.0 | 0 | 3.8 | 51 | 15.6 | 210 | 14.0 | 189 | 65.3 | 882 | 0.0 | 0 | 1,350 |
| Total | 1.5 | 44 | 0.2 | 5 | 3.0 | 87 | 16.2 | 466 | 14.5 | 415 | 64.6 | 1,851 | 0.0 | 0 | 2,868 |
| **15-24 years** | | | | | | | | | | | | | | | |
| Males | 4.2 | 33 | 0.0 | 0 | 9.7 | 76 | 17.9 | 141 | 7.1 | 56 | 61.1 | 479 | 0.0 | 0 | 785 |
| Females | 1.1 | 8 | 0.0 | 0 | 20.6 | 161 | 21.6 | 169 | 13.7 | 108 | 42.5 | 333 | 0.5 | 4 | 783 |
| Total | 2.6 | 41 | 0.0 | 0 | 15.1 | 237 | 19.8 | 310 | 10.4 | 164 | 51.8 | 812 | 0.3 | 4 | 1,568 |
| **25-44 years** | | | | | | | | | | | | | | | |
| Males | 2.0 | 18 | 0.6 | 5 | 14.1 | 128 | 23.8 | 216 | 15.0 | 136 | 43.4 | 393 | 1.1 | 10 | 906 |
| Females | 1.6 | 13 | 1.4 | 11 | 28.0 | 225 | 26.1 | 209 | 15.9 | 128 | 27.0 | 217 | 0.0 | 0 | 803 |
| Total | 1.8 | 31 | 0.9 | 16 | 20.6 | 353 | 24.9 | 425 | 15.4 | 264 | 35.8 | 610 | 0.6 | 10 | 1,709 |
| **45 years +** | | | | | | | | | | | | | | | |
| Males | 5.7 | 26 | 0.9 | 4 | 32.0 | 147 | 23.3 | 107 | 22.4 | 103 | 15.7 | 73 | 0.0 | 0 | 460 |
| Females | 10.4 | 49 | 6.0 | 28 | 45.9 | 217 | 23.8 | 113 | 7.1 | 33 | 6.8 | 32 | 0.0 | 0 | 472 |
| Total | 8.1 | 75 | 3.5 | 32 | 39.0 | 364 | 23.6 | 220 | 14.6 | 136 | 11.2 | 105 | 0.0 | 0 | 932 |
| **TOTAL** | | | | | | | | | | | | | | | |
| Males | 2.8 | 104 | 0.4 | 14 | 10.5 | 387 | 19.6 | 719 | 14.2 | 521 | 52.2 | 1,914 | 0.3 | 10 | 3,669 |
| Females | 2.6 | 89 | 1.1 | 39 | 19.2 | 654 | 20.6 | 701 | 13.4 | 457 | 43.0 | 1,465 | 0.1 | 4 | 3,409 |
| Total | 2.7 | 193 | 0.8 | 53 | 14.7 | 1,041 | 20.1 | 1,420 | 13.8 | 978 | 47.7 | 3,379 | 0.2 | 14 | 7,078 |

The proportion of people in categories corresponding to a more impaired state of health, one (or more) severe disabilities, limited disabilities, or chronic conditions, increased with age (Graph 9.13), whereas the proportion of people reporting no diseases decreased with age. Among the Inuit, when compared with the population of southern Québec, a smaller proportion of people reported disabilities (3 % vs 7 %), whereas the proportion reporting no diseases was slightly higher (48 % vs 46 %). More Cree than Inuit reported no diseases (53 % vs 48 %).

## GRAPH 9.13

**Breakdown of Inuit based upon overall health index categories, according to sex and age (%) [Inuit, 1992]**




Analysis of the overall health index (Table 9.26) indicated that men (0.47) demonstrated a better state of health than women (0.54). The same was found to be true in the 1991 Santé Québec Health Survey of the James Bay Cree, the 1987 Santé Québec master survey, and the survey conducted by the Human Population Laboratory. In this latter case, however, the difference was not found to be significant.

# TABLE 9.26

## Overall health index ratings among the Inuit, according to sex and age (%) [Inuit, 1992]

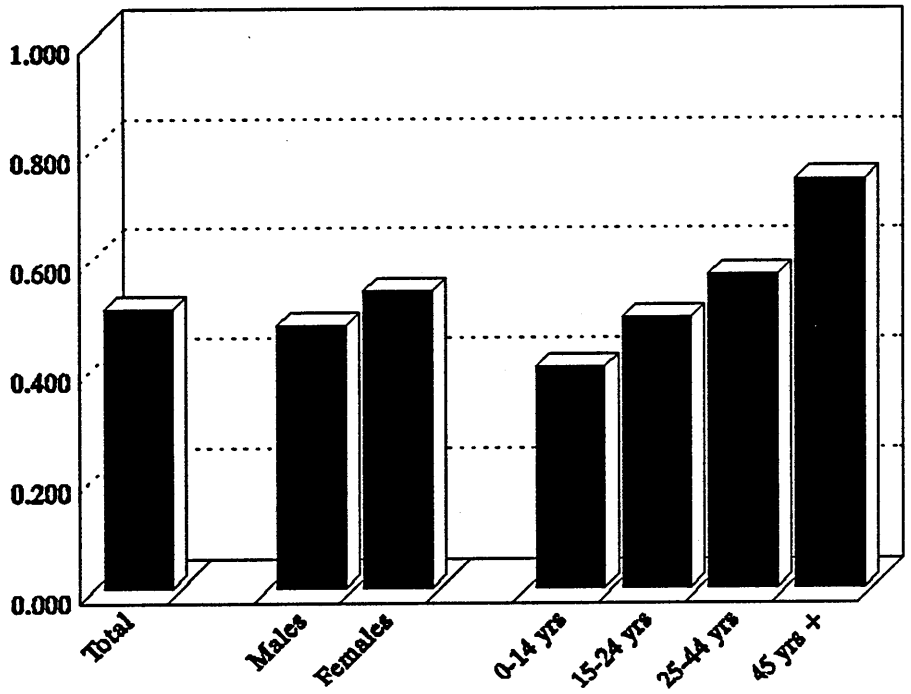
| AGE GROUP AND SEX | RATING VALUE | n | 1-P | STAND.-ERR. | C.V. | CONFIDENCE INTERVAL | |
|---|---|---|---|---|---|---|---|
| | | | | | | INF. | SUP. |
| Population | 0.5048 | 1,564 | 0.4952 | 0.0103 | 2.04 | 0.4782 | 0.5314 |
| Males | 0.4749 | 798 | 0.5251 | 0.0126 | 2.64 | 0.4425 | 0.5073 |
| Females | 0.5370 | 766 | 0.4630 | 0.0127 | 2.37 | 0.5042 | 0.5698 |
| 0-14 years | 0.3985 | 679 | 0.6015 | 0.0133 | 3.33 | 0.3643 | 0.4327[a,b,c] |
| 15-24 years | 0.4894 | 327 | 0.5106 | 0.0176 | 3.59 | 0.4442 | 0.5346[a,d] |
| 25-44 years | 0.5680 | 353 | 0.4320 | 0.0170 | 2.99 | 0.5242 | 0.6118[b,e] |
| 45 years + | 0.7424 | 205 | 0.2576 | 0.0214 | 2.89 | 0.6872 | 0.7976[c,d,e] |
| **Males** | | | | | | | |
| 0-14 years | 0.4009 | 359 | 0.5991 | 0.0169 | 4.21 | 0.3574 | 0.4444 |
| 15-24 years | 0.4458 | 159 | 0.5542 | 0.0240 | 5.39 | 0.3839 | 0.5077 |
| 25-44 years | 0.5188 | 180 | 0.4812 | 0.0227 | 4.38 | 0.4603 | 0.5773 |
| 45 years + | 0.6827 | 100 | 0.3173 | 0.0298 | 4.36 | 0.6060 | 0.7594 |
| **Females** | | | | | | | |
| 0-14 years | 0.3958 | 320 | 0.6042 | 0.0177 | 4.47 | 0.3502 | 0.4414 |
| 15-24 years | 0.5333 | 168 | 0.4667 | 0.0234 | 4.39 | 0.4729 | 0.5937 |
| 25-44 years | 0.6229 | 173 | 0.3771 | 0.0231 | 3.71 | 0.5633 | 0.6825 |
| 45 years + | 0.8006 | 105 | 0.1994 | 0.0291 | 3.64 | 0.7256 | 0.8756 |

a,b,c,d,e. Indexed percentages of the same exponent were found to vary significantly at confidence intervals of 95 %.

Age proved a greater source of difference than sex, and the index progressed regularly from 0.40 among individuals 0-14 years of age to 0.74 among those 45 years of age and over (Graph 9.14). Individuals between 0 and 14 years of age were in significantly better health than persons of other age groups, whereas those in the 15-24 and the 25-44 age groups appeared to be in better health than their elders. These results were comparable with those obtained in the 1991 Santé Québec Health Survey of the James Bay Cree (Table A.9.2, Appendix 1) the 1987 Santé Québec master survey (Table A.9.4, Appendix 1) and the Human Population Laboratory survey conducted in the United States.

## GRAPH 9.14

**Various overall health index ratings among the Inuit, according to sex and age (rating value) [Inuit, 1992]**




Analyses by income and region (Ungava, Hudson and Sectors III, IV, and V) did not reveal any significant differences. Neither did analyses in terms of risk factors such as cigarette smoking, lack of physical activity or alcohol consumption.

To compare the overall health indices used in the 1991 James Bay Cree Survey, the 1987 Santé Québec master survey and the Inuit survey, the recommended methodology involves assigning scores for the survey having the most subjects to the two other surveys, which is

to say those of the master survey 1987. For a more valuable comparison from one population to the next, the results were standardized according to age and sex with respect to the design of the 1987 Santé Québec master survey. Table A.9.2 (Appendix 1) illustrates the results of the 1991 Cree survey, Table A.9.3 (Appendix 1) the results of the 1992 Inuit survey, and Table A.9.4 (Appendix 1) the 1987 Santé Québec master survey.

The Inuit population reported generally poorer health than their Cree counterparts especially in the 15-24 age group. Even if there was no significant difference between the Inuit population as a whole and that of southern Québec, Inuit 0 to 14 years of age were in better health overall, especially males, whereas women aged 45 years and over considered themselves in poorer health than women polled in the 1987 Santé Québec master survey.

## 9.16 SUMMARY

### 9.16.1 Self-evaluation of health

In conclusion, the results of this chapter showed that the Inuit assessed their state of health less positively than Quebecers, Canadians and the Cree : almost half the adults, men as well as women, considered their state of health as average. Note, however, that a very small proportion of the population considered themselves to be in poor health. People who did not suffer from health problems -- those who lived in Sector III and former marijuana and hashish users -- viewed themselves in better health than others. In contrast, those in the 15-19 age group considered themselves to be in poorer health.

The Inuit were nonetheless satisfied with their state of health, the men much more so than the women. However, they were less satisfied than other populations (Quebecers, Canadians and Cree). Those who were less satisfied were found in the 15-19 age group, among individuals who perceived their state of health as average, among persons who reported health problems, as well as among regular smokers.

On the whole, the Inuit were happy but less so than Quebecers, Canadians or Cree. Women and individuals in the 15-24 age group were less happy than are others. Those who lived with their married or common-law spouses, those who were very active in leisure activities, former cigarette smokers, and current users of marijuana or hashish seemed to be the happiest.

The data from this survey, while useful in that it describes many facets of Inuit health, was not sufficient to accurately interpret several of the differences observed between the Inuit and other populations (Quebecers, Canadians and Cree). Beyond simple statistical comparisons,

historical, anthropological and cultural parameters must be taken into account during subsequent analyses of the subject. The concept of state of health varies from one era to another, from one civilization to another, and from one culture to another. The frame of reference is in a constant state of flux. State of health is not an abstract perception, rather the reflection of a daily reality developed in a given environment. The Inuit, who have lived isolated for a long time in a difficult environment, have witnessed their state of health steadily improve from generation to generation, thanks, in part, to improved living conditions (e.g., lodging and health care). This can be substantiated by the rapid evolution of their life expectancy : from 1941-1951 to 1971-1981 it rose from 35 to 62 years (Robitaille and Choinière, 1984).

With regard to comparisons among subgroups of the Inuit population, there is room for further analyses. The low satisfaction rate among women regarding their state of health warrants examination in light of reported health problems, preventative action, recourse to social or health services, lifestyles, type of work, social environment, family context, morbidity or mortality, and so on.

It would also be necessary to examine the state of health (in the broader sense) of another group of Inuit -- the 15-19 age group -- who seemed to be especially vulnerable. A great many of them considered their state of health as only average, and were dissatisfied and unhappy. These were indeed alarming signs for the next generation of a society in search of its identity. It would be appropriate to dwell further on this age group by using the data from this survey, particularly that dealing with lifestyle (e.g., alcohol or drug intake, physical exercise routines, eating habits and nicotinism), the reasons for seeking out social or health services, impressions of cultural change, and problems in the villages, life in general, and the state of mental health.

## 9.16.2 Health problems

In Nunavik, 44 % of Inuit experienced at least one health problem, and more than a fifth experienced two or more. Women reported more than men. In general, the proportion of those who reported health problems was the same as that for the Cree, but less than that for Quebecers polled in 1987. This last difference likely owed to a lower rate of reporting by men.

Hearing difficulties represented the most widespread health problem among the Inuit population and proved to be even more widespread than among the Cree. The prevalence of hearing problems was highest among youths under 25 years of age, lower in the 25-44 age group, and again highest among individuals 45 years of age and over. One explanation could be the frequent occurrence of otitis among the young, and hearing loss caused by exposure to noise among the older Inuit.

Diseases of the respiratory tract constituted the second most frequently occurring problem among the Inuit, especially among individuals under 15 years of age and those 45 years of age and over. Among youths, this problem was possibly related to living conditions (dry air), cold, exposure to second-hand cigarette smoking, whereas among the older Inuit, the effect of tobacco was likely the main determining factor. These associations have yet to be verified.

Mental health problems[1] were very widespread among individuals 15 years of age and over. Women were generally more affected than men. However, while the prevalence among the Inuit was higher than among the Cree, it was equivalent to that of Quebecers polled in 1987.

Diabetes appeared more frequently among the Inuit than among Quebecers. Further study would provide a better understanding of this phenomenon. Gestational diabetes appeared to be a factor in the 15-24 age group, but the incidence of diabetes among individuals 45 years of age and over would require closer examination.

### 9.16.3 Hearing and vision

We have established that hearing problems and their consequences (acute problems, chronic problems, and difficulty following a normal conversation) often occurred among the Inuit in much higher proportions than among Quebecers in general.

As for vision problems, results would lead us to believe that the Inuit population had a certain advantage over Quebecers in general (the wearing of glasses was much less widespread, as was the incidence of those suffering from near- and farsightedness). It would be difficult to explain the differences observed between the two populations for at least two reasons. In the first place, reading habits were not necessarily identical. Inuit traditional culture was mainly oral, and the development of a written culture relatively recent. In the second place, access to the health care system was not really comparable, especially regarding specialists. Ophthalmologists' annual visits in Nunavik have sometimes led to ineffective diagnosis of vision problems.

It would be interesting to juxtapose the hearing and vision data with that concerning the use of services (such as medical visits and examinations in dispensaries). Furthermore, for vision problems in particular, there is room for comparisons of pertinent cultural change (advent of television), or, again, to further document the observed prevalence as functions of cultural characteristics of the Inuit population (reading habits, type of daily work -- especially among women -- lighting within homes, and so on).

(1) Including codes ICD-9 : 290.0 to 316.9, 780.1, 780.9 and 799.2. For more information, refer to Technical Manual.

## 9.16.4 Accidents and injuries

The frequency of injuries owing to accidents was, to all intents and purposes, similar among the Inuit, the Cree and Quebecers in general : one person in 25 was affected. Among the first two populations in particular, accidents owing to modes of transportation or sports most often led to restrictions of everyday activities. Injuries among the Inuit appeared to be more serious than among the Cree, in as much as they more often led to hospitalization. More injuries could have been avoided by respecting or being required to respect certain safety standard : wearing a protective helmets when operating ATVs and snowmobiles, wearing seat belts when driving or riding in cars, wearing floatation vests when travelling over water, imposing speed limits, posting adequate road signs, verifying drivers' licences, ensuring driver sobriety -- to name but a few steps of proven effectiveness. In subsequent analyses, it would be appropriate to group together several aspects of this survey as the latter relate to traumatisms, particularly those dealing with preventive behaviour when driving motor vehicles, the use of firearms, and so on, with various aspects of lifestyle such as frequency of activities within village confines, alcohol and drug use, perceived social problems, and reasons for seeking health services. It would be equally appropriate to include injuries causing long-term limitations, and explore the possibility of integrating intentional injuries, particularly attempted suicide.

## 9.16.5 Dental health

The rate of edentia among the Inuit of Nunavik was very high, and many individuals neither owned or regularly wore replacement prostheses. Except for 18 to 24 year-olds, a large proportion of the population was afflicted with a deficient masticatory apparatus. Few people used available services, and consultations were often made only in the event of emergency, pain, or the need for extraction. Fortunately, among 18 to 24 year-olds, the situation appeared to be improving, and continued efforts at prevention could help avoid tooth loss and other related problems among older adults.

Of note was the increase in the vulnerability of women with regard to edentia. Additional efforts must be made to better target this clientele and to avoid premature extraction.

Lastly, the reasons for the low rate of people wearing prostheses must be examined (such as availability, quality of services, and individual adaptation), and attempts must be made to reduce the functional deficiencies identified among adults and the elderly.

## 9.16.6 Overall health index

Inuit perception of state of health as measured by the overall health index showed that they judged their state of health the same manner as Americans, southern Quebecers, and Cree.

They considered themselves to be in better health when they were younger and in poorer health as they grew older, and men claimed to be in better health than women. The Inuit viewed themselves -- overall and among individuals in the 15-24 age group -- to be in poorer health than the Cree. Compared with Quebecers elsewhere in the province, individuals 0 to 14 years of age, especially males, described themselves as in better health, but Inuit women 45 years of age and over reported a generally poorer state of health.

From the standpoint of the overall health index, were sex and age to be excluded, no other variables studied allowed us to target subgroups demonstrating better or poorer states of health than the population as a whole. In other studies, socioeconomic, geographic or risk factors have made it possible to identify a group of people that have states of health different from the population as a whole. But among the Inuit, this was not possible and led to conclude as follows : either there were no differences in the state of health among various segments of the Inuit population, or the factors that would explain any such differences had yet to be unveiled.

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# CHAPTER 10

# RISK FACTORS LEADING TO CARDIOVASCULAR DISEASE

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# GLOSSARY

**Age adjusted rates**

Rates taking into account age differences in surveyed populations (e.g. Quebecers vs Inuit)

**Blood lipids**

Fat in the blood : cholesterol, triglycerides.

**BMI**

Body mass index computed by dividing weight (kg) by height squared ($m^2$).

**Cholesterol**

| | |
|---|---|
| **Normal serum cholesterol** | Ideal level is < 5.2 mmol/L |
| **Total serum cholesterol** | Fat content in blood |
| **High density lipoproteins (HDL)** | Good cholesterol carriers (see definition of lipoproteins on following page) |
| **Low density lipoproteins (LDL)** | Poor cholesterol carriers |
| **Total/HDL cholesterol** | Arteriogenic ratio or index |
| **Triglycerides** | Variety of blood lipids |

**CVD**

Cardiovascular disease.

**Dyslipoproteinemia**

Disrupted concentration of various lipoproteins in blood.

**Gestational diabetes**

Diabetes appearing during pregnancy and disappearing after delivery in approximately 90 % of cases.

**Glycaemia** (categories of)

| | |
|---|---|
| **Normal glycaemia** | Measure of glycaemia less than 6.4 mmol/L |
| **Risk of diabetes** | Measure of glycaemia equal to or greater than 6.4 mmol/L and less than 7.8 mmol/L |
| **Diabetes** | Measure of glycaemia equal to or greater than 7.8 mmol/L |

**HDL**

High density lipoproteins.

**High blood pressure (HBP)**

Diastolic blood pressure equal to or greater than 90 mmHg or on pharmacological or non-pharmacological treatment.

**Hypercholesterolemia**

Elevated level of cholesterol in the blood.

**Hyperinsulinemia**

Excessive volume of insulin in the blood.

**Insulinemia**

Volume insulin in the blood.

**LDL**

Cholesterol with a low density of lipoproteins.

**Lipoproteins**

Combination of blood lipids and proteins conveying fat through the blood. Lipoproteins carry blood cholesterol to tissue (Lipoproteins = HDL, LDL, VLDL).

**Lipoproteins and cholesterol**

| | |
|---|---|
| **Cholesterol** | Blood fat which, although required to maintain good health, contributes to the build-up of fatty deposits on artery walls (arteriosclerosis) when found in excessive quantity in blood. |
| **HDL/total cholesterol** | Arteriogenic ratio (ideal ratio is < 3.5). |
| **HDL** | Good carriers, i.e. convey cholesterol away from body cells and artery walls to liver. The ideal level is equal to or less than 9 mmol/L. |
| **LDL** | Poor carriers, i.e. convey cholesterol which tends to adhere to artery walls (arteriosclerosis). The ideal level is < 3.4 mmol/L. |

**Non insulin-dependent diabetes**

Diabetes requiring no insulin treatment (most common).

**Obesity** (indicators of)

| | |
|---|---|
| **BMI** | equal to or greater than 30 (measure of ponderal obesity) or |
| **WHR** | equal to or greater than 1 for men and equal to or greater than 0.85 for women (measure of truncal obesity) |

**Pathogenic**

Induces an illness or disease.

**WHR**

Waist/hip ratio obtained by dividing the waist measurement (cm) by the hip measurement (cm).

## 10.0 INTRODUCTION

Cardiovascular disease **(CVD)** represents the leading cause of mortality among men and women in both Québec and Canada (MSSS, 1989). In the province of Québec, in 1986, CVD was responsible for 40 % of deaths among men and 44 % among women (Santé Québec, 1991).

Between 1984 and 1988, 18 % of deaths among the Inuit were caused by CVD (Lafontaine and Raymond, 1989). As previously mentioned in Chapter 3 of this report, the rate of mortality owing to ischemic coronary disease is much lower in Nunavik than for the rest of the province. (Refer to section on polysaturated fat acids.) However, when considering the particular age structure of the Inuit population, CVD still ranks among the primary causes of mortality in Nunavik (Duval and Therrien, 1982).

CDV is also among the Inuit the principal factor leading to hospitalization (Blanchet, 1992). For the period from 1985 to 1989, the rate of hospitalization owing to this type of disease was comparable to that of the entire province of Québec (Blanchet, 1992).

Extensive research conducted in the field has resulted in the identification of the primary risk factors leading to CVD. Although certain factors such as heredity, aging and sex, cannot be modified, others can be prevented or controlled. The factors analysed in this chapter include high levels of **cholesterol** and **blood lipids, high blood pressure (HBP), diabetes** and **obesity.** Smoking and excessive alcohol consumption are not systematically covered in this chapter even though they are linked to CVD.

In both Québec and Canada, several researchers have documented the high prevalence of risk factors leading to CVD (Arnesen, 1992 ; SBESC, 1992). The survey on cardiovascular health conducted by Santé Québec in 1990 (Santé Québec, 1994a) served to determine the prevalence of risk factors leading to CVD in the Québec population. A similar survey was also carried out among the James Bay Cree in 1991 (Santé Québec, 1994b).

The prevalence of the risk factors leading to CVD, however, is not very well documented for the Inuit of Nunavik. Information on certain risk factors was, however, collected through the health survey conducted in 1983 and 1984 during the *Plasannouq* project (Blanchet *et al.*, 1991). The survey revealed that the prevalence of high blood pressure stood at 4 % in the Kativik area and that the majority of individuals living in the region had normal levels of serum cholesterol accompanied by a 20 % prevalence of obesity. However, this data cannot be compared with the results of this survey since different protocols were used.

The lack of comprehensive data on the prevalence of risk factors leading to CVD among the Inuit of Nunavik has hindered the development of appropriate prevention programmes. This survey therefore offers the opportunity to study the prevalence of certain risk factors among the Inuit population, namely **dyslipoproteinemia**, high blood pressure, diabetes, obesity and their combination.

## 10.1 LIMITS OF THE DATA

The results presented in this chapter stem from the analysis of the individual questionnaires, as well as the physical tests performed in clinics during the second round of individual in-home interviews. Data was collected for individuals aged between 18 and 74 years, and analysed by sex, age and geographical area. A series of questions was retrieved from the Québec Survey on Cardiovascular Health (1990) and the Santé Québec Health Survey of the James Bay Cree (1991) with a view to establishing comparisons among all three surveys.

The small number of individuals ranging between the ages of 65 and 74 sometimes complicated the statistical analysis of certain data. Moreover, as the age structure of the Inuit population differed greatly from that of Quebecers, rates were adjusted for all age groups **(age adjusted rates)**.

Various statistical analyses were performed, namely Student T-tests (for averages), comparison of proportions and chi-square tests (for proportions), Pearson's correlation coefficients, etc.

## 10.2 FIRST RISK FACTOR : CHOLESTEROL AND BLOOD LIPIDS

The results on cholesterol and blood lipids stem from the analysis of the clinical blood samples. Participants had been instructed not to eat anything after the evening meal the previous day.

The following lipid fractions were analysed : **total serum cholesterol, high density lipoproteins (HDL), low density lipoproteins (LDL)** and **triglycerides.** Analyses were performed in accordance with the criteria of the Lipid Research Clinic laboratory[1] and met the standardization and quality control requirements described elsewhere (Santé Québec, 1994a).

(1) The protocol is available from Santé Québec.

In this chapter, individuals likely to develop **CVD** were :

- those showing a **total cholesterol** level greater than or equal to 6.2 mmol/L (high cholesterol) ;
- those showing a level of low density lipoproteins greater than or equal to 3.4 mmol/L (high **LDL**) ;
- those showing a level of high density lipoproteins less than 0.9 mmol/L (low **HDL**) ;
- those showing a level of **triglycerides** greater than or equal to 2.3 mmol/L (high **triglycerides**) ;
- those showing a total **cholesterol/HDL** ratio greater than or equal to 5.0 (high **total cholesterol/HDL** ratio).

So, in this section, high values of total cholesterol, LDL or triglycerides and low values of HDL are associated with an increased risk of CVD. Moreover, the risk of CVD increases whenever the total cholesterol/HDL ratio is high.

## 10.2.1 Results

Table 10.1 shows the average values of total cholesterol, LDL, HDL, triglycerides and the ratio cholesterol/HDL, broken down by age and sex. The averages for the overall population were, respectively, 5.1, 3.1, 1.5, 1.2 and 3.7 mmol/L. The results indicated little variance between men and women, except for the HDL values which were greater among women (women : 1.6 ; men : 1,4 mmol/L, $p<0.001$). As for the total cholesterol/HDL ratio, it was significantly lower for women (3.4 compared with 3.9 for men, $p<0.001$). Average total cholesterol and HDL values increased with age. HDL values appeared to follow the same pattern (1.4 to 1.6 to 2.0 mmol/L).

The prevalence of risk factors varied in accordance with the lipid fractions analysed : total cholesterol values greater than or equal to 6.2 mmol/L (14 %), LDL values greater than or equal to 3.4 mmol/L (32 %), LDL values lesser than 0.9 mmol/L (7 %), triglycerides greater than or equal to 2.3 mmol/L (7 %) and total cholesterol/HDL greater than or equal to 5 (14 %) (Table 10.2). The prevalence of these risk factors varied little between men and women except for the HDL and total cholesterol/HDL ratio values. Indeed, 10 % of men and 4 % of women showed HDL values lesser than 0.9 mmol/L ($p<0.01$), whereas 19 % of men and 9 % of women had a total cholesterol/HDL ratio greater than or equal to 5 ($p<0.01$). The data also showed that the proportion of Inuit with elevated cholesterol and LDL levels increased with age.

# TABLE 10.1

## Average total cholesterol, LDL, HDL, triglycerides and total cholesterol/HDL ratio among the Inuit aged between 18 and 74 years, according to age and sex (average, mmol/L) [Inuit, 1992]

| CATEGORY | TOTAL CHOLESTEROL (mmol/L) | | LDL (mmol/L) | | HDL (mmol/L) | | TRIGLYCERIDES (mmol/L) | | CHOLESTEROL/HDL RATIO | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Average | Ep | Average | Ep | Average | Ep | Average | Ep | Average | Ep |
| **Males** | | | | | | | | | | |
| 18-34 years | 4.83 | 1,046 | 2.99 | 877 | 1.29 | 889 | 1.24 | 889 | 4.03 | 889 |
| 35-64 years | 5.34 | 731 | 3.21 | 609 | 1.51 | 616 | 1.24 | 616 | 3.85 | 616 |
| 65-74 years | 6.04 | 53 | 3.75 | 41 | 2.02 | 41 | 0.89 | 41 | 3.18 | 41 |
| **Total** | 5.07 | 1,830 | 3.10 | 1,527 | 1.39 | 1,546 | 1.23 | 1,546 | 3.93 | 1,546 |
| **Females** | | | | | | | | | | |
| 18-34 years | 4.85 | 1,014 | 2.79 | 888 | 1.60 | 888 | 1.04 | 888 | 3.23 | 888 |
| 35-64 years | 5.47 | 687 | 3.31 | 588 | 1.60 | 588 | 1.20 | 588 | 3.69 | 588 |
| 65-74 years | 5.68 | 42 | 3.32 | 42 | 1.95 | 42 | 0.89 | 42 | 3.23 | 42 |
| **Total** | 5.11 | 1,743 | 3.00 | 1,518 | 1.61 | 1,518 | 1.10 | 1,518 | 3.41 | 1,518 |
| **Total population** | | | | | | | | | | |
| 18-34 years | 4.84 | 2,060 | 2.89 | 1,765 | 1.44 | 1,777 | 1.14 | 1,777 | 3.63 | 1,777 |
| 35-64 years | 5.40 | 1,418 | 3.26 | 1,197 | 1.55 | 1,204 | 1.22 | 1,204 | 3.77 | 1,204 |
| 65-74 years | 5.88 | 95 | 3.54 | 83 | 1.98 | 83 | 0.89 | 83 | 3.21 | 83 |
| **Total** | 5.09 | 3,573 | 3.05 | 3,045 | 1.50 | 3,064 | 1.17 | 3,064 | 3.67 | 3,064 |

Average total cholesterol values have been calculated for the entire sample whereas other average values have been computed for individuals not having eaten anything for more than eight (8) hours.

# TABLE 10.2

## Prevalence of various blood lipid categories among the Inuit aged between 18 and 74 years, according to age and sex (%) [Inuit, 1992]

| LIPID | MALES | | FEMALES | | AGE GROUP | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 18-34 YEARS | | 35-64 YEARS | | 65-74 YEARS | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| **Total cholesterol (mmol/L)** | | | | | | | | | | | | |
| < 5.2 | 60.8 | 1,112 | 56.1 | 977 | 67.7 | 1,395 | 46.2 | 656 | 40.5 | 38 | 58.5 | 2,089 |
| 5.2-6.1 | 25.5 | 466 | 29.3 | 511 | 23.5 | 484 | 33.5 | 475 | 18.9 | 18 | 27.4 | 977 |
| ≥ 6.2 | 13.7 | 251 | 14.6 | 255 | 8.8 | 181 | 20.3 | 287 | 40.6 | 39 | 14.2 | 506 |
| **LDL (mmol/L)** | | | | | | | | | | | | |
| < 3.4 | 65.1 | 994 | 70.5 | 1,070 | 73.7 | 1,301 | 60.5 | 724 | 47.1 | 39 | 67.9 | 2,064 |
| 3.4-4.0 | 20.4 | 311 | 18.3 | 277 | 18.9 | 333 | 19.7 | 236 | 23.9 | 20 | 19.3 | 589 |
| 4.1-4.8 | 9.7 | 148 | 8.5 | 130 | 4.6 | 81 | 15.2 | 182 | 18.1 | 15 | 9.1 | 278 |
| ≥ 4.9 | 4.8 | 73 | 2.7 | 40 | 2.8 | 50 | 4.6 | 55 | 10.9 | 9 | 3.7 | 114 |
| **HDL (mmol/L)** | | | | | | | | | | | | |
| < 0.9 | 10.1 | 156 | 3.5 | 53 | 7.1 | 127 | 6.8 | 82 | 0.0 | 0 | 6.8 | 209 |
| ≥ 0.9 | 89.9 | 1,391 | 96.5 | 1,464 | 92.9 | 1,650 | 93.2 | 1,122 | 100 | 83 | 93.2 | 2,855 |
| **Triglycerides (mmol/L)** | | | | | | | | | | | | |
| < 2.3 | 91.9 | 1,421 | 95.1 | 1,443 | 93.9 | 1,668 | 92.4 | 113 | 100 | 83 | 92.5 | 2,864 |
| ≥ 2.3 | 8.1 | 126 | 4.9 | 74 | 6.1 | 109 | 7.6 | 92 | 0.0 | 0 | 6.5 | 200 |
| **Total cholesterol/HDL ratio** | | | | | | | | | | | | |
| < 3.5 | 48.5 | 751 | 61.0 | 927 | 58.3 | 1,035 | 48.8 | 587 | 65.6 | 55 | 54.7 | 1,677 |
| 3.5-4.9 | 32.3 | 499 | 30.5 | 462 | 28.7 | 511 | 35.3 | 425 | 31.1 | 26 | 31.4 | 962 |
| ≥ 5.0 | 19.2 | 297 | 8.5 | 129 | 13.0 | 231 | 15.9 | 192 | 3.3 | 3 | 13.9 | 425 |

In comparison with Quebecers and the Cree, the average total cholesterol and LDL values were slightly lower among the Inuit (Table 10.3). The average HDL level, however, was higher among the Inuit (1.5 mmol/L) than for both Quebecers (1.3 mmol/L) and the Cree (1.3 mmol/L). The average triglycerides level was lower among the Inuit (1.2 mmol/L) than for Quebecers (1.6 mmol/L) and the Cree (1.4 mmol/L). The same applied to the total cholesterol/HDL ratio which proved lower for the Inuit (3.7) than for both Quebecers (4.3) and the Cree (4.0).

The prevalence of lipids associated with a higher risk of CVD varied from one population to the next (Table 10.4). In general, levels were lower among the Inuit than among Quebecers. The prevalence of total cholesterol values greater than or equal to 6.2 mmol/L stood at 14 % among the Inuit compared with 19 % among Quebecers. The proportion of individuals for whom the level of triglycerides was greater than or equal to 2.3 mmol/L stood at 7 % among the Inuit as opposed to 17 % among Quebecers. Lastly, 14 % of the Inuit showed an elevated total cholesterol/HDL ratio compared with 27 % of Quebecers. Women showed a lower prevalence of HDL, triglycerides and total cholesterol/HDL ratio among both the Inuit and Quebecers.

The prevalence of a total cholesterol/HDL ratio greater than or equal to 5 was slightly lower among the Inuit than for the Cree (the proportions were the same for men and women). The proportion of Inuit women with low HDL values and elevated triglycerides was lower than that of Cree women. High levels of total cholesterol were more frequently observed among the Inuit than the Cree, in both men and women. Since HDL values included in the total cholesterol value were higher for the Inuit, the results respecting LDL values were more reliable. Although the proportion of Inuit women showing high LDL values was greater than that of Cree women, the results for men did not reveal the same trend.

## TABLEAU 10.3

**Average total cholesterol, LDL, HDL, triglycerides and total cholesterol/HDL ratio among the Inuit, the Cree (1991) and Quebecers (1990) aged between 18 and 74 years (average mmol/L) [Inuit, 1992]**

| POPULATION | TOTAL CHOLESTEROL | | LDL | | HDL | | TRIGLYCERIDES | | CHOLESTEROL/HDL RATIO | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Average | Ep | Average | Ep | Average | Ep | Average | Ep | Average | Ep |
| **INUIT** | | | | | | | | | | |
| Males | 5.07 | 1,830 | 3.10 | 1,527 | 1.39 | 1,547 | 1.23 | 1,547 | 3.93 | 1,547 |
| Females | 5.11 | 1,743 | 3.00 | 1,518 | 1.61 | 1,518 | 1.10 | 1,518 | 3.41 | 1,518 |
| Total | 5.09 | 3,573 | 3.05 | 3,045 | 1.50 | 3,065 | 1.17 | 3,065 | 3.67 | 3,065 |
| **CREE** | | | | | | | | | | |
| Males | 4.96 | 2,551 | 3.11 | 2,485 | 1.24 | 2,514 | 1.36 | 2,514 | 4.26 | 2,514 |
| Females | 4.68 | 2,533 | 2.77 | 2,479 | 1.29 | 2,502 | 1.36 | 2,495 | 3.83 | 2,502 |
| Total | 4.82 | 5,084 | 2.94 | 4,964 | 1.26 | 5,016 | 1.36 | 5,009 | 4.04 | 5,016 |
| **QUEBECERS** | | | | | | | | | | |
| Males | 5.27 | 2,471,085 | 3.28 | 2,319,994 | 1.20 | 2,397,215 | 1.83 | 2,425,945 | 4.69 | 2,395,957 |
| Females | 5.21 | 2,525,751 | 3.17 | 2,464,267 | 1.42 | 2,476,496 | 1.39 | 2,492,129 | 3.88 | 2,476,496 |
| Total | 5.24 | 4,996,836 | 3.22 | 4,784,261 | 1.31 | 4,873,711 | 1.61 | 4,918,074 | 4.28 | 4,872,453 |

# TABLE 10.4

**Prevalence of risk factors leading to CVD associated with blood lipids among the Inuit, the Cree (1991) and Quebecers (1990) aged between 18 and 74 years, according to sex (%) [Inuit, 1992]**

| POPULATION | TOTAL CHOLESTEROL ≥ 6.2 mmol/L | | LDL ≥ 3.4 mmol/L | | HDL < 0.9 mmol/L | | TRIGLYCERIDES ≥ 2.3 mmol/L | | CHOLESTEROL/HDL RATIO ≥ 5.0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| **INUIT** | | | | | | | | | | |
| Males | 13.7 | 251 | 34.9 | 533 | 10.1 | 156 | 8.1 | 126 | 19.2 | 297 |
| Females | 14.6 | 255 | 29.5 | 447 | 3.5 | 53 | 4.9 | 74 | 8.5 | 129 |
| Total | 14.2 | 506 | 32.2 | 980 | 6.8 | 209 | 6.5 | 200 | 13.9 | 426 |
| **CREE** | | | | | | | | | | |
| Males | 7.4 | 189 | 35.3 | 877 | 10.9 | 275 | 9.6 | 242 | 24.9 | 626 |
| Females | 5.1 | 130 | 18.3 | 453 | 8.7 | 218 | 9.4 | 234 | 12.8 | 319 |
| Total | 6.3 | 319 | 26.8 | 1,330 | 9.8 | 493 | 9.5 | 476 | 18.8 | 945 |
| **QUEBECERS** | | | | | | | | | | |
| Males | 20.6 | 508,653 | 41.6 | 965,501 | 12.4 | 297,729 | 22.6 | 548,612 | 38.0 | 910,614 |
| Females | 17.7 | 445,900 | 36.4 | 896,105 | 3.2 | 78,294 | 11.1 | 276,378 | 16.6 | 410,422 |
| Total | 19.1 | 954,553 | 38.9 | 1,861,606 | 7.7 | 376,023 | 16.8 | 824,990 | 27.1 | 1,321,036 |

### 10.2.2 Discussion

Average values for HDL were higher among the Inuit than for Quebecers while those for triglycerides and the total cholesterol/HDL ratio were lower. Moreover, the proportion of individuals with a high level of triglycerides and an elevated total cholesterol/HDL ratio was clearly lower among the Inuit than for Quebecers. These observations could be partially explained by the traditional eating habits of the Inuit, based upon a significant consumption of seafood. This theory is further substantiated by studies focusing upon the effect of the high consumption of seafood rich in Omega-3 type polysaturated fat which has a beneficial impact upon serum triglyceride levels. Moreover, as presented in Chapter 3 of this report (Contaminants), the average serum Omega-3 of the Inuit population was very high (9.75 % compared with 1 % among the average North American).

After comparing these results which describe the lipidic profile of the Inuit with those of Quebecers and the Cree, and considering the positive correlation between Omega-3s and HDL and the negative correlation between Omega-3s and triglycerides (men of all ages and women aged 45 years and over), it would appear that the generally high intake of this type of fatty acid could very well contribute to the low incidence of CVD. Finally, if one takes into account recent developments in eating habits, the prevalence of high-risk behaviour (tobacco, alcohol, sedentary way of life) and the significant prevalence of obesity, the Inuit population could be headed for increased risk of CVD.

## 10.3 SECOND RISK FACTOR : HIGH BLOOD PRESSURE

Blood pressure measurements were taken during the two clinical visits by nurses trained according to stringent, well-defined standards (Santé Québec, 1994a). During each visit two blood pressure readings were taken using a mercury sphygmomanometer and cuffs of appropriate dimensions. Participants were seated and the first and fifth phases of the Korotkoff sound scale were used to indicate the systolic and diastolic pressure respectively. Whenever the sounds dropped to zero, the fourth phase of the Korotkoff scale was used to establish the diastolic pressure. Information on the knowledge of the Inuit regarding treatment status was also collected during the in-home interviews. A total of four blood pressure readings were taken. The analysis of the readings was performed using average pressure levels measured. High blood pressure was defined as a diastolic reading of 90 mmHg or more or being on pharmacological or non-pharmacological treatment.

## 10.3.1 Results

The Inuit population demonstrated a moderate knowledge of high blood pressure and the various risk factors leading to CVD. Nearly 55 % of the Inuit had had their blood pressure taken by a health professional in the past, which was considerably lower than the results derived from the Québec Survey on Cardiovascular Health (97 %) (1990). Moreover, 4 % of the respondents declared not using salt at the table and recognizing the link between salt and high blood pressure, whereas 6 % mentioned using salt knowing its association with high blood pressure. After respondents were asked to identify factors leading to high blood pressure, 12 % mentioned sugar as a cause of high blood pressure, 7 % stress and emotions, 6 % smoking, 5 % alcohol, 5 % fat intake and 4 % overweight. None of the Inuit considered salt as a primary or secondary cause of high blood pressure. Sixteen per cent of respondents considered high blood pressure as one of the primary causes of CVD.

Some 6 % of the Inuit from Nunavik had or had been treated for high blood pressure which was significantly lower than the 14 % prevalence observed among the James Bay Cree and the remainder of the Québec population. Table 10.5 shows the distribution of high blood pressure by age and sex. Prevalence was lower for the Inuit compared with the Cree and Quebecers, in nearly all age groups for both men and women. Table 10.5 also illustrates the prevalence of high blood pressure in accordance with education and profession. Results indicate that the incidence of high blood pressure is lower among white-collar workers and individuals with a high school diploma and in a lower age group.

Individuals suffering from high blood pressure often ignored their condition. Among the Inuit population, 55 % of those with high blood pressure knew that they had high blood pressure and controlled it through treatment. Nearly 6 % of aware hypertensives on treatment were not controlled. Some 14 % of the Inuit suffering from high blood pressure knew that their condition was neither being treated nor controlled. Lastly, 25 % of individuals with high blood pressure were not aware of their condition. This last figure was comparable with that observed among the Québec population at large.

# TABLE 10.5

**Prevalence of high blood pressure among the Inuit aged between 18 and 74 years, according to profession, education, age and sex (%) [Inuit, 1992]**

| CHARACTERISTIC | PREVALENCE OF HBP | |
|---|---|---|
| | % | Ep |
| **Males / Total** | 7.1* | 135 |
| 18-24 years | 6.7 | 35 |
| 25-44 years | 3.7 | 35 |
| 45 years + | 14.3* | 65 |
| **Females / Total** | 4.8*↓ | 86 |
| 18-24 years | 1.8 | 9 |
| 25-44 years | 3.2 | 28 |
| 45 years + | 11.6*↓ | 49 |
| **TOTAL / Males and Females** | 6.0*↓ | 221 |
| **Profession / Total** | | |
| Blue collar | 9.4 | 82 |
| White collar | 2.1*↓ | 20 |
| **Education / Total** | | |
| None or primary | 9.6*↓ | 128 |
| High school | 2.8* | 42 |
| College | 8.1 | 23 |

* Lower than the results from the Québec Survey on Cardiovascular Disease and Nutrition, 1990.

↓ Lower than the results from the Santé Québec Health Survey of the James Bay Cree, 1991.

Obesity plays a pathogenic role in the incidence of high blood pressure and acts as independent risk factor leading to CVD. As observed in the studies conducted among the Cree and Quebecers, the prevalence of high blood pressure was greater among obese individuals (Table 10.6) The prevalence of high blood pressure in sedentary individuals was greater than that observed among « active » Inuit and Quebecers. Regular consumption of alcohol, a factor which can contribute to increasing blood pressure, was similar among the Inuit with either normal or high blood pressure, leading to the assumption that no effort had been made to reduce blood pressure by a non-pharmacological, therapeutic means. Moreover, the number of former heavy drinkers was very low among individuals with high blood pressure. The use of tobacco, a significant risk factor leading to CVD, was as frequent among the Inuit with high blood pressure as those with normal blood pressure. Efforts devoted so far to reducing morbidity and, indirectly, the overall risk of CVD have proven rather ineffective.

## TABLE 10.6

**Prevalence of high blood pressure in accordance with BMI, WHR and level of physical activity among Inuit males and females aged between 18 and 74 years (%), [Inuit, 1992]**

| RISK FACTOR | MALES | | FEMALES | | TOTAL | |
|---|---|---|---|---|---|---|
| | % | Ep | % | Ep | % | Ep |
| **BMI (body mass index)** | | | | | | |
| < 30 | 4.8 | 78 | 4.5 | 55 | 4.7 | 133 |
| ≥ 30 | 20.3 | 57 | 8.2 | 32 | 13.3 | 89 |
| **WHR (waist/hip ratio)** | | | | | | |
| Normal | 6.1 | 106 | 4.0 | 32 | 5.5 | 138 |
| High | 18.5 | 29 | 6.8 | 55 | 8.7 | 84 |
| **Active (at least one a month)** | 4.4 | 32 | 1.1 | 5 | 3.1 | 37 |
| **Sedentary** | 10.5 | 90 | 6.6 | 79 | 8.3 | 169 |

Nearly half of high blood pressure sufferers were treated with medication. Other means of control (salt-free diet, weight loss, etc.) were much less common.

## 10.3.2 Discussion

This section focuses upon the prevalence of high blood pressure among the Inuit. The reasons for this phenomenon cannot be identified with the data from this survey and should be analysed by means of a specific study. Nonetheless, one can assume that, as in other native groups, genetic factors inherent to the Inuit population tend to decrease the incidence of high blood pressure. For certain well-defined native populations, the prevalence of high blood pressure can indeed deviate from expected results. Such is the case of the Pima in the southern of the United States whose high incidence of non insulin-dependent diabetes, **hyperinsulinemia** and resistance to insulin can falsely indicate a high prevalence of high blood pressure (Saad *et al.*, 1990, 1991).

Obesity plays a significant role in high blood pressure as observed in this study. As in other surveys, the prevalence of high blood pressure increased among overweight Inuit.

The proportion of individuals with high blood pressure who were not aware of their condition was comparable to the proportions observed among the Cree and Quebecers. The Inuit whose high blood pressure had not been controlled (known or unknown, treated or untreated) represented 45 % of all sufferers. It is clear that the health care system could contribute to the detection and treatment of high blood pressure despite the fact that the reasons for this result remain nebulous. Non-pharmacological means such as diet, exercise and weight loss, which have proven effective in treating high blood pressure could be used more frequently while taking into account cultural factors. One must also deal with compliance problems and anticipate the side-effects of drugs. Moreover, the cumulative effect of the use of tobacco and high blood pressure on cardiovascular morbidity and mortality is a well-known fact. Special efforts must be devoted to reducing the use of tobacco and alcohol consumption among high blood pressure sufferers. The results of this survey would appear to indicate that although efforts have indeed been made, they are not yielding the expected success.

## 10.4 THIRD RISK FACTOR : DIABETES

In this survey, data on diabetes was collected twice, namely during the individual in-home interviews where respondents were asked whether a health professional had ever told them that they had diabetes, without making a distinction between **gestational diabetes** and other types, and during the clinical visits where blood samples were taken.

**Glycaemia** and **insulinemia** were measured from plasma taken from individuals who had not eaten for 12 hours. The results were interpreted in accordance with the requirements of the National Diabetes Data Group (1979). Glycaemia lower than 6.4 mmol/L was considered

normal. Subjects who showed values between 6.4 and 7.8 mmol/L were deemed likely to develop diabetes. Individuals with values greater than or equal to 7.8 mmol/L were classified as diabetic.[1]

Some 15 % of men and 13 % of women declared having eaten within six hours prior to the blood sample. The average glycaemia of each age group, and sex as well as standard deviations were calculated first for the sample comprising subjects who had not eaten for more than six hours, then for the entire sample. The averages did not seem to be affected by the inclusion of subjects who had eaten. The results presented have therefore been calculated for the sample as a whole.

Finally, the prevalence of self-reported diabetes based upon data from the Individual Questionnaires did not seem valid and led to an overestimated declaration of the previous diagnosis of diabetes. The question was indeed formulated in a way that made it difficult to distinguish between diabetics and individuals merely showing excessive blood sugar. Moreover, gestational diabetes (present in Nunavik) can be mistaken for **non-insulin-dependent diabetes**. Despite these limitations, the question was left in the questionnaire with a view to comparing various Santé Québec surveys. A similar bias appeared in the surveys conducted on CVD (1990), among the Cree (1991), and among the Inuit (1992).

## 10.4.1 Results

Average glycaemia stood at 5.3 mmol/L among men and 5.1 mmol/L among women. Age did not seem to affect the results. It should be noted that the average glycaemia of the Inuit population was somewhat similar to that observed among the Cree (men : 5.0 mmol/L ; women : 5.4 mmol/L).

Only 2 % of the Inuit (men and women) had a glycaemia level equal to or greater than 7.8 mmol/L (Table 10.7). Some 3 % of the female respondents and 6 % of the male subjects had a glycaemia concentration ranging between 6.4 and 7.8 mmol/L. For both sexes, the proportion of individuals showing a glycaemia value compatible with the presence of diabetes varied by age. The distribution of men by category of glycaemia among the Cree was similar to that observed among the Inuit. The Cree women, however, showed a much higher prevalence of diabetes than the Inuit women (8 % of Cree women compared with 3 % of Inuit women).

(1) The measures taken during this survey cannot possibly lead to the establishing of a diagnosis as diagnoses are normally based upon repeated measurements. In cases where values were greater than or equal to 7.8 mmol/L, the Inuit were encouraged to submit to another test at the clinic.

During the in-home interviews, 8 % of the respondents aged 15 years and over mentioned that they had been diagnosed as diabetic by a health professional. The proportion was higher among women (12 %) than men (3 %) and varied in accordance with age. Among the Cree, these proportions were 15 % for women and 4 % for men. Among the individuals aged 45 years and over, some 13 % reported having been diagnosed as diabetic. This proportion stood at 7 % among the Inuit aged between 15 and 24 years and 6 % in the 25-44 age group. The proportion between the two costal areas (9 % for Hudson and 7 % for Ungava) varied very little.

At the time of the survey, 25 % of the Inuit who had been diagnosed as diabetic, confirmed being treated for the condition.

## TABLE 10.7

**Prevalence of glycaemia categories among the Inuit aged between 18 and 74 years, according to age and sex (%) [Inuit, 1992]**

| GLYCAEMIA | MALES | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 18-24 YEARS | | 25-44 YEARS | | 45-74 YEARS | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep |
| < 6.4 mmol/L | 97.3 | 490 | 89.7 | 776 | 88.7 | 401 | 91.6 | 1,667 |
| ≥ 6.4 et < 7.8 mmol/L | 2.7 | 14 | 9.6 | 83 | 4.6 | 21 | 6.4 | 118 |
| ≥ 7.8 mmol/L | 0 | 0 | 0.7 | 6 | 6.7 | 30 | 2.0 | 36 |
| | FEMALES | | | | | | | |
| < 6.4 mmol/L | 98.6 | 408 | 95.7 | 773 | 88.2 | 375 | 94.5 | 1,556 |
| ≥ 6.4 et < 7.8 mmol/L | 1.4 | 6 | 2.6 | 21 | 5.7 | 24 | 3.1 | 51 |
| ≥ 7.8 mmol/L | 0 | 0 | 1.6 | 13 | 6.1 | 26 | 2.4 | 39 |
| | TOTAL | | | | | | | |
| < 6.4 mmol/L | 97.9 | 898 | 92.6 | 1,549 | 88.5 | 776 | 93.0 | 3,223 |
| ≥ 6.4 et < 7.8 mmol/L | 2.1 | 20 | 6.2 | 104 | 5.1 | 45 | 4.9 | 169 |
| ≥ 7.8 mmol/L | 0 | 0 | 1.2 | 19 | 6.4 | 56 | 2.1 | 75 |

### 10.4.2 Discussion

The proportion (8 %) of Inuit aged between 18 and 74 years having declared that a health professional had diagnosed them as diabetic (or had told them that their blood contained sugar) was slightly greater than that of Quebecers (5 %) in 1990 and comparable to that shown by the Cree (9 %). The data, however, was not sufficient to conclude that the prevalence of diabetes in Nunavik was greater than that in other Québec regions. The measure of prevalence used was not sufficiently valid as only 2 % of the Inuit had a glycaemia value indicative of diabetes.

During the eighties, various American Indian populations showed the highest prevalence of diabetes in the world which seems to be directly related to the adoption of a lifestyle not their own. The longer natives have been in contact with immigrants, the greater the prevalence of diabetes (Schraer *et al.*, 1988 ; West, 1989). Native populations farther north sustained contact with immigrants much later than those in the more southern reaches. Indeed the sedentarization of the Inuit of Nunavik dates back only to the 1960s. Prior to adopting a more sedentary way of life, their diet consisted of game, fish and gathered vegetables or fruits. These foods had a high protein and lipid content but low level of glucides. With food imported from southern Québec now available in all villages, the Inuit are subject to a higher glucide intake and therefore a greater supply of energy. Energy requirements, however, have decreased with dwindling hunting and fishing activities. These recent changes in the lifestyle of the Inuit of Nunavik may have impacted the prevalence of diabetes. It is also possible that the more recent exposure to Euro-American lifestyle would partially explain the low prevalence of diabetes observed among the Inuit of northern Québec (Schraer *et al.*, 1988 ; Young *et al.*, 1990 ; Thouez *et al.*, 1990). We can therefore conclude that measured diabetes appeared to be present in Nunavik, but that its prevalence was lower than that observed among many other native communities across North America.

## 10.5 FOURTH RISK FACTOR : OBESITY

The data contained in this section was taken from the height, weight, waistline and hip measurements taken during the clinical visit. These measurements were used to calculate two indices of obesity, namely the **body mass index (BMI)** and the **waist/hip ratio (WHR).** Subject height was measured while they were standing on a hard surface without their shoes, their body leaning against a wall. Measurements were taken using a rigid square and a metric tape. Weight was measured with portable scales.

Waistline measurements were taken by placing the tape horizontally where a narrowing of the waist was detectable. Hip measurements were taken with the tape placed horizontally around

the hips, on a level with the pubic symphysis and the most protruding portion of the buttocks. The four measurements were recorded to the nearest centimetre.

Two obesity measurements were used, namely the BMI and the WHR. The BMI is a widely used obesity index (BMI ≥ 30) whereas the WHR serves to evaluate fat located in the abdominal area and normally more active from a metabolic standpoint. WHR values greater than or equal to 1.0 among men and 0.85 among women indicated truncal obesity. This section covered the prevalence and metabolic effect of obesity. Readers should refer to Chapter 5 for results on data, behaviour and treatment pertaining to obesity.

### 10.5.1 Results

Among the Inuit, the prevalence of ponderal and truncal obesity stood at 19 % and 28 % respectively. These proportions were higher than those observed among Quebecers and lower than those displayed by the Cree (Table 10.8).

## TABLE 10.8

**Prevalence of ponderal and truncal obesity among the Inuit, the Cree (1991) and Quebecers (1990) aged between 18 and 74 years (%) [Inuit, 1992]**

| OBESITY | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Ponderal obesity - BMI ≥ 30 | 19.0 | 666 | 47.5 | 2,388 | 12.8 | 615,946 |
| Truncal obesity - WHR | 27.7 | 964 | 52.2 | 2,616 | 11.2 | 551,107 |

Among the Inuit, the prevalence of ponderal obesity was higher for women (24 %) than for men (15 %). The same proportions applied to individuals with truncal obesity (51 % for women and 8 % for men). A higher prevalence for women had already been observed among the Cree (ponderal and truncal obesity) and among Quebecers (truncal obesity) (Table 10.9). The values obtained for men respecting both ponderal and truncal obesity were essentially similar for the Inuit and Quebecers, whereas the values recorded among the Cree were significantly higher.

# TABLE 10.9

**Prevalence of ponderal and truncal obesity among the Inuit, the Cree (1991) and Quebecers (1990) aged between 18 and 74 years, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| **Ponderal obesity (BMI)** | | | | | | |
| **Males** | | | | | | |
| 18-34 years | 6.9 | 75 | 25.5 | 380 | 7.3 | 72,479 |
| 35-64 years | 25.0 | 188 | 57.1 | 520 | 16.4 | 203,098 |
| 65-74 years | 33.5 | 18 | 53.2 | 80 | 15.8 | 30,045 |
| Total | 14.8 | 281 | 38.4 | 980 | 12.6 | 305,622 |
| **Females** | | | | | | |
| 18-34 years | 16.7 | 147 | 49.1 | 682 | 6.8 | 60,793 |
| 35-64 years | 34.5 | 238 | 66.0 | 622 | 16.1 | 203,129 |
| 65-74 years | 0.0 | 0 | 72.1 | 105 | 19.0 | 46,403 |
| Total | 23.9 | 385 | 56.9 | 1,409 | 12.9 | 310,325 |
| **Truncal obesity (WHR)** | | | | | | |
| **Males** | | | | | | |
| 18-34 years | 2.5 | 27 | 17.1 | 255 | 2.9 | 28,909 |
| 35-64 years | 15.4 | 116 | 43.7 | 398 | 9.1 | 114,777 |
| 65-74 years | 22.6 | 12 | 62.6 | 88 | 17.5 | 33,891 |
| Total | 8.2 | 155 | 29.2 | 741 | 7.3 | 177,577 |
| **Females** | | | | | | |
| 18-34 years | 37.9 | 327 | 66.7 | 923 | 6.0 | 54,696 |
| 35-64 years | 65.4 | 449 | 87.1 | 821 | 18.2 | 236,312 |
| 65-74 years | 79.3 | 33 | 89.5 | 131 | 32.9 | 82,522 |
| Total | 50.8 | 809 | 75.8 | 1,875 | 15.2 | 373,530 |

Among the Inuit, the prevalence of ponderal and truncal obesity increased with age (with the exception of women aged 65 years and over). An increase in the prevalence of ponderal obesity with age had already been observed among Cree and Québec women[1], whereas the prevalence of truncal obesity was reported to increase with age among Cree men, as well as Québec men and women.

The prevalence of obesity varied in accordance with the coastal region, profession and level of education (Table 10.10). Truncal obesity was more prevalent among the Inuit living on the shore of Hudson Bay than among those on the Ungava shore (34 % vs 19 %). Only the prevalence of ponderal obesity was higher among blue collar than white collar workers. Lastly, men with a high school diploma showed the lowest incidence of obesity compared with the other two groups. The results revealed that the same phenomenon applied to women for ponderal obesity, whereas truncal obesity decreased according to the level of education achieved.

(1) A biased selection could explain the decreasing prevalence of ponderal obesity among Québec men aged 65 years and over compared with those in younger age groups (younger contemporaries). An appreciable proportion of men in the 35-64 age group who develop ponderal obesity die before reaching the age of 65.

## TABLE 10.10

**Prevalence of ponderal and truncal obesity among the Inuit aged between 18 and 74 years, according to education, profession and coastal region (%) [Inuit, 1992]**

| CHARACTERISTICS | MALES | | | | FEMALES | | | | TOTAL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BMI ≥ 30 | | WHR ≥ 1.0 | | BMI ≥ 30 | | WHR ≥ 0.85 | | BMI ≥ 30 | | WHR ≥ 1.0 m<br>WHR ≥ 0.85 f | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| **Coastal region** | | | | | | | | | | | | |
| Hudson Bay | 12.3 | 136 | 12.5 | 137 | 23.4 | 215 | 60.1 | 540 | 17.3 | 351 | 33.9 | 677 |
| Ungava Bay | 18.4 | 145 | 2.2 | 18 | 24.5 | 170 | 38.8 | 269 | 21.3 | 315 | 19.3 | 287 |
| **Profession** | | | | | | | | | | | | |
| White collar | 10.8 | 40 | 6.1 | 23 | 22.3 | 117 | 42.4 | 223 | 17.5 | 157 | 27.3 | 246 |
| Blue collar | 24.0 | 163 | 10.6 | 72 | 27.0 | 48 | 58.3 | 104 | 24.7 | 211 | 20.5 | 176 |
| **Education level** | | | | | | | | | | | | |
| Primary | 19.7 | 122 | 14.1 | 87 | 31.6 | 210 | 58.6 | 384 | 25.9 | 332 | 37.0 | 471 |
| High School | 8.2 | 61 | 2.4 | 18 | 16.5 | 107 | 40.6 | 264 | 12.1 | 168 | 20.4 | 282 |
| College | 24.8 | 51 | 10.2 | 21 | 26.3 | 19 | 23.9 | 15 | 25.2 | 70 | 13.4 | 36 |

## 10.5.2 Prevalence of risk factors leading to CVD by BMI and WHR categories

Overall results indicated that the prevalence of high values of total cholesterol, LDL, triglycerides, high blood pressure and diabetes was significantly more frequent among men with an elevated BMI (Table 10.11). Indeed, 12 % of men with a BMI lower than 30 showed elevated cholesterol values , compared with 26 % of men with higher BMI values.

The proportion of women evidencing risk factors owing to the concentration levels of HDL, LDL, triglycerides, cholesterol/HDL ratio and glycaemia was significantly higher among those whose BMI was greater than or equal to 30. For example, 10 % of women whose BMI was high had HDL values lesser than 0.9 mmol/L compared with only 1 % of women whose BMI was less than 30.

**Lipoproteins,** blood pressure, glycaemia and insulinemia averages were compared in obese and non-obese individuals (Table 10.12) by dichotomizing BMI and WHR values. When compared with men whose BMI was less than 30, men with a BMI greater than or equal to 30 reported higher total cholesterol, LDL and triglyceride values, lower HDL values, a higher cholesterol/HDL ratio and higher blood pressure. Men whose WHR was greater than or equal to 1.0 showed lower average HDL values, and both higher blood pressure and glycaemia values than men whose WHR was less than 1.0.

Among women, statistically meaningful differences were observed between risk factor averages in accordance with the BMI ( $< 30$ vs $\geq 30$) (except for total cholesterol and LDL) and WHR ( $< 0.85$ vs $\geq 0.85$) (except for HDL, total cholesterol and HDL averages) categories.

These results indicated that a weight increase with respect to size as well as an increase in abdominal fat among the Inuit had an adverse effect on their metabolism which could eventually lead to a greater risk of CVD.

# TABLE 10.11

## Prevalence of risk factors leading to CVD among the Inuit aged between 18 and 74 years, according to sex (%) [Inuit, 1992]

| RISK FACTOR | MALES | | | | | FEMALES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | BMI < 30 | | BMI ≥ 30 | | $X^2$ | BMI < 30 | | BMI ≥ 30 | | $X^2$ |
| | % | Ep | % | Ep | | % | Ep | % | Ep | |
| **Cholesterol** | | | | | | | | | | |
| < 6.2 | 88.4 | 1,367 | 73.9 | 204 | p < 0.02 | 85.8 | 1,019 | 83.6 | 309 | N/S |
| ≥ 6.2 | 11.6 | 180 | 26.1 | 71 | | 14.2 | 168 | 16.4 | 61 | |
| Total | 100 | 1,547 | 100 | 275 | | 100 | 1,187 | 100 | 370 | |
| **HDL** | | | | | | | | | | |
| < 0.9 | 8.1 | 105 | 20.8 | 51 | p < 0.03 | 1.4 | 15 | 9.7 | 34 | p < 0.007 |
| ≥ 0.9 | 91.9 | 1,187 | 79.2 | 196 | | 98.6 | 1,017 | 90.3 | 318 | |
| Total | 100 | 1,292 | 100 | 247 | | 100 | 1,032 | 100 | 352 | |
| **LDL** | | | | | | | | | | |
| < 3.4 | 67.8 | 876 | 48.4 | 110 | p < 0.04 | 75.3 | 777 | 56.3 | 198 | p < 0.02 |
| ≥ 3.4 | 32.2 | 416 | 51.6 | 117 | | 24.7 | 255 | 43.7 | 154 | |
| Total | 100 | 1,292 | 100 | 227 | | 100 | 1,032 | 100 | 352 | |
| **Triglycerides** | | | | | | | | | | |
| < 2.3 | 96.2 | 1,244 | 68.6 | 169 | p < 0.0001 | 98.3 | 1,014 | 88.8 | 313 | p < 0.005 |
| ≥ 2.3 | 3.8 | 48 | 31.4 | 78 | | 1.7 | 18 | 11.2 | 39 | |
| Total | 100 | 1,292 | 100 | 247 | | 100 | 1,032 | 100 | 352 | |
| **Cholesterol/HDL** | | | | | | | | | | |
| < 5.0 | 85.1 | 1,100 | 57.8 | 143 | p < 0.002 | 94.7 | 977 | 82.9 | 292 | p < 0.01 |
| ≥ 5.0 | 14.9 | 192 | 42.2 | 104 | | 5.3 | 55 | 17.1 | 60 | |
| Total | 100 | 1,292 | 100 | 247 | | 100 | 1,032 | 100 | 352 | |
| **HBP[a]** | | | | | | | | | | |
| absence | 95.2 | 1,537 | 79.7 | 224 | P < 0.0006 | 95.5 | 1,170 | 91.8 | 353 | N/S |
| presence | 4.8 | 78 | 20.3 | 57 | | 4.5 | 55 | 8.2 | 32 | |
| Total | 100 | 1,615 | 100 | 281 | | 100 | 1,225 | 100 | 385 | |
| **Diabetes[b]** | | | | | | | | | | |
| absence | 99.0 | 1,523 | 87.5 | 241 | P < 0.0001 | 98.4 | 1,152 | 90.7 | 335 | P < 0.009 |
| presence | 1.0 | 15 | 12.5 | 34 | | 1.6 | 19 | 9.3 | 34 | |
| Total | 100 | 1,538 | 100 | 275 | | 100 | 1,171 | 100 | 369 | |

a HBP (high blood pressure) presence = diastolic BP ≥ 90 mmHg or BP controlled by pharmacological or non-pharmacological treatment.

b Diabetes : presence = glycaemia ≥ 7.8 mmol/L or controlled by pharmacological treatment.

# TABLE 10.12

## Average lipoproteins, blood pressure, glycaemia and insulinemia by BMI and WHR categories among Inuit males and females aged between 18 and 74 years [Inuit, 1992]

| | MALES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | BMI | | | | | WHR | | | | |
| | < 30 | | ≥ 30 | | T-Test | < 1.0 | | ≥ 1.0 | | T-Test |
| | Aver. | Ep | Aver. | Ep | | Aver. | Ep | Aver. | Ep | |
| **Lipoproteins** | | | | | | | | | | |
| Cholesterol | 5.0 | 1,547 | 5.7 | 275 | p=0.002 | 5.0 | 1,659 | 5.3 | 155 | N/S |
| HDL | 1.4 | 1,292 | 1.2 | 247 | p=0.034 | 1.4 | 1,407 | 1.2 | 132 | p=0.011 |
| LDL | 3.0 | 1,292 | 3.4 | 227 | p=0.035 | 3.1 | 1,394 | 3.3 | 125 | N/S |
| Triglycerides | 1.1 | 1,292 | 2.1 | 247 | p=0.001 | 1.2 | 1,407 | 1.7 | 132 | p=0.098 |
| Chol/HDL | 3.8 | 1,292 | 4.8 | 247 | p<0.001 | 3.9 | 1,407 | 4.4 | 132 | N/S |
| **Blood pressure** | | | | | | | | | | |
| Systolic | 114.8 | 1,615 | 125.0 | 281 | p<0.001 | 115.6 | 1,733 | 123.3 | 155 | p=0.005 |
| Diastolic | 75.3 | 1,615 | 82.5 | 281 | p<0.001 | 75.9 | 1,733 | 82.0 | 155 | p=0.001 |
| Glycaemia | 5.1 | 1,283 | 6.0 | 247 | p=0.078 | 5.1 | 1,398 | 6.8 | 132 | p=0.049 |
| Insulinemia | 56.4 | 1,235 | 73.0 | 235 | p=0.071 | 57.9 | 1,357 | 73.4 | 113 | N/S |

| | FEMALES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | BMI | | | | | WHR | | | | |
| | < 30 | | ≥ 30 | | T-Test | < 0.85 | | ≥ 0.85 | | T-Test |
| | Aver. | Ep | Aver. | Ep | | Aver. | Ep | Aver. | Ep | |
| **Lipoproteins** | | | | | | | | | | |
| Cholesterol | 5.1 | 1,187 | 5.3 | 370 | p=0.176 | 5.0 | 758 | 5.2 | 780 | N/S |
| HDL | 1.7 | 1,032 | 1.4 | 352 | p=0.002 | 1.6 | 670 | 1.6 | 696 | N/S |
| LDL | 3.0 | 1,032 | 3.2 | 352 | p=0.087 | 3.0 | 670 | 3.1 | 696 | N/S |
| Triglycerides | 1.0 | 1,032 | 1.4 | 352 | p<0.001 | 1.0 | 670 | 1.2 | 696 | p=0.003 |
| Chol/HDL | 3.2 | 1,032 | 4.0 | 352 | p<0.001 | 3.3 | 670 | 3.6 | 696 | p=0.052 |
| **Blood pressure** | | | | | | | | | | |
| Systolic | 108.3 | 1,225 | 119.5 | 385 | p<0.001 | 107.2 | 783 | 114.7 | 809 | p<0.001 |
| Diastolic | 70.0 | 1,225 | 76.9 | 385 | p<0.001 | 70.1 | 783 | 73.1 | 809 | p=0.011 |
| Glycaemia | 4.9 | 1,017 | 5.9 | 352 | p=0.004 | 4.8 | 654 | 5.5 | 696 | p=0.001 |
| Insulinemia | 47.7 | 995 | 102.8 | 330 | p=0.001 | 42.1 | 649 | 81.6 | 658 | p<0.001 |

If p > 0.05, T-Test results are not statistically meaningful (N/S).

## 10.5.3 Combined risk factors and the metabolic CVD risk syndrome

In an effort to compare the results of this survey with those from others conducted among Quebecers and the James Bay Cree, three major risk factors leading to CVD were retained, namely **hypercholesterolemia**, high blood pressure and the use of tobacco (Table 10.13). In general, 16 % of the Inuit who took part in the survey showed none of these risk factors, 55 % had one of them, 28 % two, and 2 % three. The prevalence of the primary risk factors leading to CVD varied little by sex. The use of tobacco proved one of the most prevalent risk factors. Some 73 % and 94 % of the Inuit who displayed one and two risk factors respectively were regular smokers. Lastly, Table 10.13 illustrates the prevalence of all risk factors combined broken down by age. It should be noted that the risk factors leading to CVD were absent among twice as many Quebecers and Cree, 32 % and 36 % respectively, than among the Inuit (16 %).

### TABLE 10.13

**Prevalence of hypercholesterolemia, « regular smoker status » and high blood pressure among the Inuit aged between 18 and 74 years, according to age (%) [Inuit, 1992]**

| NUMBER OF RISK FACTORS | TOTAL (Ep = 3,139) | 18-34 YEARS (Ep = 1,843) | | 35-64 YEARS (Ep = 1,222) | | 65-74 YEARS (Ep = 74) | |
|---|---|---|---|---|---|---|---|
| | | % | Ep | % | Ep | % | Ep |
| None (Ep = 494) | 15.8 | 15.5 | 285 | 15.4 | 189 | 27.8 | 20 |
| **One risk factor :** | | | | | | | |
| Hypercholesterolemia (Ep = 403) | 12.8 | 9.4 | 173 | 17.3 | 211 | 24.9 | 19 |
| Regular smoker (Ep = 1,250) | 39.8 | 49.7 | 917 | 26.6 | 324 | 11.8 | 9 |
| High blood pressure (Ep = 58) | 1.9 | 1.8 | 33 | 2.0 | 25 | 0 | 0 |
| Total (Ep = 1,711) | 54.5 | 60.9 | 1,123 | 45.9 | 560 | 36.7 | 28 |
| **Two risk factors :** | | | | | | | |
| Hypercholesterolemia + reg. smoker | 24.9 | 22.7 | 418 | 28.7 | 351 | 16.3 | 12 |
| (Ep = 781) | 1.6 | 0 | 0 | 3.0 | 37 | 19.3 | 14 |
| Hypercholesterolemia + HBP (Ep = 51) | 1.1 | 0 | 0 | 2.8 | 34 | 0 | 0 |
| Regular smoker + HBP (Ep = 34) | 27.6 | 22.7 | 418 | 34.5 | 422 | 35.6 | 26 |
| Total (Ep = 866) | | | | | | | |
| Three risk factors (Ep = 68) | 2.1 | 0.9 | 17 | 4.1 | 51 | 0.0 | 0 |

Risk factors are defined as follows :

- Hypercholesterolemia : cholesterol ≥ 5.2 mmol/L
- Regular smoker : at least one cigarette a day every day
- High blood pressure : diastolic BP ≥ 90 mmHg or BP controlled by pharmacological or non-pharmacological treatment

## 10.5.4 Discussion

The prevalence of ponderal and truncal obesity among the Inuit was relatively high compared with that of Quebecers (1990) yet remained lower than that of the Cree (1991). The results set out in this chapter indicate that ponderal or truncal obesity among the Inuit increases the risk of CVD owing to the prevalence of high lipoprotein values, high blood pressure and diabetes more likely to be observed among obese subjects.

A study on the metabolic effect of obesity was conducted among the Inuit of Nunavik in 1983-1984. Higher values of blood pressure and glycaemia were reported among obese Inuit women (Thouez *et al.*, 1990 ; Ékoé *et al.*, 1990). Results similar to those generated by this survey were obtained during a Canadian study conducted among the Cree and Ojibway of northern Canada (Uping and Sevenhuysen, 1989) where significantly higher values of lipoprotein, blood pressure and glycaemia were observed among men and women with a higher BMI. Moreover, average values by BMI category were similar to the values presented in this survey. The results of an American study conducted among women in the 30-55 age group revealed a higher prevalence of high blood pressure, diabetes and hypercholesterolemia for women whose BMI was greater than or equal to 29 (Manson *et al.*, 1990).

## 10.6 SUMMARY

The results of this survey revealed that the prevalence of risk factors leading to CVD among the Inuit was not as widely distributed as among Quebecers, except for obesity and, as previously mentioned, use of tobacco. However, in light of the numerous sociocultural changes having occurred in Nunavik in the past decades, it is imperative that the prevention and reduction of the primary risk factors leading to CVD among the Inuit population be encouraged.

The risk factors mentioned in this chapter form an integral part of the Inuit lifestyle. It should also be noted that, in countries where inhabitants have traded their traditional lifestyle and diet for a more sedentary way of life and poor eating habits, CVD has become a significant cause of mortality and morbidity (SBESC, 1992).

The success of cardiovascular health prevention and promotion programmes is reliant upon the participation of community members. It is therefore necessary that the Inuit population be well informed of the advantages inherent in prevention. The implementation of a strategy based upon cultural factors could lead a lower number of individuals requiring treatment as a result of high blood pressure, abnormal concentration of blood lipids, diabetes and obesity and, by the same token, decrease the incidence of CVD (SBESC, 1992).

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# CHAPTER 11

# STATE OF MENTAL HEALTH

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# GLOSSARY

**CRUDE RATE**

Rate non-standardized by age.

**PDISQS-14 *(IDPESQ-14)***

Psychological Distress Index used in the 1987 Santé Québec Survey reduced to fourteen (14) statements covering various aspects of the symptomatology of psychological distress relating to the prevalence of symptoms during the week preceding the survey.

**PARASUICIDE**

In an effort to eliminate the ambiguous dimension of the expression « attempted suicide », we have opted for the expression « parasuicide » to designate all suicide-related action which does not lead to death. In the context of a general health survey such as this, the expression « attempted suicide » is not appropriate because the intent to die, an essential psychological prerequisite to suicide, is very difficult to ascertain particularly since this survey does not evaluate the severity of reported suicidal acts.

**SUICIDAL THOUGHT**

Suicidal thought is deemed present whenever the respondent declares having *seriously* entertained the idea of committing suicide.

## 11.0 INTRODUCTION

Few data exists on the state of mental health of the Inuit in Nunavik. The existence of psychological and social problems is, however, increasingly recognized by the population as well as the representatives of various sectors of activity. It is indeed recognized that drug and alcohol abuse represents a serious problem in the region (PNLAADA, 1986 ; National Association of Inuit women Pauktuutit, 1990 ; Sûreté du Québec, 1993). Moreover, consultation with the Inuit has confirmed that drug abuse, suicide, family violence and sexual assaults have reached alarming proportions and are of major concern for both the population and community organizations (National Association of Inuit women Pauktuutit, 1990 ; Regional Tripartite Committee on Mental Health *Isumannaanirmut Katimajitt*[1], 1990-1991 ; Sûreté du Québec, 1993). Following the example of research conducted among other native groups in Canada, the *Isumannaanirmut Katimajitt* Committee has come to the conclusion that the manifestation of psychosocial problems is closely linked to cultural stress, unemployment and insufficient housing, three phenomena currently prevailing among Inuit communities (CRKSSS, 1991).

The rare quantitative data available on mental health refers strictly to the use of hospital services for mental problems and, more directly, for traumatisms and poisoning. According to CRKSSS (1991a) authorities, between 1987 and 1990, schizophrenic, affective and other non-organic psychoses, problems of adaptation and intoxications represented the primary causes of hospitalization for psychiatric reasons. Each year, hospitalization due to mental health problems has tended to affect more those individuals aged between 10 and 39 years who, since 1987, represented more that 70 % of hospitalization cases for psychiatric reasons (CRKSSS, 1991a). In 1988-1989, 50 % of patients hospitalized outside the territory for psychiatric reasons suffered from chronic depression, mood swings and anxiety. Similarly, Kirmayer (1993) identified major depression combined with melancholia as the most frequent diagnosis in his study conducted among some 100 psychiatric cases referred to him.

The CRKSSS (1991a) found that cases of drug-related and non drug-related intoxication increased every year. In 1989-1990, cases of intoxication potentially linked to attempted suicide represented nearly 50 % of all instances of hospitalization for mental health reasons (CRKSSS, 1991a).

For the 1987-1990 period, the CRKSSS (1991b) estimated that the suicide rate for the entire territory was 57/100,000 (N=16) and that 88 % of these suicides were carried out by individuals under 25 years of age. It would therefore appear that there were three times as many suicides in Nunavik compared with the Québec population as a whole (17.5/100,000 in 1987).

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(1) Committee for peace of mind.

The rapid growth of suicide among young men was a significant source of concern. Recent retrospective research specifically conducted among the Hudson Bay population revealed that the suicide rate was 28.6/100,000 for the 1982-86 period and rose to 80/100,000 from 1987 to 1991 (Kirmayer *et al.*, 1993). For the ten-year period from 1982 to 1991, the rate stood at 55.3/100,000 with a full 90 % of cases reported in the 15-25 age group (Kirmayer *et al.*, 1993). The authors explained that the marked increase during the second period under study resulted from a « cluster » of nine suicides in 1991.

In the opinion of Kirmayer *et al.* (1993), attempted suicide among natives was probably underestimated owing to the reluctance demonstrated by individuals to disclose their suicidal acts and because the majority of persons who attempted to commit suicide did not consult with health professionals following their attempts. The current survey should provide for a better assessment of this phenomenon among the Inuit.

## 11.1 METHODOLOGY

This chapter focuses upon the results of the mental health survey conducted among the Inuit of Nunavik. Mental health was defined using three indices, namely non-specific psychological distress, **suicidal thoughts** and **parasuicides**. Psychological distress among the Inuit was examined by means of a modified version [1] of the psychological distress index used in the 1987 Santé Québec master survey (**PDISQS-14**) (Préville, Boyer and Potvin, 1992).

The PDISQS-14 questions were formulated as statements covering various aspects of the symptomatology of psychological distress with respect to the prevalence of symptoms during the seven days preceding the survey. The PDISQS-14 is one in a series of scales used to define mental health over a continuum by means of quantitative variations recorded in the symptoms often experienced by individuals suffering from anxiety or problems of depression. Although they cannot be used to establish the prevalence of psychiatric disorders among the population under study, the data indirectly measures the presence of psychiatric disorders. It is then possible to identify among the population subgroups with an elevated prevalence of mental disorder.

Our analyses respecting the validity of the PDISQS-14 version used in this survey confirm the factorial structure of this instrument and are consistent with the results already reported for

(1) Contrary to the instrument used during the 1987 Santé Québec master survey and the survey conducted in 1991 among the James Bay Cree, the PDISQS-14 applied upon conducting research among the Inuit offered a choice of only three answers (Never, From time to time, Often) instead of four (Never, From time to time, Fairly often, Very often). In an effort to make the results of the three surveys comparable, respondent scores were distributed on a scale from 0 to 100.

the general population in Québec (Préville, Boyer and Potvin, 1992). The internal consistency of the scale within the sample was also found to be significant (Cronbach Alpha of 0.88).

As in the 1987 Santé Québec master survey, a high level of psychological distress was defined from a threshold corresponding to the 80$^{th}$ percentile of the index distribution as observed among the Inuit. This choice also takes into account a cultural personality trait of the Inuit in that they tend to express their psychological experiences by means of this research instrument. This strategy is very appropriate as this chapter does not aim to establish the prevalence of specific psychiatric disorder rather to identify the factors associated with psychological distress owing to mental health problems in the Inuit population.

Moreover, the four questions focusing upon suicidal thoughts and attempted suicides used in the 1987 Santé Québec master survey and 1991 Cree survey were also used in this survey. One of the questions on suicidal thoughts read as follows : « Have you ever **seriously** thought of committing suicide (of killing yourself) ? ». If the answer was yes, the respondent had to indicate whether he/she had entertained the idea in the past twelve months. Another question asked « Have you ever attempted to commit suicide (tried to kill yourself) ? ». If the respondent answered yes, he/she was asked to indicate whether the attempt had been made in the past twelve months. This approach was used to establish the prevalence of suicidal thought and parasuicide during the twelve months preceding the survey, as well as over the entire lifetime of the respondents.

Four variables were identified to compare suicidal thoughts and parasuicides with the results reported in the 1987 Santé Québec master survey (Boyer *et al.*, 1992) and the 1991 Cree survey (Santé Québec, 1994). The first two variables were used to distinguish, for the entire lifetime and for the twelve months preceding the survey, the individuals reporting only suicidal thoughts without suicidal action (parasuicides), whereas the other two compared respondents reporting a parasuicide with those who had never entertained suicidal thoughts or had never committed parasuicide, for the same two periods.

The phenomena of psychological distress, suicidal thoughts and parasuicides were examined in accordance with sociodemographic variables, namely sex, age, religion, marital status, level of education, occupation, language and coastal region (Ungava or Hudson). These phenomena were also studied taking into account stressful events having occurred twelve months prior to the survey such as adoption, respondent satisfaction with social life, respondent perception of cultural changes within the community, sexual abuse, consumption of illegal drugs (including solvents) and alcohol. Suicidal thoughts and parasuicides were also evaluated in accordance with psychological distress. Lastly, only the statistically significant results were presented.

## 11.2 RESULTS

### 11.2.1 Factors associated with psychological distress

At the significance level used in this chapter ($p=0.01$)[1], data failed to show significant differences in the prevalence of severe psychological distress between men and women (Table 11.1). However, the adoption of a more lenient significance threshold ($p=0.05$) enabled us to theorize that women (26 % ; $CI_{95\%}$ = 20.7, 30.3) exhibited twice as much psychological distress as men (14 % ; $CI_{95\%}$ = 9.7, 18.8).

**TABLE 11.1**

**Psychological distress observed among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | CI (p=0.01) |
|---|---|---|---|
| **Sex** | | | |
| Males | 14.2 | 277 | 8.2 - 20.2 |
| Females | 25.5 | 493 | 19.2 - 31.9 |
| **Age** | | | |
| 15-24 years | 28.4 | 401 | 20.0 - 36.8[1] |
| 25-44 years | 17.3 | 299 | 11.0 - 23.6 |
| 45 years + | 9.4 | 70 | 2.2 - 16.6[1] |
| **Males** | | | |
| 15-24 years | 17.7 | 121 | 6.6 - 28.8 |
| 25-44 years | 14.5 | 132 | 5.6 - 23.4 |
| 45 years + | 6.6 | 24 | 0.0 - 16.4 |
| **Females** | | | |
| 15-24 years | 38.4 | 280 | 26.6 - 50.2[1] |
| 25-44 years | 20.3 | 167 | 11.3 - 29.3 |
| 45 years + | 12.1 | 46 | 1.7 - 22.5[1] |

1 Indexed percentages with the same exponent are significantly different for 95 % confidence intervals.

The distribution of psychological distress varied significantly in accordance with various age groups. Inuit aged between 15 and 24 years reported three times as much psychological distress (28 %) as those aged 45 years and over (9 %). The correlation[2] between age and

(1) Given the great difficulty in translating the concepts relating to mental health into *Inuktitut*, a more conservative significance threshold ($p=0.01$) has been used throughout this chapter.

(2) In the current rather than statistical sense.

psychological distress was observed primarily among young women. Nearly four women in ten aged between 15 and 24 years showed a high level of distress (24 %) compared with that experienced by women aged 45 years and over (12 %). In general, Inuit who had never been married exhibited a prevalence of psychological distress twice as high as those who were either married or living with a common law spouse (29 % ; $CI_{95\%}$ = 22.1, 35.3) compared with 14 % ($CI_{95\%}$ = 10.1, 18.3). This correlation did not vary with sex and age.

Survey results indicated that the level of psychological distress observed among the Inuit was linked to their level of satisfaction with their social life. Somewhat dissatisfied, respondents scored three times as high from the standpoint of psychological distress (45 % ; $CI_{95\%}$ = 29.3, 60.9) as those who declared to be very satisfied (13 % ; $CI_{95\%}$ = 8.7, 18.2).

Psychological distress is also related to sexual abuse as unwanted kissing, fondling, sexual intercourse, etc. Survey results indicated that men and women who reported having been sexually abused showed more psychological distress (34 % ; $CI_{99\%}$ = 24.3, 43.3) than those Inuit who had not experienced such abuse (14 % ; $CI_{99\%}$ = 9.1, 18.9).

In terms of the correlation between psychological distress and the consumption of drugs during the twelve months preceding the survey, analyses indicated that inhaling solvents was associated with a high rate of psychological distress. Some 29% ($CI_{95\%}$ = 19.9, 38.9) of users of these substances showed psychological distress compared with 16 % ($CI_{95\%}$ = 12.7 - 19.7) among non-users.

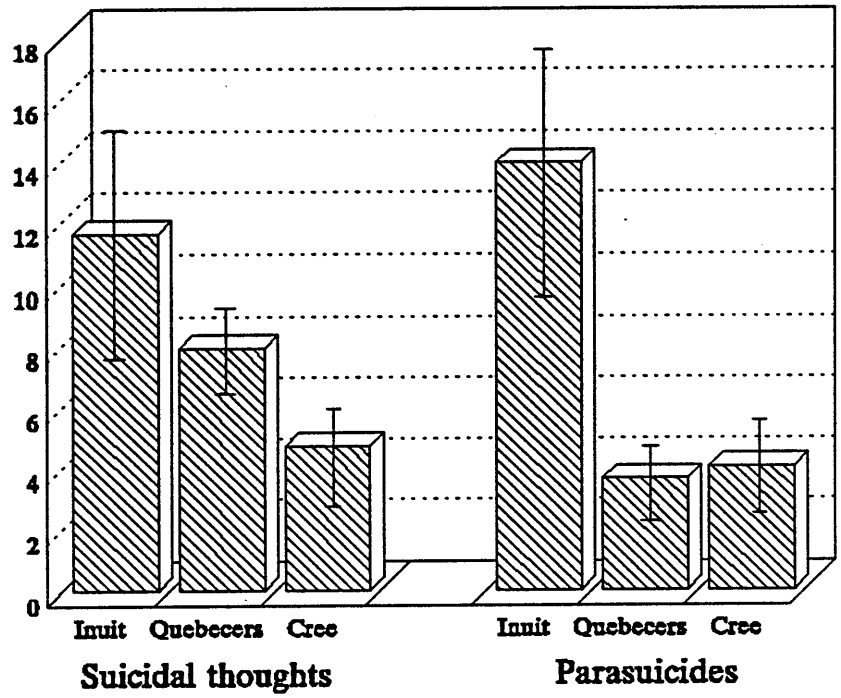
This chapter did not include a comparative analysis of psychological distress levels observed among the Inuit, the Cree and the overall Québec population owing to the lack of information on comparativeness between answer profiles exhibited by these various cultures. Although we believe that psychological distress exists in all cultures, it is probable that reporting methods vary considerably. The differences between cultural groups could thus reflect both a specific answer profile and actual variations in psychological distress.

## 11.2.2 Presence of suicidal thoughts and parasuicides during lifetime

The analysis of the prevalence of suicidal thoughts and parasuicides during the course of a lifetime (Graph 11.1) revealed that 12 % of Inuit **(crude rate)** declared having seriously entertained committing suicide and 14 % reported having attempted suicide during their lifetime. These rates were clearly superior to those observed among the James Bay Cree who showed a 5 % prevalence of suicidal thoughts and a 4 % prevalence (crude rate) of parasuicides (Santé Québec, 1994).

GRAPH 11.1

**Gross rates of suicidal thoughts and parasuicides during lifetime among individuals aged 15 years and over for each of the Inuit, Cree (1991) and Québec (1987) populations (%) [Inuit, 1992]**




Percentage (a=0.01).

Once the rates presented in Graph 11.1 have been standardized to take into account the specific age structures of the Inuit and Québec populations (Santé Québec, 1988), one can readily see that suicidal thoughts were 1.5 times as frequent among the Inuit as among Quebecers (SDR[1] =1.5 [$CI_{99\%}$ = 1.03, 2.0]), whereas parasuicides were 3.5 times as frequent (SDR=3.5 [$CI_{99\%}$ = 2.5, 4.7]).

Suicidal thoughts were seven times more frequent among young women (21 %) than respondents aged 45 years and over (3 %) (Table 11.2) No statistically meaningful variation was evidenced for sex and age when these two characteristics were taken separately.

(1) We used the approximate formula of the SDR confidence interval presented by Bernard and Lapointe (1991).

## TABLE 11.2

**Prevalence of suicidal thoughts during lifetime among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | CI (p=0.01) |
|---|---|---|---|
| **Sex** | | | |
| Males | 9.4 | 188 | 4.5 - 14.4 |
| Females | 13.9 | 273 | 8.9 - 18.9 |
| **Age** | | | |
| 15-24 years | 16.2 | 227 | 9.3 - 23.1 |
| 25-44 years | 10.6 | 185 | 5.5 - 15.7 |
| 45 years + | 5.9 | 49 | 0.4 - 11.4 |
| **Males** | | | |
| 15-24 years | 11.6 | 81 | 2.3 - 20.9 |
| 25-44 years | 7.8 | 70 | 1.0 - 14.6 |
| 45 years + | 9.2 | 37 | 0.0 - 19.9 |
| **Females** | | | |
| 15-24 years | 20.7 | 146 | 10.8 - 30.6[1] |
| 25-44 years | 13.6 | 115 | 6.1 - 21.1 |
| 45 years + | 2.8 | 12 | 0.0 - 7.8[1] |

1 Indexed percentages with the same exponent are significantly different for 95 % confidence intervals.

Table 11.3 revealed a positive correlation between the age of Inuit and the prevalence of parasuicide in their lifetime. Young people aged between 15 and 24 years reported twice as many suicidal acts as those aged between 25 and 44 years, and 33 times as many as respondents aged 45 years and over. Nevertheless, this correlation with age must be specified according to sex. Whereas women aged between 15 and 24 years admitted to 18 times as many parasuicides as women over 45 years of age, this correlation with age was not as obvious among men. The rates observed among young men (28 % ; $CI_{95\%}$ = 17.1, 38.1) and men aged between 25 and 44 years (9 %) were significantly different only at the 95 % threshold ($CI_{95\%}$ = 3.3, 14.9).

## TABLE 11.3

**Prevalence of parasuicides during lifetime among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | CI (p=0.01) |
|---|---|---|---|
| **Sex** | | | |
| Males | 13.5 | 245 | 7.4 - 19.6 |
| Females | 14.4 | 244 | 9.0 - 19.8 |
| **Age** | | | |
| 15-24 years | 26.5 | 312 | 17.4 - 35.6[1,2] |
| 25-44 years | 11.0 | 171 | 5.5 - 16.5[1,3] |
| 45 years + | 0.8 | 6 | 0.0 - 3.0[2,3] |
| **Males** | | | |
| 15-24 years | 27.6 | 170 | 13.8 - 41.4 |
| 25-44 years | 9.1 | 75 | 1.5 - 16.7 |
| 45 years + | 0.0 | 0 | 0.0 - 0.0 |
| **Females** | | | |
| 15-24 years | 25.3 | 142 | 13.3 - 37.3[1] |
| 25-44 years | 13.2 | 96 | 5.2 - 21.2 |
| 45 years + | 1.4 | 6 | 0.0 - 5.0[1] |

1,2,3 Indexed percentages with the same exponent are significantly different for 95 % confidence intervals.

Parasuicides also varied with the level of education and exposure to recent stressful events. Younger respondents with a higher level of education reported more suicidal acts during the course of their lifetime (20 % ; $CI_{99\%}$ = 13.7, 26.7) than those having dropped out after primary school (6 % ; $CI_{99\%}$ = 1.3, 9.7). Again, this phenomenon was characteristic of Inuit women where 25 % ($CI_{99\%}$ = 14.9, 34.5) of those with at least a high school diploma admitted having taken suicidal action vs 4 % ($CI_{99\%}$ = 0.0, 8.0) of those with a primary school level of education. These correlations disappeared when age was taken into account. In terms of exposure to recent stressful events, the Inuit exhibiting average to high levels of stress reported more parasuicides during their lifetime (22 % ; $CI_{99\%}$ = 13.5, 30.9]) than those who mentioned no exposure to such events 8 % ($CI_{99\%}$ = 2.8, 12.8). The same phenomenon applied to both men and women for each age group.

As in other populations, this survey among the Inuit revealed an important correlation between severe psychological distress and parasuicide experienced during the course of one's lifetime. Nearly half the Inuit who reported one parasuicide during their lifetime exhibited severe

psychological distress (45 % [$CI_{99\%}$ = 28.7, 61.9]) compared with 14 % ([$CI_{99\%}$ = 9.6, 18.6]) individuals reporting no suicidal thoughts or parasuicides.

Contrary to cases of suicidal thoughts where no correlation with drug use in the course of one's lifetime was highlighted, parasuicides were more frequent among Inuit who admitted to using drugs during their lifetime (20 % ; $CI_{99\%}$ = 13.0, 26.6) as opposed to those who had never used drugs (5 % ; $CI_{99\%}$ = 1.1, 9.8). Compared with the latter, users of cocaine or crack (32 % ; $CI_{99\%}$ = 12.4, 52.0), solvent (26 % ; $CI_{99\%}$ = 12.6, 39.8), marijuana or hashish (20 % ; $CI_{99\%}$ = 13.1, 27.1) reported more parasuicides during their lifetime.

### 11.2.3 Presence of suicidal thoughts and parasuicides in past twelve months

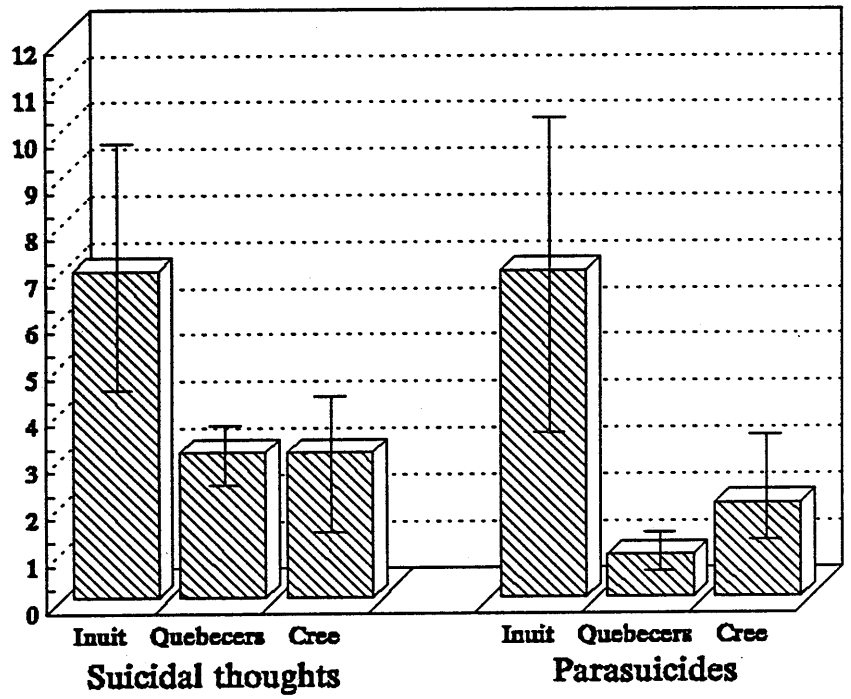
The prevalence of suicidal thoughts and parasuicides in the twelve months preceding the survey indicated that seven Inuit in a hundred declared having seriously thought about suicide and that the same proportion (7 %) attested to suicidal acts (Graph 11.2). Moreover, although the prevalence of suicidal thoughts among the Inuit was the same as that observed among the Cree (Santé Québec, 1994), the former reported more parasuicides.

Even after the data was standardized for age, the prevalence remained statistically different from that observed among the overall Québec population. Indeed, the Inuit reported twice as many suicidal thoughts (SDR = 1.9 [$CI_{99\%}$ = 1.2, 2.8]) and seven times as many suicidal acts (SDR = 6.8 [$CI_{99\%}$ = 4.1, 10.3]).

A separate analysis of each specific characteristic revealed that suicidal thoughts did not vary according to sex at a 99 % threshold yet were more frequent among young people aged between 15 and 24 years (11 %) than among the Inuit aged 45 years and over (2 %) (Table 11.4). Although calculated at a conservative significance threshold, this variation with age did not appear inherent to one of the two sexes. A more lenient significance threshold would indicate that suicidal thoughts were more frequent among young women. The prevalence of suicidal thoughts in the past year was 17 % ($CI_{95\%}$ = 10.0, 24.2) among women aged between 15 and 24 years and 5 % ($CI_{95\%}$ = 2.0, 8.0) among those aged 25 years and over.

# GRAPH 11.2

**Crude rates of suicidal thoughts and parasuicides within twelve months prior to the survey among individuals aged 15 years and over for each of the Inuit, Cree (1991) and Québec (1987) populations (%) [Inuit, 1992]**




Percentage (a=0.01).

# TABLE 11.4

**Prevalence of suicidal thoughts within twelve months prior to the survey among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | CI (p=0.01) |
|---|---|---|---|
| **Sex** | | | |
| Males | 4.7 | 93 | 1.1 - 8.3 |
| Females | 9.3 | 182 | 5.1 - 13.5 |
| **Age** | | | |
| 15-24 years | 11.1 | 154 | 5.2 - 17.0[1] |
| 25-44 years | 6.2 | 107 | 2.2 - 10.2 |
| 45 years + | 1.7 | 14 | 0.0 - 4.8[1] |
| **Males** | | | |
| 15-24 years | 5.1 | 35 | 0.0 - 11.5 |
| 25-44 years | 5.0 | 44 | 0.0 - 10.6 |
| 45 years + | 3.4 | 14 | 0.0 - 10.2 |
| **Females** | | | |
| 15-24 years | 17.1 | 119 | 7.8 - 26.4 |
| 25-44 years | 7.5 | 63 | 1.7 - 13.3 |
| 45 years + | 0.0 | 0 | 0.0 - 0.0 |

1 Indexed percentages with the same exponent are significantly different for 95 % confidence intervals.

Young people aged between 15 and 24 years exhibited a rate of parasuicide six times higher (18 %) that of individuals aged between 25 and 44 years (3 %) (Table 11.5). This phenomenon was nevertheless more notable among young women of whom nearly 16 % reported a parasuicide compared with 1 % of those aged between 25 and 44 years (18 times as many). The rate of parasuicides observed among young men aged between 15 and 24 years was 20 % ($CI_{95\%}$ = 10.0, 29.6) and 4 % ($CI_{95\%}$ = 0.2, 8.3) among those aged between 25 and 44 years.

## TABLE 11.5

**Prevalence of parasuicides within twelve months prior to the survey among the Inuit aged 15 years and over, according to age and sex (%) [Inuit, 1992]**

| CHARACTERISTICS | % | Ep | CI (p=0.01) |
|---|---|---|---|
| **Sex** | | | |
| Males | 8.4 | 144 | 3.3 - 13.5 |
| Females | 5.5 | 84 | 1.8 - 9.2 |
| **Age** | | | |
| 15-24 years | 17.9 | 188 | 9.6 - 26.2[1] |
| 25-44 years | 2.8 | 40 | 0.0 - 5.9[1] |
| 45 years + | 0.0 | 0 | 0.0 - 0.0 |
| **Males** | | | |
| 15-24 years | 19.8 | 109 | 6.9 - 32.8 |
| 25-44 years | 4.4 | 34 | 0.0 - 10.0 |
| 45 years + | 0.0 | 0 | 0.0 - 0.0 |
| **Females** | | | |
| 15-24 years | 15.8 | 79 | 5.2 - 26.5[1] |
| 25-44 years | 0.9 | 6 | 0.0 - 3.3[1] |
| 45 years + | 0.0 | 0 | 0.0 - 0.0 |

1 Indexed percentages with the same exponent are significantly different for 95 % confidence intervals.

Although it was impossible, based upon the significance threshold adopted for the purposes of this survey, to confirm that suicidal thoughts and parasuicides which occurred in the twelve months preceding the survey are associated with psychological distress, analyses conducted at a lower significance threshold indicated that these phenomena were found more frequently among Inuit exhibiting severe psychological distress. Inuit reporting a parasuicide in the twelve months preceding the survey suffered from three times as much psychological distress (43 % ; $CI_{95\%}$ = 23.5, 62.3) as Inuit who reported no suicidal thoughts or parasuicides (14 % ; $CI_{95\%}$ = 10.7, 17.5).

Inuit who used drugs in their lifetime tended to report more parasuicides in the twelve months preceding the survey than those who had never used drugs (11 % ; $CI_{99\%}$ = 5.1, 16.3) compared with 1 % ($CI_{99\%}$ = 0.0, 1.9). When analysed by each type of substance, drug users (solvents (19 % ; $CI_{99\%}$ = 6.1, 31.5) and marijuana or hashish (12 % ; $CI_{99\%}$ = 6.0, 17.0)) reported more parasuicides in the twelve months preceding the survey than lifelong non-users.

## 11.3 SUMMARY

All research results should be interpreted within the limits of the research methods used. It is thus essential to identify the limits with respect to the instruments used to estimate the state of mental health of the Inuit population.

Firstly, Santé Québec survey was a retrospective cross-sectional study. Inuit were questioned only once and, in the majority of cases, were asked to apprise us of past events. Thus even if it were possible to evidence statistical correlations between Inuit characteristics and psychological distress or the presence of suicidal thoughts or actions, no causal inference could be derived, strictly speaking, for the factors under study. For example, it is possible that respondents changed their marital status after a suicide-related episode. It would therefore be incorrect to conclude that separation or divorce led to suicidal thoughts or suicide. The correlations observed between the variables under study and mental health indicators cannot substantiate causal relationships. The variables analysed herein should therefore not be deemed risk factors in the strictest epidemiological sense. This information, can however, serve to identify segments of the Inuit population where psychological distress and parasuicides are more frequent and promote the setting up of prevention programmes.

Moreover, it should be recognized that even severe psychological distress cannot be directly expressed in terms of clinically identifiable psychiatric trouble. However, we can postulate that the risk of psychopathology increases with the level of psychological distress. It is probable that the 20 % threshold adopted for the purposes of this survey to make the results comparable with those observed in other Santé Québec research projects, may not reflect the Inuit reality as the prevalence of mental health problems has never been accurately estimated for this population. This fact is even more significant when one considers that the PDISQS-14 focuses primarily upon symptoms linked to affective problems and anxiety conditions. One should also take into account that, even for these problems, the symptoms of psychological distress expressed by means of the PDISQS-14 are perhaps not as valid for the Inuit as symptoms which could be more valid for this population may be neglected by this instrument. Concomitant reliability and validity analyses, however, indicate that the PDISQS-14 can be used among the Inuit with a view to identifying sub-groups experiencing more mental health problems.

Readers should note that the methodology used to estimate the prevalence of suicidal thoughts and parasuicides cannot assess the severity of thoughts and the lethality of the parasuicides. However, the questions used herein, which were thoroughly analysed by Moscicki (1989), were consistent with the standards followed by other publications on parasuicides. Despite this, it is impossible to specify whether the actions reported were simply « calls for help » from individuals with only a feeble intent to die or uncompleted suicidal acts.

Since the estimates obtained were based upon the answers to a Self-administered Questionnaire [1], this information was likely to be affected by a memory bias. For example, older respondents may have forgotten that they had thought of committing suicide at one point during adolescence. It would thus appear wiser when seeking to establish a correlation between suicidal thoughts and parasuicides and sociodemographic variables, to refer to data on the prevalence of these phenomena during a period of twelve months. Results on life-long prevalence serve more specifically to assess the significance of the impact of these phenomena upon community health and compare their prevalence with that of other populations. The PDISQS-14 was little affected by this bias as it referred to the last two weeks.

Focusing upon neither suicide among young Inuit nor mental disorders, this research dealt with the phenomena which, more often than not, preceded them and indicated quite accurately, when combined, the state of mental health of the population. For the first time in the history of the Inuit, these phenomena were described systematically by means of reliable, valid measuring instruments. The data can be interpreted from several standpoints, namely sociology, psychology, public health, psychiatry, etc., or can simply be read as a series of descriptive statistics.

Rather than embracing this last choice and letting each reader interpret the results as they see fit, we have opted for a more cultural reading. We have elected to provide significance to the phenomena under study in an attempt to understand them within the relational context of their generating source, namely Inuit society. This process, essentially anthropological in nature, was first introduced by Bateson (1956).

Despite the fact that the survey has enabled us to reach a significant number of Inuit, the limits imposed by the relatively small sample size and the absence of multivariate statistical analyses have prompted us to venture beyond the linear, unilateral concept of causality by adopting a systemic approach, inspired by the work of Bateson (1981). In this light, we have endeavoured to comprehend the phenomena of psychological distress, suicidal thoughts and parasuicide through the very cultural parameters of Inuit society while positioning ourselves at the crossroads of Inuit cultural traditions and modern living conditions. Two questions placed us on either side of these boundaries, namely (1) What qualities endogenous to the culture predetermine the results obtained ? and (2) What conditions inherent to a dominant society influence its capacity or failure to adapt and evolve ? (See Berry, 1985).

The project was ambitious. Indeed, how does one clarify phenomena involving simultaneously individual and collective patterns, cognitive structures and symbolic systems generated

(1) In instances where the respondent considered himself unable to answer alone (difficulty in reading, understanding, etc.), the questionnaire was also designed to be administered by an interviewer.

differently in accordance with the culture and which also evolve within a rapidly changing social context ? This raises the question of whether it is possible to understand the mental health of a different culture. It appeared to us that the only proper way to respect Inuit culture was to continually pace between epidemiology and anthropology. The inspiration provided by anthropology has enabled us to direct analyses and interpret results, if only partially, by minimizing the « ethnocentric temptation » (Bibeau *et al.*, 1992) from which science is not exempt and which basically consists in applying to others one's own perception of things.

First, we shall summarize the primary results of the survey on mental health indicators. As a comprehensive discussion of all aspects involved is not realistic, we shall then attempt to develop the cultural dimensions likely to predetermine the phenomena documented herein with a view to (1) establishing a context for the distribution of psychological distress of this population and, (2) defining the more precarious condition of the young. Second, we shall position modern Inuit society within the context of its contacts with the dominant society.

## 11.4 CULTURAL INTERPRETATION

As found in other populations, a significant proportion of the Inuit population suffered from severe psychological distress. As in other cultures, this distress affected specific groups and was not distributed randomly throughout the population. The results indicated that Inuit women exhibited more psychological distress than men. This predominance of women was also found among Quebecers. Contrary to the results of the 1987 Santé Québec master survey, however, this research has demonstrated that young Inuit (15 to 24 years) suffered three times as much distress as their elders (45 years of age and over) and that this phenomenon applied more specifically to young women. The survey also indicated that severe psychological distress varied with marital status. Marriage or common law union indeed seemed to shield against distress as single Inuit exhibited twice as much psychological distress as those living with a spouse.

Regardless of sex, this survey also revealed a close correlation between psychological distress and sexual abuse, dissatisfaction with community members and drug use. Having limited ourselves to bivariate statistical analyses, these results should be interpreted with caution as other factors may explain these findings. The systemic approach proposed earlier should enable us to provide broad-brush interpretations of these phenomena based upon cultural parameters.

Although we cannot make direct comparisons, the results of this survey show that the distress expressed by the Inuit was even greater than that exhibited by Quebecers. Indeed,

during the year preceding the survey, owing to their distress, they had entertained suicide twice as often and attempted suicide seven times as often as Quebecers.

Parasuicides over the year prior to the survey affected the overall population yet varied by age and sex. The 15-24 age group seemed the most affected as individuals in this group reported six times more parasuicides than any other group in modern Inuit society. Young girls appeared the most desperate. Compared with their older sisters and mothers, they reported having acted on their suicidal tendencies 18 times more often. Young boys reported four times more suicidal acts than older men. The survey enabled us to observe that the phenomenon of parasuicides was closely related to the use of illegal drugs as drug users reported many more parasuicides than non-users.

Research also showed that the number of parasuicides increased with the level of education and that this phenomenon was observed more specifically among women. Moreover, mental health seems to have become a priority in Nunavik. In addition to study committees, notably Peace of Mind, regional consultation boards were created and more focused investigations conducted. The data provided by this report should enhance their proceedings and fuel discussions, thereby leading to a better definition of the problem and the setting up of effective action programmes.

### 11.4.1 Psychological distress experienced by the Inuit population

The Inuit are a cordial, warm people. Their smile is as proverbial as the great value they place upon children, a fact abundantly documented by Briggs in his numerous books on the socialization and learning process of Inuit children. Whereas the average life expectancy stands at 65 years in industrialized countries and 50 in developing countries (WHO, see *«OMS»*, 1993), the life expectancy of the Inuit rose from 26 years in 1944-1948 (Choinière *et al.*, 1988) to 66 years in 1969-1973 (Blanchet *et al.*, 1992). Suicide of « epidemic » proportions recently reported among the young (CRKSSS, 1991b), however, challenges the progress of Inuit life expectancy.

The profound transformation of Inuit society[1] began in the 1800s, and then intensified and accelerated in the 1950-60s in tandem with Québec society to join the age of electronics and economic globalization. For the Inuit, however, the leap was considerably higher than for Quebecers when one considers that this nomadic society had adopted a more sedentary lifestyle in the space of only two decades (Lachance, 1979). In as much as the physical health of the Inuit improved significantly through the transformation of general living

(1) This process of cultural change involving losses, substitution, creation, etc., is referred to as cultural integration by anthropologists.

conditions, it would be appropriate to question why these changes have had such an adverse effect on the state of their mental health.

In the opinion of Berry (1985), the type of sociopolitical organization adopted by a population prior to establishing contact with another predetermines the impact of its evolution. He explained that nomadic peoples, contrary to peoples who had already settled as farmers, for example, suffered the most from the settling process. He also established a link between this fragility of nomadic peoples and their non-structured sociopolitical systems which were consistent with their organization into low density groups scattered across a vast territory. This type of political system does not imply the absence of organization though, since it is based upon an organization characterized by great flexibility. This type of organization prevailed in the Inuit economy based upon self-sufficiency whereby, in periods of dearth, for example, survival problems were solved by grouping into a seasonal camp under the guidance of a band leader (Lachance, 1979 ; Dorais, 1986).

Modern Inuit villages comprise more than just a single family or camp. Now distributed in fourteen villages, this population which had not developed collective political structures beyond the family cluster is now confronted with the difficulties inherent to the formation of a community or regional spirit. This new sociopolitical organizational structure commands the implementation of new regulations and social control systems which, in turn, lead to a loss of status for certain individuals, the modification of contacts among individuals newly grouped together in bands (One would err in believing that the populations of Inuit villages were homogenous in nature and entertained harmonious relationships when community mayors themselves recognize that they are actually divided by clan quarrels[1] (Bujold, 1993)), the transformation of the traditional support institutions, the evolution of values, social regulations and roles, characteristics of the social fabric, interpersonal relationships between both sexes and age groups, individual and collective identities, to name but a few.

Mental health is developed, enhanced and protected by social relationships and support networks which are structured by various things including family ties, namely alliance, filiation and germanity in the restricted and extended family with structuring regulations and resulting roles, as well as friendship and group identification. Countless studies have demonstrated how the integration of individuals, their sense of identification and their feeling of being

(1) Mayors use the word « clan » in the popular sense of « closed group ». In reality, the Inuit have never grouped in clans. Three parameters define the concept of clan, namely unilinear descent (paternal or maternal lineage) from a common mythical or historical ancestor exogamy (obligation to marry outside the clan) and totemism. The Inuit have traditionally grouped in bands comprising a small group of families which spent part of the year together, parted to regroup later in accordance with needs and seasonal changes. These gangs have disappeared since the Inuit opted for a more settled way of life in the mid-sixties. One could presume that the current village quarrels are simply squabbles between families which correspond more or less to former bands or camps which not too long ago were still in existence.

supported contribute to reducing social alienation and solitude, and how the loss of these conditions has immediate repercussions on their health. Humanity is a society and mental health in this population as in any other raises the issue of the persistence, the disappearance and the transformation of interpersonal ties, as well as the widening generation gap and the differences and contradictions between ancestral culture and modern concepts.

More directly, it would be appropriate to ask how this culture, while facing these problems, recognizes the phenomenon of psychological distress, values suicidal thoughts and copes with parasuicides. Avoiding conflicts perhaps indicates the presence in this population of a cultural style which could lead to minimizing or denying individual distress and fail to reflect the existence of problems. Whereas the non-interventionist approach of the Inuit tends to reveal an ideal people who consider others sufficiently mature to do what they have to do without the need for intrusion, it should be noted that this tendency extends also to situations of sexual, physical or any other type of violence. In addition to the ancient social control mechanisms such as rumours, mockery and ostracism, the power enjoyed by the shaman or gang leader enabled him to enforce the respect of socially acceptable behaviour. Whatever happened to the formidable power granted those famed leaders? Have the new mechanisms for punishment been properly integrated or have they even been given the required time to develop?

From this standpoint, it is probably appropriate to underscore the degree of dissatisfaction expressed by the respondents with respect to their social life which challenges the level of social integration/disintegration of current communities and marks the advent of individualism over community spirit.

### 11.4.2 Status of youth in Inuit society today

Young Inuit nowadays identify with an international culture of which they embrace the stereotypes (Bujold, 1993). Adolescence is a well known yet rather ill-integrated phenomenon in our society. Among the Inuit, it is, however, a relatively new phenomenon indicative of social transition. It would not be an overstatement to say that the burden of social transformation rests on the shoulders of this segment of the population, the first generation originating from a complete cycle of formal education, the children of parents born in the sixties who were also the first parents of a new, more sedentary society.

An Inuit student from Greenland (Lynge, 1985) and a young Inuit of Nunavik (Bujold, 1993) in the summer of 1993 expressed their uncertain and ambiguous identity, their solitude and their feeling of not being able to rely upon anyone for guidance and support in a society in the midst of a value crisis through the metaphor which read as follows : « I am divided in two

parts, one is white (sic)[1], the other native. The part that is white (sic) has no parents whereas the native part knows no adults. ». Palisser shed some light on the context of the development of their identity and personality when we wrote as follows : « The home and school convey different languages, values, beliefs and customs [...]. No one has provided them with guidance, advice or warning. » (Palisser, no date).

In her effort to understand the distraught state of the young and help them, the author specified the difference between the two schools of thought, Inuit and Western, respecting the socialization of children and, more particularly, how much the Inuit value their word. She highlighted that while immigrant teachers valued more talkative and opinionated children, Inuit culture reproved this type of behaviour and deemed it aggressive, impolite and indicative of a lack of security, stability and maturity. Whereas verbal expression is highly valued in Western societies, Inuit culture commends silence above all (Briggs, 1970). « To become one with the world and its components » mentioned Palisser, « we have always been told to conserve words and avoid wasting them. We have been told to be polite, cautious and sagacious when speaking our mind. Intelligence and cogitation will only prevail through silence ». To this contradiction in values has been added role models provided without censorship or commentary by television and other electronic media.

The Inuit themselves do not wish to see the school system disappear despite its flagrant flaws as they believe they can provide this section with renewed direction. However, the education system must adapt to the cultural context of the population it serves and, as pointed out by Lynge (1985), be harmonized with cultural values. This will create a warm environment where personnel maintains quality interpersonal ties with adolescents who could themselves enhance their programmes by indicating the guidelines and values they wish to receive. School must be considered as an element of standardization of Inuit culture, a mechanism true to Inuit society, failing which it is likely to become an instrument of destruction.

Young people in former Inuit society were *inuusuktuq*, growing individuals (Therrien, 1987, p. 153), who were already socialized and indispensable to group survival. Adolescence is a new contemporary concept for the Inuit. It is therefore not surprising that the parents of today's adolescents have not known how to deal with this unfamiliar phenomenon a little beyond their grasp and belonging to a new culture with which they themselves were still attempting to come to terms. This, however, should not prevent the parents from being concerned and showing an adequate level of competency as their age-old culture provides them with a model which has always proven effective. In his work, Briggs surmised that in recognizing and integrating young people, Inuit society responded to their needs and enabled them to develop a strong sense of identification and interdependence. In this context,

(1) We should like to emphasize that the term used by the Inuit to refer to non-native individuals is *Qallunaat* which means thick eyebrows.

emotional ties were not taken for granted but rather were nourished and questioned in several ways, namely games and teasing (See also Crago, 1988). Lynge (1985) summarized the values that make up the Inuit personality by linking personal autonomy and non-interference with deep attachment and selfless commitment to others. Although the contents have changed, the principles of integration and identification have remained unchanged. For young Inuit, identity problems are combined with the pressure exerted by personal and peer expectations with respect to performance. As they are educated, they should have a better chance of succeeding in the new society ! Young people « perceive themselves as failures. Having dropped out of school, they do not enjoy a command of one or other of *Inuktitut*, English or French. [...] They possess none of the skills required by employers, and feel guilty for not being self-sufficient and not living up to the expectations of their parents. [...] No-one has ever told them that it was normal for a transitional culture to create victims. They know that they are victims ... of what, they do not know. » (Palisser, no date).

Their psychological distress challenges not only their place and the role they are expected to play but also their emotional ties with their parents and community in a new society where the group no longer makes life meaningful but where it is up to the individuals themselves to create that meaning. Lastly, this distress defies the degree of social integration or disintegration as well as the competence of parents and teachers. Since Inuit parents appear to have involuntarily let teachers play their role, it is only natural that the young have come to believe that they have no parents. Yet the role of teachers is not to replace parents.

Finally, although this research did not aim to focus upon suicide among young Inuit, we believe that suicide acts as an unconscious mechanism in their behaviour. Suicide represents the most asocial of all acts, particularly in a culture where the community takes precedence over individuals. Similarly, suicide could be considered a culturally adapted behaviour because it is associated with an ancient ritual which was performed by elderly, resourceless people who relieved the community of the burden created by their dependence. Is it not true that current suicides by young people bespeak of Inuit identity and a sense of community belonging? In that sense, could suicide among young Inuit be perceived as the statement of a double paradox, namely a merging with Inuit culture and identity, and the necessity of severing the merging process? In the Inuit cosmogony, violent death enables the soul to reach a better world (Boas, 1964).

### 11.4.3 The cultural development of personality

Contrary to the Western materialistic perception of our world and universe, our place in the nature of things, and our concept of body and soul, the Inuit vision bases its understanding

of these concepts on the contacts that humans maintain with the infinitely grand and invisible nature of the universe, other humans, animals, and, finally, the environment which is a live being and therefore commands respect and consideration. The Inuit universe is unified and this unity is alive (Dufour, 1994).

In accordance with this vision the centre of which is symbolic rather than material, individual and collective health has relied upon the bonds humans entertained with (1) the biosphere of which they are components, (2) the invisible forces which energize the universe, and (3) other human beings (Dufour, 1993). In this model, compliance with social and ecological rules ensured life and health, both individual and collective, and, by the same token, regulated social and community life whereas failure to respect the same rules resulted in a number of catastrophes, namely famine, disease (Therrien, 1992 ; Dufour, 1994 ; Borré, 1991, 1994).

This vision of the universe and life in general, a profound concept of unity among all living things, imparted individuals with a unique EGO to which Stairs (1992) referred as ECO-SELF. This was a concept whereby individuals found their inner meaning only when they transcended and integrated into this unified universe comprising the animals, the earth which had given them life, the water, the air, the stars, etc. This ego, this self-perception indeed bore little resemblance with the scientific conception of the universe.

It should be understood that, according to this vision, life was sacred and precious, a significance which inspired and conditioned human behaviour. Without specifying the world vision embraced by contemporary Inuit, one can safely assume that there exists a connection between the loss of the traditional vision and the current crisis facing Inuit society. In the olden days, « the loss of one's soul » was considered one of the leading causes of illness. Is in not only natural for the young to deplore the current aching desire to live, to fill the void in their life? This emptiness is not dissimilar to the modern incarnation of the « loss of one's soul » in traditional Inuit society. As young parents lose sight of the golden rules which gave meaning to their life and inspired their actions, they find themselves unable to convey a sense of purpose to their children.

### 11.4.4 Inuit society within Canadian and Québec societies

The transformation process of Inuit society is not occurring in a vacuum but has evolved up until now in the tradition of political rhetoric, action programmes and development strategies (Collin, 1988). This process draws upon parental guilt created by the State which leads to a victim mentality among the Inuit. Paine (1977) qualified this state of affairs as « welfare colonialism » the rapport between the Canadian government and native peoples, a philosophy based upon the desire to prevent the recurrence of historic tragedies of labour exploitation perpetrated with colonized peoples (See also Savard, 1992, who diagnosed as an illness the

« failure to imagine political structures »). In Paine's opinion, dependence was instituted to avoid exploitation. Did we indeed fall into a trap ?

The words *culture* and *colonization* conjure up a feeling of extreme discomfort among Quebecers who perceive culture as a sacred, inviolable taboo. This misconception of the ramifications of culture as well as its consecration not only prevent mankind from fully reaping all inherent benefits but also hinder its development and the correction of its distortions and limits. A cultural reading of the statistical results of the Santé Québec Survey Among the Inuit of Nunavik reveals that it is of the utmost importance that we recognize and identify the impact of culture upon health -- whether physical, mental or social -- disease and illness, therapeutic relations, and public and community health. From this realization will emerge solutions designed and adapted to cultural considerations.

### 11.4.5 Inuit society in satellite age

It is almost impossible to imagine the intensity of the shock wave affecting Inuit society, and the rapidity with which the latter has entered the age of electronics and satellites. Transitional situations nearly always reap instability and disorder. In the midst of this chaos, elements of tradition and change interrelate both symmetrically and asymmetrically. The results derived from this research on the state of mental health of the Inuit demonstrate clearly the formidable transformation their society is currently undergoing. In traditional Inuit society, a crisis of today's magnitude required the therapeutic intervention of the almighty shaman[1]. Has that shaman now been replaced ?

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# CONCLUSION AND RECOMMENDED COURSES OF ACTION RELATED TO HEALTH STATUS

## (PART II)

## SELF-EVALUATION OF HEALTH

The results of the current survey showed that the Inuit assessed their state of health less positively than Quebecers, Canadians and the Cree : almost half the adults, men as well as women, considered their state of health as average. Note, however, that a very small proportion of the population considered themselves to be in poor health. In contrast, those in the 15-19 age group considered themselves to be in poorer health.

The Inuit were nonetheless satisfied with their state of health, the men much more so than the women. However, they were less satisfied than other populations (Quebecers, Canadians and Cree). Those who were less satisfied were found in the 15-19 age group, among individuals who perceived their state of health as average, as well as among persons who reported health problems.

On the whole, the Inuit were happy but less so than Quebecers, Canadians or Cree. Women and individuals in the 15-24 age group were less happy than others. However, those living as a couple and highly active in leisure activities seemed to be the happiest.

The data from this survey, while useful in that it describes many facets of Inuit health, was not sufficient to accurately interpret several of the differences observed between the Inuit and other populations (Quebecers, Canadians and Cree). The concept of state of health varies from one era to another, from one civilization to another, and from one culture to another. The frame of reference is in a constant state of flux. State of health is not an abstract perception, rather the reflection of a daily reality developed in a given environment.

It would also be necessary to examine the state of health (in the broader sense) of another group of Inuit -- the 15-19 age group -- who seemed to be especially vulnerable. A great many of them considered their state of health as average, and were dissatisfied and unhappy. These were indeed alarming signs for the next generation of a society in search of its identity.

## CHRONIC HEALTH PROBLEMS

In Nunavik, 44 % of Inuit experienced at least one health problem, and more than a fifth experienced two or more. Women reported more than men. In general, the proportion of those who reported health problems was the same as that for the Cree, but less than that for Quebecers polled in 1987. This last difference likely owed to a lower rate of reporting by men.

Hearing difficulties represented the most common health problem among the Inuit population and proved to be clearly more widespread than among the Cree. The prevalence of hearing problems was highest among youths under 25 years of age, lower in the 25-44 age group,

and again highest among individuals 45 years of age and over. One explanation could be the frequent occurrence of otitis among the young, and deafness caused by exposure to noise among the older Inuit.

Diseases of the respiratory tract constituted the second most frequently occurring problem among the Inuit, especially among individuals under 15 years of age and those 45 years of age and over.

Chronic mental health problems were very widespread among individuals 15 years of age and over. Women were generally more affected than men. However, while the prevalence among the Inuit was higher than among the Cree, it was equivalent to that of Quebecers polled in 1987.

Lastly, diabetes appeared to be much less widespread among the Inuit. Further study should, however, provide a better understanding of this phenomenon. Gestational diabetes among Inuit appeared to be a factor in the 15-24 age group, but the incidence of diabetes among individuals 45 years of age and over would require closer examination.

## HEARING AND VISION

We have established that hearing problems and their consequences (acute problems, chronic problems, and difficulty following a normal conversation) often occurred among the Inuit in much higher proportions than among Quebecers in general.

As for vision problems, results would lead us to believe that the Inuit population had a certain advantage over Quebecers in general (the wearing of glasses was much less widespread, as was the incidence of those suffering from near- and farsightedness). It would be difficult to explain the differences observed between the two populations for at least two reasons. In the first place, reading habits were not necessarily identical. Inuit traditional culture was mainly oral, and the development of a written culture relatively recent. In the second place, access to the health care system was not really comparable, especially regarding specialists. Ophthalmologists' visits in Nunavik have often been irregular, such that vision problems have not been effectively diagnosed.

It would be interesting to juxtapose the hearing and vision data with that concerning the use of services (such as medical visits and examinations in dispensaries, etc.). Furthermore, for vision problems in particular, there is room for comparisons of pertinent cultural change (advent of television), or, again, to further document the observed prevalence as functions of cultural characteristics of the Inuit population (reading habits, type of daily work -- especially among women -- lighting within homes, and so on).

## ACCIDENTS AND INJURIES

The frequency of injuries owing to accidents was, to all intents and purposes, similar among the Inuit, the Cree and Quebecers in general : one person in 25 was affected. Among the first two populations in particular, accidents owing to modes of transportation or sports most often led to restrictions of everyday activities. Injuries among the Inuit appeared to be more serious than among the Cree, in as much as they more often led to hospitalization. More injuries could have been avoided by respecting or being required to respect certain safety standard : wearing a protective helmets when operating ATVs and snowmobiles, wearing seatbelts when driving or riding in cars, wearing floatation vests when travelling over water, imposing speed limits, posting adequate road signs, verifying drivers' licences, ensuring driver sobriety -- to name but a few steps of proven effectiveness.

## DENTAL HEALTH

The rate of edentia among the Inuit of Nunavik was very high, and many individuals neither owned or regularly wore replacement prostheses. Except for 18 to 24 year-olds, a large proportion of the population was afflicted with a deficient masticatory apparatus. Few people used available services, and consultations were often made only in the event of emergency, pain, or the need for extraction. Fortunately, among 18 to 24 year-olds, the situation appeared to be improving, and continued efforts at prevention could help avoid tooth loss and other related problems among older adults. Additional efforts must be made to better target women with a view to avoiding premature extraction.

Lastly, the reasons for the low rate of people wearing prostheses must be examined (such as availability, quality of services, and individual adaptation, etc.), and attempts made to reduce the functional deficiencies identified among adults and the elderly.

## RISK FACTORS ASSOCIATED WITH CARDIOVASCULAR DISEASE (CVD)

As expected, the survey results showed that risk factors associated with CVD were less widespread in Nunavik than elsewhere in Québec, obesity and smoking excluded. However, given the extent of sociocultural change in Nunavik, and the experiences of other native peoples, developments in this area should be watched closely. Although most of the factors were not currently very widespread, the survey made it possible to make an initial assessment of diseases relatively new to Inuit society. A number of indicators also pointed to the gradual rise of cardiovascular morbidity in Nunavik.

As the success of prevention and cardiovascular health promotion programmes depends upon community involvement, the Inuit population must be well informed of the benefits of efforts in this area.

## STATE OF MENTAL HEALTH

The Inuit suffered from a much greater degree of psychological distress than either their Québec or Amerindian counterparts. Indeed suicidal thoughts were 1.5 times and actual suicide 3.5 times more frequent in contemporary Inuit society. Survey findings singled out individuals in the 15-24 year age group as those most troubled. Young single women were found to be particularly vulnerable and entertained suicide as a solution to their problems much more often than their older married sisters or their mothers. The survey pointed to a link between psychological distress in youth and the sexual abuse, including incest, to which they were subjected, without regard for gender. Youth in the 15-24 year age group reported a greater number of suicidal acts than individuals of the preceding generation (25-44 years), and a much greater number of such acts than their elders 45 years of age and over. Parasuicide in youth was found to be considerably higher among women, and was dependent upon both the level of education and exposure to stress in daily life.

# PART III

# CONSEQUENCES OF HEALTH STATUS

# CHAPTER 12

# IMPACT OF DISABILITY UPON CAPACITY TO FUNCTION


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## GLOSSARY

**Degree of short-term disability :**

**Minor disability :** restricted activities leading to a simple reduction of overall activity ;

**Moderate disability :** restricted activities leading to confinement at home owing to incapacity to work (or do housework or go to school) ;

**Severe disability :** restricted activities leading to confinement to bed (at home or in hospital).

**Long-term disability :**

Generalized restriction of activities hindering overall mobility, thereby rendering an individual less functional.

## 12.0 INTRODUCTION

Among the Inuit, one would think that the loss of autonomy was less frequent than among the general Québec population, particularly in light of a much lower average age. Furthermore, the level of temporary disability would seem hard to determine as the process calls upon concepts rather remote from tradition. The notions of confinement to bed and restriction of activity are closer to the world of compensated work and less adapted to native customs which are more characterized by a rigorous, open-air lifestyle exerting high demands on individuals.

Ethnographic literature offers little data on the Inuit's past perception of loss of autonomy or some form of handicap. We only know that the nomad way of life was ill-suited to the sick and elderly who were likely to slow down travel linked to seasonal migration of game upon which group survival depended.

In his monography on the *Kangiqsujuaq* community, Bernard Saladin d'Anglure, basing himself upon the observations of explorer F.F. Paine (1899), described the situation of the « grandparents who were well treated and commanded respect in as much as the burden of sustenance they represented did not compromise the survival of the other family members. If not, they committed suicide because they did not want to be a burden for their family or were simply abandoned by the latter, particularly when the rigour of winter dictated frequent moves to keep pace with game » (Saladin D'Anglure, 1967).

In the same light, the study on the links between the Inuit language and the human body conducted by anthropologist Michèle Therrien approached the issue of corporal completeness in the traditional society : [...] at birth, the parents and particularly the mid-wife made sure that the newborn did not exhibit any malformation, as handicapped children had few chances of survival in a demanding environment where the concept of normality and corporal integrity was associated with efficiency and profitability. Sporadically confronted with situations of extreme poverty, Inuit groups could not afford to care for the invalid. Similarly, individuals who, at some point in their life, showed some form of mental illness deemed hazardous for the safety of the group, were likely to be killed. We also know that men and women who suffered from either illness or old age would often announce that their time had come and that they had lived long enough (Therrien, 1987).

Moreover, in the words of Therrien, « the Inuit consider that the body as a whole and that harming one of its components weakens the entity as a whole. To be in full possession of one's faculties was capital. Only the shaman and the mythical hero could, without risk, face amputation, be reduced to mere skin and bones, or suffer a severe physical handicap » (Therrien, 1987).

This chapter unfolds on a backdrop brimming with tradition. One must bear in mind these significant elements of concept and culture when interpreting the results found on the following pages.

## 12.1 METHODOLOGY : LIMITS OF DATA

A number of *Inuktitut* terms already exist to describe disability. *Piqajatsianqituq* appears to be the generic term referring to an acquired deficiency whereas *piusiqlutuq* is used to refer to a hereditary deficiency. The expression *immimiqiqqajangituk* is often used to designate individuals having partial autonomy whereas the term really corresponds to persons having lost total autonomy such as the chronically bedridden. The words *nukirniq* and *nukiqatsianqittuq* seem to refer respectively to total paralysis and partial paralysis. Lastly, the expression *isumaqatsiangittuq* identifies individuals suffering from a mental illness. For the purposes of this survey, translators/interpreters have retained the expression « to be limited » *ilusirsusianginikuminut surasualuaqajasuungungilaq* which means « cannot function properly » and the expression « to be disable » which in *Inuktitut* reads *qautamaarsiutimik pinasuarunnasuurgungilaq* and literally means « unable to ... ».

This would indicate that terminology has already been developed to refer to the handicapped, the mentally retarded and individuals suffering from a loss of autonomy. The actual language is in all probability more detailed and subtle. All one needs sometimes is to let two or three interpreters follow a specific line of questioning to realize the number of possible variations and particularities.

Another issue to bear in mind upon interpreting survey results is how one can successfully ascertain the actual prevalence of a condition by means of a standardized questionnaire destined for large-scale use.

In light of the low percentage of the answers obtained with respect to the general questions, we have been compelled to abandon the analysis of several sub-questions we have assigned only relative value to certain results by interpreting them primarily as trend indicators.

## 12.2 CONCEPT OF DISABILITY

The concept of disability can be defined as significant difficulty in carrying out regular activities owing to health problems. The level of disability constitutes one of the leading indices used to establish the state of health of a population or assess the consequences of poor health.

Disability has been assessed in all major health surveys conducted to date in Canada and in Québec and, as such, represents an excellent means to compare the state of health of various populations. Two types of disability have been identified, namely short and **long-term disability.**

For the purposes of this survey, **short-term disability** was evaluated by asking the Inuit whether their regular activities had been restricted during the two weeks preceding the survey (Wilkins and Sauvageau, 1988)[1]. A disability was considered « minor » if the person only had to cut back on his or her activities, « moderate », if the person was unable to go to work, to do housework or attend school, and « severe », if the person was hospitalized or confined to bed at home. Short-term disability therefore affects persons who are usually in good health and are forced to reduce or curtail activities for a certain period of time, « more often than not » owing to an accident or a severe incapacitating illness like the flu. This type of disability tends to strike individuals from active segments of the society in younger age groups.

As the questionnaire spanned only the two weeks prior to the survey, an annual average number of disability days was obtained by multiplying the results by 26 (Wilkins and Sauvageau, 1988), a general rule of thumb commonly used for comparison purposes [2].

Long-term disability was assessed by determining the level of dependency and autonomy of household members. Often permanent in nature, this form of disability results from a malfunction in the locomotor system or mental or intellectual deficiency of moderate to severe proportions. This form of disability does not affect a specific system such as the senses (deafness, blindness) rather exerts a limiting effect on overall activities which hampers the mobility of individuals and their capacity to function properly. Contrary to short-term disability, long-term disability affects persons of all age groups, particularly the very young and the very old. Among the leading factors causing long-term disability are certain complications at birth (cerebral palsy), severe infections (meningitis), chronic debilitating illnesses (cancer, chronic pulmonary obstruction, etc.), the consequences of brain haemorrhages or the residual effects of severe traumatism of the nervous or locomotor systems.

(1) In terms of days where bed confinement was necessary, days where disability did not warrant bed confinement and days where activities were restricted (Santé Québec, 1988, Volume 1, P. 176).

(2) As the data for the purposes of this survey conducted among the Inuit was not collected annually (i.e. the collect was carried out over three fall months, namely between September and December), we believe that the multiplication by 26 will result in a tendency to overestimate the annual average number of days of short term disability among the Inuit.

## 12.3 SURVEY RESULTS

### 12.3.1 Short-term disability

#### 12.3.1.1 Status

- ***Severe disability***
  Four per cent of Inuit had to stay in bed all day or nearly all day during the two weeks preceding the survey for an average duration of 3.5 days. A recent study (Blanchet, 1992) revealed that the overall rate of hospitalization in Nunavik (237 for 1,000 inhabitants) was twice as high as that among the overall Québec population (113 for 1,000)[1] (Rochette, 1990). The inhabitants of Nunavik were hospitalized an average of 1.78 day in 1989. One could therefore estimate, based upon the self-evaluation of the population, that the number of days spent confined to a hospital bed in Nunavik represented approximately 50 % of the average estimated duration of confinement to bed in this survey.

- ***Moderate disability***
  Save for these days of confinement, 3 % of Inuit reported an average of three days during these same two weeks when they where unable, without being confined to bed, to carry out their daily activities, namely hunting, working, attending classes or doing housework, because of illness.

- ***Minor disability***
  In addition to the days already mentioned, 2 % of Inuit declared that, during the two weeks prior to the survey, illness had forced them to reduce their regular activities for an average of 3.5 days.

- ***Total disability***
  In total, 7 % of Inuit suffered from short-term disability during the two weeks preceding the survey. This proportion was slightly lower among the Cree for whom the figure stood at 5 %. It should be noted that, contrary to the Cree study, the current survey was conducted in late fall and early winter, a period when various illnesses, such as the flu and other respiratory ailments, occur more frequently.

(1) Note the overall rate of hospitalization in Nunavik is probably higher owing to bed confinement after giving birth.

The magnitude of short-term disability can also be evaluated in a population by estimating the average annual number of disability days per person (see Table 12.1).

## TABLE 12.1

**Average annual number of short-term disability days among the Inuit and the Cree (1991), according to sex (day) [Inuit, 1992]**

| SEX | POPULATION | | | |
|---|---|---|---|---|
| | INUIT | | CREE | |
| | Ep | Average of days | Ep | Average of days |
| Males | 3,653 | 7.8 | 4,683 | 3.8 |
| Females | 3,395 | 8.6 | 4,639 | 9.8 |
| TOTAL | 7,048 | 8.2 | 9,322 | 6.8 |

Among the Inuit, the average annual number of short-term disability days per person was eight for men, nine for women and eight for the overall population. Among the Cree, these averages were respectively four days for men, ten for women and seven for the overall population. At first glance, there appears to be a variation in the average annual number of short-term disability days between these two populations, particularly with respect to sex. The data, however, should be interpreted with caution as the Cree survey was also seasonal being conducted during the summer. One could therefore presume that the total average annual number of short-term disability days was overestimated. There was no indication that the difference observed by sex in the two populations varied according to seasonal data. Whereas the average annual number of disability days varied by sex, there was clearly a link between the average duration of short-term disability and age. Table 12.2 shows that the average duration of disability actually increased with age, a phenomenon observed by Labbé (1987).

## TABLE 12.2

**Average annual number of short-term disability days among the Inuit, according to age (day) [Inuit, 1992]**

| AGE | AVERAGE OF DAYS | ESTIMATED POPULATION |
|---|---|---|
| 0-14 years | 8.0 | 2,867 |
| 15-24 years | 5.2 | 1,559 |
| 25-44 years | 8.2 | 1,700 |
| 45-64 years | 10.6 | 767 |
| 65 years + | 29.5 | 155 |
| TOTAL | 8.2 | 7,048 |

### 12.3.1.2 Leading causes of short-term disability

The following were the leading causes of short-term disability among the Inuit : disorders of the respiratory, digestive and osteo-articular systems, ailments and afflictions of other origins, as well as various traumatic lesions and accidents (Table 12.3). While respiratory ailments topped the list, it should be noted that they affected approximately 10 % more Inuit than Cree or Quebecers. As mentioned in Chapter 4, smokers were numerous in Nunavik. However, after attempting to explain this variation by the strong propensity of the Inuit for smoking, the hypothesis was statistically rejected. The considerable discrepancy between the Inuit and Cree/Quebecers in terms of respiratory ailments may in part be attributable to the season during which the data was collected.

## TABLE 12.3

**Causes of short-term disability among the Inuit, the Cree (1991) and Quebecers (1987) (%) [Inuit, 1992]**

| CAUSE | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Respiratory | 41.4 | 188 | 29.7 | 133 | 27.1 | 165,034 |
| Other | 20.2 | 91 | 22.2 | 99 | 17.9 | 109,115 |
| Digestive | 14.8 | 67 | 3.5 | 16 | 10.5 | 64,119 |
| Discomfort/headache | 7.0 | 32 | 12.7 | 57 | 7.2 | 44,123 |
| Osteo-articular | 6.7 | 30 | 9.3 | 41 | 11.8 | 71,828 |
| Lesions/accidents | 6.2 | 28 | 7.8 | 35 | 9.8 | 59,605 |
| Skin infection | 2.6 | 12 | 1.0 | 4 | 1.4 | 8,748 |
| Circulatory problems | 1.1 | 5 | 2.5 | 11 | 5.7 | 34,919 |
| Sense-organ problems | 0 | 0 | 10.3 | 46 | 3.2 | 19,309 |
| Pregnancy and genital problems | 0 | 0 | 1.0 | 4 | 2.2 | 13,665 |
| Mental problems | 0 | 0 | 0 | 0 | 3.2 | 19,562 |
| TOTAL | 100 | 453 | 100 | 446 | 100 | 610,027 |

In order of priority, the causes of short-term disability among the Inuit were similar to those observed among the Cree and Quebecers. Despite the high rate of ear problems (earaches and other) and widespread use of eye glasses (Chapter 9, Hearing and Vision section), sense-organ problems were completely absent in the Inuit. Some 10 % of the Cree population indicated sense-organ problems as a cause of short-term disability. This should not necessarily be interpreted as an absence of such problems among the Inuit, but rather as either a potential solution (adequate hearing aid or eyeglasses) or a cause of long-term disability, as will be further demonstrated by the data. Furthermore, it was interesting to

observe that although mental problems represented the seventh cause of short-term disability among Quebecers, there was no indication of this phenomenon among the Inuit or Cree.

Lastly, some 6 % of Inuit experiencing short-term disability, nearly all 25 years of age or over and two thirds male, declared that their limitation was attributed to a health problem caused by an accident.

### 12.3.1.3 Duration of health problems leading to short-term disability

Table 12.4 reveals an interesting fact. As anticipated, in 75 % of the cases, the problems leading to short-term disability were primarily of short duration of two weeks or less. The remaining 25 % of the population indicated that their short-term disability was caused by a long-term condition such as acute arthritis or asthma attacks which had created temporary discomfort during the two weeks prior to the survey. Comparison of these findings to those observed among the Cree revealed that Cree attributed their short-term disability to long-term health conditions. This may be due to the fact that, the Cree, like other Quebecers, were more affected by chronic illnesses such as diabetes, circulatory problems, than the Inuit.

## TABLE 12.4

**Duration of health problems leading to short-term disability among the Inuit and the Cree (1991) (%) [Inuit, 1992]**

| DURATION OF HEALTH PROBLEMS | POPULATION | | | |
|---|---|---|---|---|
| | INUIT | | CREE | |
| | % | Ep | % | Ep |
| Problem solved | 9.1 | 38 | NAP | NAP |
| 2 days or less | 26.3 | 111 | 14.4 | 63 |
| 3 days to 2 weeks | 39.6 | 167 | 37.9 | 166 |
| More than 2 weeks to less than a year | 7.3 | 31 | 13.8 | 61 |
| 1 to 5 years | 8.3 | 35 | 16.2 | 71 |
| More than 5 years | 8.3 | 35 | 14.2 | 62 |
| From birth | 1.1 | 5 | 1.0 | 4 |
| Not aware of duration | 0 | 0 | 2.5 | 11 |
| TOTAL | 100 | 422 | 100 | 438 |

## 12.3.2 Long-term disability

### 12.3.2.1 Status

According to recent data (MSSS, 1992), some 800,000 men and women in Québec suffer from some form of disability. This represents 11 % of the population, a percentage slightly lower than the Canadian average. Of this number, 40 % are currently experiencing minor disability, whereas 35 % and 25 % exhibit moderate and severe disability respectively.

A study recently conducted in Nunavik (Riopel, 1992) revealed that 2.7 % of the Inuit population suffered from a loss of autonomy. The major causes for this were aging (31 %), physiological (23 %) and intellectual (20 %) deficiencies, sensorial impairment (11 %), disability leading to long-term hospitalization (10 % ) and mental illness (4.5 %). A previous study on the state of health of the Inuit of northern Québec (Foggin, 1989) showed that more

than 4 % of the total population declared suffering from physiological problems or being inconvenienced by a handicap. The types of conditions found in the study were problems related to vision or blindness (14 %), the legs (12 %), heart (11 %), ear (9 %) and back (7 %).

In this survey, 2 % of the Inuit, 1 in 4 under the age of 15, 1 in 2, 45 years and over, and the majority women, reported having to remain either seated or in bed for the better part of the day because of their state of health. Whereas this restriction of activity lasted an average of 8 years for three-quarters of these individuals, a quarter had been experiencing it since birth. A previous study revealed that 10 % of the seriously handicapped Inuit were children under 5 years of age (Riopel, 1992).

Among the Cree, the proportion of individuals confined to bed or a wheelchair was 0.3 % compared with 0.5 % among Quebecers. Although this data should be interpreted with caution, it should be noted that this type of disability affected seven times as many Inuit as Cree, and four times as many Inuit as Quebecers. The high prevalence of serious illnesses such as meningitis among small children could partially explain this last observation.

Evaluation of the extent of handicaps affecting these individuals revealed that 62 % were totally unable to work outside their home and 49 % could not perform regular house work.

### 12.3.2.2 Primary causes of long-term disability

As found in the Cree and other Quebecers, the leading cause of long-term disability, as perceived by the household respondent (Table 12.5), was osteo-articular disorders. Moreover, these conditions affected more Inuit than Cree and Quebecers (36 % compared with 27 % and 25 % respectively). Discomfort and headaches[1] ranked second along with sense-organ problems (9 % each). These conditions ranked sixth and ninth respectively among the Cree and Quebecers. It is well known that the Inuit suffer from numerous ear problems, the common earache probably being the most studied ailment in Nunavik. As observed earlier, sense-organ problems were not among the major causes of short-term disability. It is therefore possible that ear-related illnesses have become chronic and inflicted permanent damage to this organ.

(1) It should be noted that the Inuit may label ear problems as « headaches », the proximity of the two body parts involved, namely ears and head, being a source of confusion in Nunavik.

## TABLE 12.5

**Causes of long-term disability among the Inuit, the Cree (1991) and Quebecers (1987) (%) [Inuit, 1992]**

| CAUSE | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Osteo-articular | 35.7 | 33 | 25.1 | 104 | 26.9 | 109,794 |
| Discomfort/headache | 9.0 | 8 | 0 | 0 | 2.4 | 9,967 |
| Sense-organ problems | 8.5 | 8 | 0.9 | 4 | 3.1 | 12,553 |
| Digestive | 4.3 | 4 | 2.1 | 9 | 1.8 | 7,561 |
| Circulatory | 4.3 | 4 | 12.7 | 53 | 16.3 | 66,841 |
| Skin infection | 4.3 | 4 | 0 | 0 | 0.4 | 1,608 |
| Metabolic and endocrinal disease | 4.3 | 4 | 1.3 | 6 | 2.4 | 9,887 |
| Mental problems | 3.2 | 3 | 6.7 | 28 | 5.4 | 22,232 |
| Lesion/accident | NAP | NAP | 10.3 | 43 | 11.2 | 45,965 |
| Respiratory | 0 | 0 | 12.6 | 52 | 5.2 | 21,420 |
| Other | 26.4 | 25 | 28.3 | 118 | 24.9 | 101,625 |
| TOTAL | 100 | 93 | 100 | 417 | 100 | 409,453 |

Noteworthy is the finding that the two leading causes of long-term disability, respiratory and circulatory problems, were virtually absent among the Inuit, Cree and other Quebecers. Although the Inuit are notorious smokers, it seems that the long-term adverse effects of this habit have yet to become evident.

Lastly, the absence of accidents (or lesions due to an accident) as a cause of long-term disability among the Inuit could be explained by the fact that the survey questionnaire was modified in a way that the accident itself was disregarded. However, more than a third of respondents who reported long-term disability (34 % compared to respectively 11 % and

17 % for Cree and Quebecers) believed that it had been caused by the residual effects of an accident, the nature of which remained unknown. Although considerable, this discrepancy should be interpreted with caution as this variable was measured differently for the Inuit. It can be concluded, however, that accidents represent a significant cause of long-term disability among the Inuit and that prevalence is higher than among either the Cree or Quebecers.

In closing, we should like to remind readers that the causes perceived by the respondents themselves were not necessarily the actual causes of disability. Individuals who become hemiplegic following a brain haemorrhage would be more likely to identify the pain and stiffness in their limbs as the source of their condition than to associate the latter with a cerebro-vascular incident[1].

### 12.3.2.3 Duration of health problems leading to long-term disability

Contrary to what was found earlier for short-term disability being caused primarily by severe health problems, Table 12.6 shows that the leading cause of long-term disability was chronic health problems. A similar phenomenon was observed among the Cree even though 19 % of them reported that the duration of health problems giving rise to long-term disability was between two weeks and one year.

(1) This warning also applies to Quebecers and the Cree.

## TABLE 12.6

**Duration of health problems leading to long-term disability among the Inuit and the Cree (1991) (%) [Inuit, 1992]**

| DURATION OF HEALTH PROBLEMS | POPULATION | | | |
|---|---|---|---|---|
| | INUIT | | CREE | |
| | % | Ep | % | Ep |
| Problem solved | 0 | 0 | NAP | NAP |
| 2 days or less | 0 | 0 | 0 | 0 |
| 3 days to 2 weeks | 0 | 0 | 0 | 0 |
| More than 2 weeks to less than a year | 0 | 0 | 18.9 | 62 |
| 1 to 5 years | 40.6 | 38 | 39.4 | 129 |
| More than 5 years | 35.7 | 33 | 32.4 | 106 |
| From birth | 23.7 | 22 | 5.9 | 19 |
| Not aware of duration | 0 | 0 | 3.4 | 11 |
| TOTAL | 100 | 93 | 100 | 327 |

## 12.3.3 Degree of autonomy

This survey also assessed the degree of autonomy in individuals who indicated that their daily activities had been restricted. Two per cent of the Inuit (75 % of them either very young (0-14 years) or older (45 years +)), stated that they required the assistance of another person to handle their affairs, do their daily housework, run their errands or simply go out (refer to 12.3.2.1), because of a handicap or health problem. Moreover, 70 % of those with limited autonomy were women.

Among individuals who provided assistance, 73 % were related to the persons suffering from a loss of autonomy and lived under the same roof, whereas 19 % were relatives not living under the same roof. Another 8 % were not related to the person.

### 12.3.4 Overall capacity to function

A general index of functional capacity among the Inuit was computed by asking the question « Can you normally go out when the weather is nice ? » to which 99 % of respondents answered « yes ». The same results were found in the Cree and Quebecers.

## 12.4 SUMMARY

Until now, little data was available on limited activity in the Inuit, this survey has helped in bridging the gap.

The young age of the Inuit population (55 % are under 20 years of age) no doubt contributed to the low prevalence of disability. One could assume however, that the incidence of disability was slowly increasing owing to changes in lifestyle, greater frequency of accidents, and the emergence of new illnesses having a significant impact upon Inuit quality of life, namely diabetes, obesity, high blood pressure or arteriosclerosis. The population was also gradually aging and certain residual effects of serious infantile illnesses such as meningitis continued to affect the current generations. The Inuit population was therefore confronted with illness at both ends of the life line.

Problems facing individuals who suffered a loss of autonomy was relatively new to Inuit society which, in the coming years, will witness a reshaping of the age pyramid. The creation of health services has already resulted in the survival and subsistence of numerous individuals seriously affected from the physiological, mental or intellectual standpoints. Efforts will still be required to change thinking patterns, enhance tolerance and set up new support structures and services adapted to the physical, social and cultural environment of the Inuit. It will be particularly important to contribute to enhancing a sense of community pride and cooperation, and strive to keep people in familiar surroundings rather than sending them to well equipped yet depersonalized, remote facilities.

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# CHAPTER 13

# USE OF SERVICES AND CONSUMPTION OF MEDICATIONS


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## 13.0 INTRODUCTION

The information on the use of health and social services by the Inuit population can be used not only to ascertain their level of consumption but also, indirectly, to shed light on the distribution of these services.

This chapter focuses upon the use of services offered by health and social assistance professionals, as well as the use of medications. The use of services was primarily examined by analysing consultations according to sex and age of patient, type of professional consulted, reason for consultation, duration of health problem and location where most recent consultation took place. The analysis of medication consumption among the Inuit provided information on the extent and nature of consumption habits.

In an effort to better position the Inuit condition, the data from the survey conducted in 1991 in the Bay James Cree and in 1987 among Quebecers was integrated into the analysis of the results from the survey among the Inuit of Nunavik, thereby contributing to a slightly better understanding of the problem of accessibility of health and social services, as well as their differences compared with the overall health care picture in Québec.

## 13.1 METHODOLOGY, SCOPE AND LIMITS OF DATA

Results presented in this report have been derived from questions appearing exclusively in the Household Questionnaire. Answers provided by the principal respondent, namely a third party, concerning use of medications and recourse to health services applied to all household members. This principal respondent probably found it more difficult to determine with accuracy the type, name and use of any medication by the members of his or her household whether they were adolescents, adults, spouses, etc. during the two days prior to the survey. Although the results of this chapter may be somewhat inaccurate, that is either over or under-estimated, they remain a good indicator of the consequences of the state of health among the Inuit.

Moreover, as in the previous chapters of this report, this last chapter reflects the challenge posed the cultural transposition of a health survey. The comparison of the Inuit results with those observed for Quebecers will always be dependent upon the various differences which exist between their respective realities, namely organization of health care services, points of sale and distribution of medications (co-operatives, village dispensaries, pharmacies in the two health care centres), availability and type of professionals providing health services in remote regions, etc.

## 13.2 USE OF HEALTH AND SOCIAL SERVICES

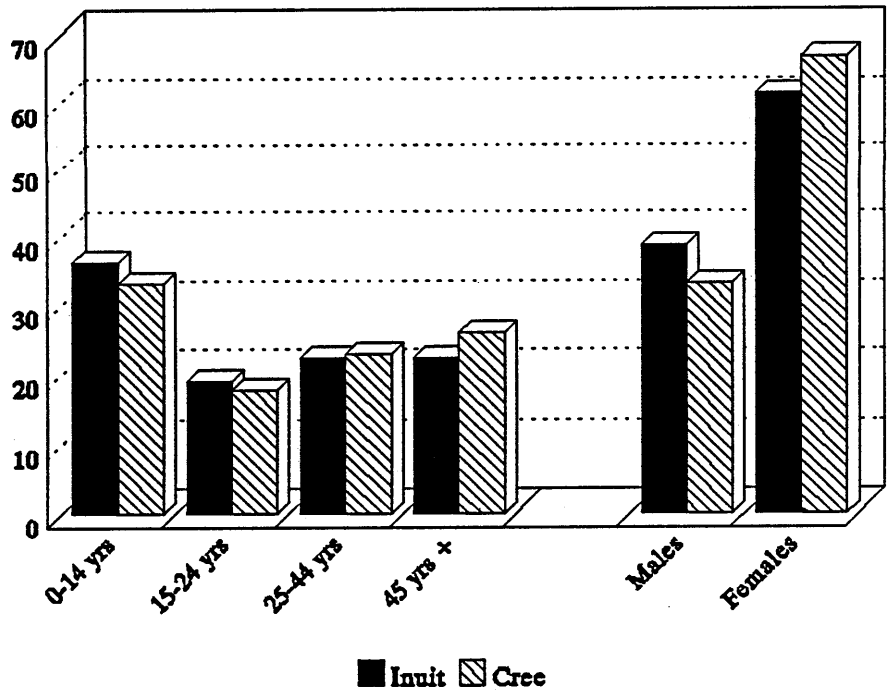
### 13.2.1 The most recent consultation

During the two weeks prior to the survey, 17 % of the Inuit population consulted at least one health and social service professional. This proportion was lower than in southern Québec (22 %) yet corresponded to the level observed among the Cree (17 %). Some 30 % of the Inuit consulted more than one type of professional compared with 25 % of the Cree and 22 % of Quebecers (SQS 87). Graph 13.1 shows that among those who used health care services (17 %), 61 % were women and 39 % men. The same proportions applied to the Cree and Quebecers. Inuit men accounted, for 39 % of consultations compared with 33 % of Cree men and 42 % (SQS 87) of Québec men.

A thorough examination of individuals having consulted a professional (Graph 13.1) revealed that young Inuit under 15 years of age represented the group having had the highest number of consultations two weeks prior to the survey (36 %), whereas individuals in the 15 to 24 year age group were those who consulted the least (19 %). The same proportions were found among the Cree.

## GRAPH 13.1

**Proportion of Inuit individuals having consulted a health and social service professional within two weeks prior to the survey, according to age and sex (%) [Inuit, 1992]**




## 13.2.2 Types of professionals consulted

The Inuit population was able to consult a number of health and social service professionals. It should be noted that there were still no Inuit doctors, dentists or nurses. However, a few Inuit mid-wives, auxiliary nurses, social and community workers lived in Nunavik. A general practitioner was stationed permanently in only five villages (*Kuujjuaq*, *Inukjuak*, *Povungnituk*, *Salluit* and *Kuujjuarapik*), the largest communities of Nunavik. *Kuujjuaq* and *Povungnituk* each had a health care centre, namely *Tulattavik* and *Innulitsivik* respectively, and were leading sub-regional centres in the field of health and social services. Each of these health care centres carried out regular functions incumbent upon CLSCs, hospitals and social services centres. The other twelve communities in Nunavik relied upon the basic health services provided by dispensaries in the CLSCs of *Inuulitsivik* and *Tullatavik* Health Care Centres.

As shown in Table 13.1, when asked what health and social service professional they had consulted during the two weeks prior to the survey, 10 % of the Inuit mentioned that they

had consulted a nurse, 4 % a general practitioner, 4 % a dentist/denturologist and 3 % the *aanniasiurtiapik*[1] This breakdown corresponded to that of the Cree, although more Cree (6 %) than Inuit consulted general practitioners. A comparison of the Inuit with Quebecers (SQS 87) revealed that nurses based in Nunavik and general practitioners in southern Québec were consulted in the same proportions. One can therefore conclude that access to health and social services in Nunavik differs from that in southern Québec. Furthermore, it would appear that as many Inuit as Quebecers consulted dentists/denturologists (4 % and 5 % respectively). Lastly, only 1 % of the Inuit stated that they had consulted a specialist compared with 5 % of Quebecers, a fact easily explained by the rarity of this resource in Nunavik.

## TABLE 13.1

**Type of health and social service professionals consulted within two weeks prior to the survey by the Inuit, the Cree (1991) and Quebecers (1987) (%) [Inuit, 1992]**

| TYPE OF PROFESSIONALS | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Nurse | 9.9 | 698 | 10.5 | 980 | 1.2 | 76,867 |
| General practitioner | 4.3 | 304 | 5.6 | 524 | 10.3 | 661,941 |
| Dentist/denturologist | 3.5 | 246 | 2.9 | 272 | 4.5 | 290,459 |
| *Aanniasiurtiapik* | 2.7 | 193 | NAP | NAP | NAP | NAP |
| Social or community worker or other similar counsellor | 1.1 | 76 | 0.5 | 44 | * | 19,034 |
| Specialist | 0.7 | 50 | 1.5 | 141 | 4.8 | 306,972 |
| Any other person providing treatment or advice | 0.7 | 47 | * | 19 | 0.5 | 29,305 |
| Mid-wife | 0.6 | 40 | NAP | NAP | NAP | NAP |
| Optometrist or ophthalmologist | * | 19 | 0.6 | 58 | 1.6 | 102,290 |

* → % < 0.5 %

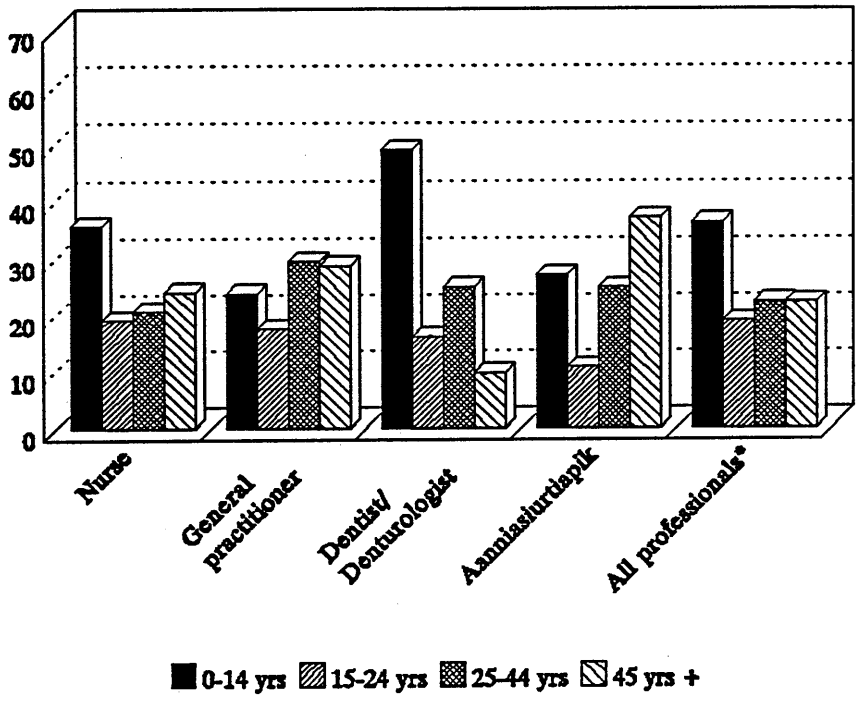
(1) This term refers to the orderlies - interpreters on the Hudson Bay shore whose role has been expanded to include community health responsibilities similar to those assumed by community health workers (CHW) in the Ungava region.

### 13.2.3 Characteristics of Inuit clientele by type of health professional consulted

Graph 13.2 clearly indicates that young Inuit aged between 0 and 14 years represented more than a third (36 %) of the persons using health and social services, regardless of the professional consulted. In contrast, individuals in the 15-24 age group reported the lowest number of consultations with respect to the professionals most in demand. A close examination of the clientele of the four major types of professionals consulted revealed variations in accordance with patient age. Whereas young Inuit in the 0-14 age group comprised more than a third of the clientele for nurses, they represented nearly half of the clientele for dentists/denturologists. Nearly 60 % of these individuals who consulted general practitioners and the *aanniasiurtiapik* were found to be over the age of 25. Moreover, individuals over 45 years of age represented 37 % of the clientele for the *aanniasiurtiapik* and only 30 % of the clientele for general practitioners. General practitioners were less accessible which would explain, in part, their lack of popularity among individuals aged 45 years and over. The fact that the *aanniasiurtiapik* were Inuit certainly contributed to prompting older Inuit to turn to Western medicine. These two types of professionals are called upon to intervene at different moments and respond to different needs expressed by the same persons. A large portion of the work performed by the *aanniasiurtiapik* consists in ensuring periodic, close follow-up on chronic problems which obviously have a greater prevalence among older individuals. It was therefore not surprising that two patients in five were over the age of 45.

## GRAPH 13.2

**Type of health and social service professionals consulted within two weeks prior to the survey, according to age (%) [Inuit, 1992]**




* All professionals consulted at least once by individuals.

## 13.2.4 Reasons for most recent health professional consultation

Based upon the International Classification of Diseases (ICD, the 9th edition), the primary reasons for consultation have been grouped together to facilitate interpretation. Among the Inuit, Cree and Quebecers, miscellaneous motives, which covered a broad range of health problems, remained the primary reason for consultation (Table 13.2). Unfortunately, this class, given its scope, could not be covered in sufficient length in this report. Ranking second among the Inuit and the Cree and Quebecers, prevention motivated one Inuit in five to visit a health professional. Digestive problems set the Inuit apart from Cree and Quebecers as they were mentioned twice as often as a reason for the most recent consultation. Although the previous chapter indicated that respiratory problems were not perceived as a cause of disability, one Inuit (as well as one Cree and one Quebecer) in eight mentioned it was the reason for the most recent consultation. Lastly, circulatory problems were not included as

a reason for consultation by the Inuit, whereas 6 % of Quebecers stated that their most recent consultation owed to such aliments.

## TABLE 13.2

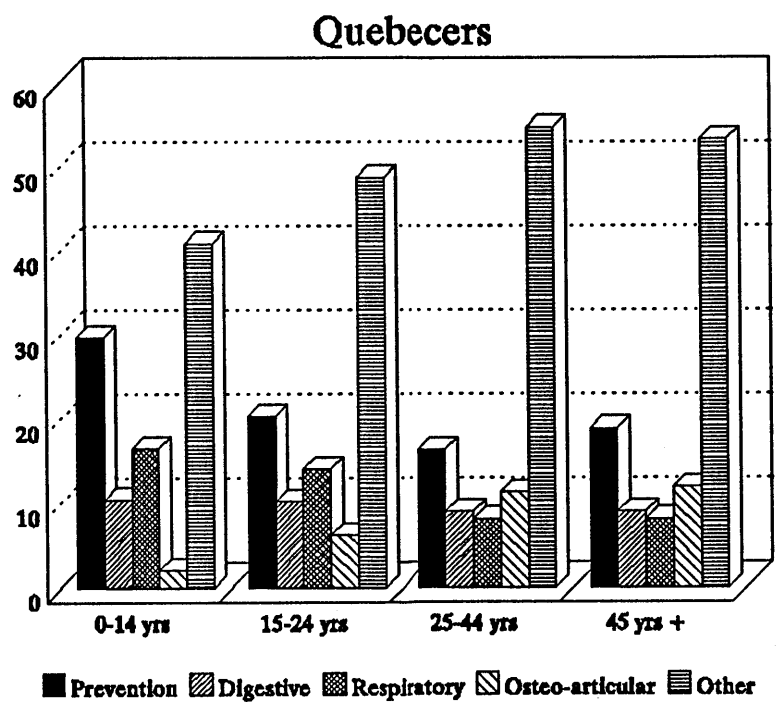
**Reasons for most recent consultation with a health and social service professional within two weeks prior to the survey among the Inuit, the Cree (1991) and Quebecers (1987) (%) [Inuit, 1992]**

| REASONS FOR THE MOST RECENT CONSULTATION | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Prevention | 18.2 | 175 | 18.8 | 301 | 20.6 | 290,211 |
| Digestive problems | 18.2 | 175 | 10.6 | 169 | 9.3 | 130,195 |
| Respiratory problems | 11.6 | 112 | 10.2 | 163 | 10.3 | 144,914 |
| Osteo-articular | 7.1 | 68 | 3.6 | 57 | 9.1 | 127,595 |
| Sensorial problems | 5.1 | 49 | 9.4 | 151 | 5.4 | 75,335 |
| Lesions and accidents | 4.4 | 42 | 6.7 | 107 | 6.0 | 84,164 |
| Skin infections | 4.2 | 41 | 3.6 | 57 | 3.3 | 46,554 |
| Female genital, pregnancy and postpartum problems | 2.7 | 26 | 4.3 | 69 | 4.7 | 66,043 |
| Discomfort and headache | 1.8 | 17 | 1.9 | 31 | 1.8 | 25,810 |
| Circulatory | 0.9 | 9 | 3.8 | 60 | 5.5 | 77,155 |
| Endocrinology | 0.7 | 7 | 5.5 | 88 | 1.3 | 17,655 |
| Other miscellaneous reasons | 25.1 | 239 | 21.6 | 346 | 22.7 | 321,595 |

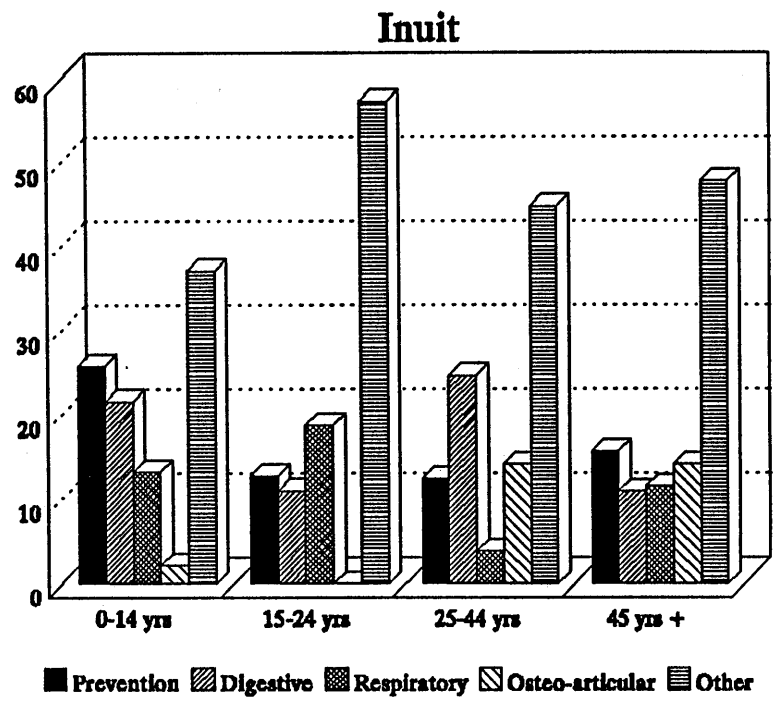
Whereas the reasons indicated by the Inuit for their most recent consultation were the same for both men and women, they varied considerably in accordance with age. The same phenomenon applied in southern Québec although the spread was not as important as among the Inuit (Graphs 13.3a and 13.3b).

**Reasons for having consulted a health and social service professional within two weeks prior to the survey for the Inuit and Quebecers (1987), according to age (%) [Inuit, 1992]**

GRAPH 13.3A




GRAPH 13.3B



Whereas the Inuit and Quebecers consulted professionals for identical reasons, namely prevention, digestive, circulatory, osteo-articular and other problems, there were variations by age group from one population to the other. Graphs 13.3a and 13.3b reveal that (1) prevention in both Nunavik and southern Québec was a reason frequently mentioned by all age groups, peaking in young Inuit aged between 0 and 14 years ; (2) osteo-articular problems affected the same age groups in both Nunavik and southern Québec in the same proportions ; (3) other health problems remained important reasons for consultation among both Inuit and Quebecers, although Inuit aged 45 years and over mentioned them more often.

### 13.2.5 Duration of health problem leading to most recent consultation

A study of the duration of health in the Inuit revealed that the latter consulted primarily for short-term problems (one month or less). Indeed, 35 % of the Inuit consulted a professional for a health problem which had prevailed for less than a week and 32 % for problems which had been present for more than a week yet less than a month. In comparison, more than a third of Quebecers in 1987 indicated a long-term health problem (more than a year) as the reason for their most recent consultation. Only 16 % of Quebecers compared with 35 % of the Inuit had consulted a professional for a problem which had appeared a few days before.

In 70 % of all cases, consultations took place in village dispensaries. The two health care centres (*Inuulitsivik, Tulattavik*) shared 25 % of the remaining 30 %. A comparison with data from southern Québec allowed as to conclude that the dispensaries in Nunavik played the role of private doctors' offices and medical centres.

## 13.3 CONSUMPTION OF MEDICATIONS

More than a quarter (26 %) of the Inuit population had taken at least one medication two days prior to the survey, a finding comparable to that observed among the Cree, but lower than that found among Quebecers, where the proportion reached 45 %. Note that health professionals in Nunavik suspected that compliance with prescribed medications was recognized as low.

Significant differences were observed by age in the consumption of medications two days prior to the survey. Indeed, among the Inuit, the most important medication users (38 %) were young people (14 years and under). The breakdown was similar among the Cree yet represented more than twice the consumption of young Quebecers (17 %) of the same age group (Table 13.3). Moreover, twice as many Quebecers as Inuit (39 % vs 21 %) aged 45 years and over declared having taken a medication two days prior to the survey. At both

ends of the age pyramid, Inuit and Quebecers showed a rather distinctive pattern of medication use.

## TABLE 13.3

**Consumption of medications two days prior to the survey by the Inuit, the Cree (1991) and Quebecers (1987), according to age (%) [Inuit, 1992]**

| AGE GROUP | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| 0-14 years | 38.2 | 709 | 34.6 | 914 | 16.7 | 479,383 |
| 15-24 years | 16.2 | 298 | 15.8 | 418 | 13.9 | 400,132 |
| 25-44 years | 24.4 | 453 | 23.7 | 624 | 30.3 | 872,916 |
| 45 years + | 21.2 | 393 | 25.9 | 684 | 39.1 | 1,125,666 |
| TOTAL | 100 | 1,853 | 100 | 2,640 | 100 | 2,878,097 |

### 13.3.1 Types of medications consumed two days prior to the survey

Analgesics were the medications most used (10 %) by both Inuit and Quebecers (SQS 87) within the two days prior to the surveys (Table 13.4). Widespread use can be partially explained by the fact that analgesics such as acetaminophen and aspirin have recently been made available over the counter. The second series of medications most frequently used by the Inuit was vitamins and minerals (7 %) ; in Quebecers this category also ranked second (18 %). Antibiotics came third and were used twice as often by the Inuit as by Quebecers (4 % vs 2 %). It is probable that the high incidence of earaches, flu (infections in respiratory tract) and skin infections among children could explain the greater use of antibiotics. Medications for the « heart », « blood pressure », « diabetes » as well as tranquillizers were used significantly less by the Inuit than by the Cree and Quebecers, as attested by the near absence of circulatory problems and diabetes among the Inuit. Lastly, traditional medications were little used by both the Inuit and the Cree.

## TABLE 13.4

**Types of medications used two days prior to the survey by the Inuit, the Cree (1991) and Quebecers (1987) (%) [Inuit, 1992]**

| TYPE OF MEDICATIONS | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | INUIT | | CREE | | QUEBECERS | |
| | % | Ep | % | Ep | % | Ep |
| Analgesics | 9.7 | 682 | 7.1 | 654 | 10.2 | 656,496 |
| Vitamins and minerals | 6.5 | 457 | 8.6 | 800 | 17.5 | 1,125,196 |
| Antibiotics | 4.3 | 304 | 3.9 | 359 | 2.0 | 129,942 |
| Skin creams | 4.0 | 282 | 4.5 | 418 | 4.0 | 257,597 |
| Various medications combined | 2.5 | 175 | 3.9 | 365 | 6.8 | 432,148 |
| Cough or cold medication | 2.4 | 171 | 1.7 | 161 | 4.4 | 284,830 |
| Medication for digestive problems | 2.3 | 162 | 1.9 | 175 | 2.4 | 151,919 |
| Medication for the heart or blood pressure | 2.0 | 138 | 4.0 | 371 | 7.3 | 469,306 |
| Laxatives | 0.7 | 52 | * | 28 | 1.9 | 119,765 |
| Medication for diabetes | 0.6 | 39 | 3.0 | 277 | NAP | NAP |
| Tranquillizers | 0.5 | 37 | * | 32 | 5.1 | 325,234 |
| Traditional Inuit medication | * | 26 | NAP | NAP | NAP | NAP |
| Traditional Cree medication | NAP | NAP | * | 10 | NAP | NAP |
| Stimulants | NAP | NAP | * | 25 | 0.7 | 41,846 |

* → % < 0.5 %

## 13.4 SUMMARY

The results of this section showed that approximately one Inuit in six consulted at least one health and social service professional during the two weeks prior to the survey. This proportion was lower than that observed in southern Québec where one Quebecer in five consulted a health professional. Nearly one Inuit in three mentioned having consulted more than one professional. This figure, however, should be interpreted with caution since care

providers and patients did not always speak the same language ; it is also possible that older Inuit having had an *aanniasiurtiapik* as an interpreter might have considered that they consulted more than one professional. As expected, Inuit women consulted more often than their counterparts in other populations ; Inuit men, however, consulted more frequently than the Cree yet less often than Quebecers. Again, the fact that women accompanied children on medical visits might have contributed to overestimating the use of services, as the opportunities to meet a professional were indeed more frequent. This is justified by the fact that nearly two Inuit in five having consulted a professional were children under 15 years of age. Consultations associated with pregnancy, contraception and prevention, which are not illnesses, explained the higher number of women who consulted more often. It should be noted that the Inuit who tended to consult the least were men and women in the 15-24 age group.

This brief chapter also addressed the type of professionals consulted by the Inuit. Nearly three Inuit in five having consulted a health and social service professional during the two weeks prior to the survey stated having called upon a nurse, whereas more than two Inuit in five declared having required the assistance of either a general practitioner or a dentist, and one in five mentioned having consulted the *aanniasiurtiapik* and social workers. In short, the nurses based in Nunavik played a role similar to that of general practitioners in southern Québec. Dentists and denturologists were consulted by the same proportion of individuals in both northern and southern Québec.

As far as who consulted whom for what, it was found that a half of all dental patients were children under 15 years of age. Although the breakdown of individuals who consulted nurses was more age related : young Inuit under 15 years of age represented the core of their clientele (36 %). General practitioners and the *aanniasiurtiapik* were consulted by older Inuit, whereas nearly one-third of the clientele of the *aanniasiurtiapik* comprised of individuals aged 45 years and over.

Prevention combined with digestive and respiratory problems were mentioned by respondents as the primary reasons for their most recent consultation. Whereas Inuit of all age groups consulted to prevent illness, children under 15 years of age were those who most often cited this reason. Digestive problems were most frequently mentioned by Inuit in the 0-14 and 25-44 age groups, fewer Inuit aged 15-24 years reported such problems as a justification for their most recent consultation. It is possible that the uneven quality of water in the area led to gastro-enteritis (stomach flu), hence the high incidence of digestive problems. Indeed, in Nunavik, drinking water underwent a number of operations. Hygienic control was not always exercised on tanker pipes and residential water tanks were not cleaned regularly and rarely inspected. Respiratory problems were mentioned more specifically by Inuit aged between 15 and 24 years and over 45 ; as only a few Inuit in the 0-14 age group cited them as the reason for their most recent consultation.

When asked the question « How long have you been experiencing the problem which prompted you to consult a professional », nearly seven Inuit out of ten answered that the problem had inconvenienced them for less than a month, whereas in southern Québec the problem had prevailed for over a year. Lastly, the proportion of Inuit indicating that their most recent consultation had taken place in the village dispensary matched that of Quebecers having mentioned either doctor's office or medical centre.

Several conclusions were drawn from the analysis of patterns of medication use, the second aspect covered in this chapter. Both Inuit and Quebecers mentioned that the medications they most frequently used two days prior to the survey were analgesics. Although vitamins ranked second in both Nunavik and southern Québec, they were mentioned by three times as many Quebecers as Inuit. Lastly, as observed among the Cree, traditional remedies seemed to have disappeared from the Inuit medicine chest. The coexistence of western and traditional schools of medical thought, a phenomenon increasingly referred to as the « nativization of medicine », was neither well established nor appeared to be emerging.

Lastly, Inuit, under 15 years of age, more frequently sought the advice of professionals and also consumed more medications. In general, fewer Inuit (26 %) than Quebecers (45 %) used medications two days prior to the survey. Whereas twice as many Inuit as Quebecers in the 0-14 age group used at least one medication, twice as many older Quebecers as Inuit of the same age group admitted to taking one medication. These results were contrary to expectations : young Inuit indeed appeared to have the same pattern of medication use as older Quebecers, whereas older Inuit (yet younger than Quebecers) exhibited habits equivalent to those of young Quebecers.

## 13.5 FUTURE RESEARCH

For the purposes of subsequent research, it would be interesting to examine certain situations specific to the Inuit such as emergency medical evacuation by air, language problems between health and social service professionals and those calling upon their help, as well as the consequences of rising to the challenge of cultural barriers. Lastly, thorough inquiries and analyses concerning compliance in the matter of medication use and related areas would provide valuable insight into the actual consumption in the Inuit population.

# CONCLUSION AND RECOMMENDED COURSES OF ACTION RELATED TO CONSEQUENCES OF HEALTH STATUS

## (PART III)

The Inuit population was found to be relatively young which no doubt explained the low incidence of disabilities. The latter were, however, expected to increase gradually owing to factors such as changes in lifestyle, the growing number of accidents, and the appearance of new diseases with a considerable impact upon quality of life, namely diabetes, obesity, hypertension and arteriosclerosis. Given the gradual aging of the population and the persistence of certain residual effects of serious childhood diseases -- meningitis, for example -- exposure to the challenge of disease appeared more prevalent among the elderly and the very young.

The loss of individual autonomy was altogether new to Inuit society and was expected to result in significant alterations to the traditional age pyramid in coming years. The advent and development of health care services had already made it possible to extend a lifeline to any number of individuals suffering from severe physical, mental and intellectual disabilities. Considerable work remained to be done, however, on changing people's attitudes, promoting greater acceptance, and establishing new structures and support services adapted to the physical, social and cultural milieus. Care had also to be exercised to respect and nurture the traditional sense of community spirit and to keep people in their own surroundings, as opposed to moving them to distant, well equipped but impersonal institutions.

## Consequences of Health Status

The results in the section on the use of health and social services revealed that approximately one Inuit in six had consulted a health care and social service professional during the two weeks prior to the survey. This was a lower proportion than that for individuals elsewhere in the province where the figure stood at one in five. Nearly one Inuit in three reported having consulted more than one health care and social service professional. As expected, Inuit women made the greatest number of visits ; Inuit men made less visits than Quebecers but more than the Cree. Once again, the fact that women generally accompanied their children on medical visits could mean that we have overestimated their use of available services, if only because they had more opportunities to meet with health care professionals. This word of caution would indeed appear all the more justified in that near two in five Inuit who reported having consulted a health care professional were children under the age of 15. Those individuals who consulted the least were men and women between the ages of 15 and 24 years.

More than one Inuit in two having consulted during the two weeks immediately preceding the survey reported having seen a nurse, while more than two in five reported having seen a general practitioner or dentist. One Inuit in five had consulted *aanniasiurtiapik* and social workers. Nurses stationed in Nunavik performed a role similar to that of a general

practitioner. Whether in Nunavik or elsewhere in Québec, a similar proportion of individuals visited dentists/denturologists.

Half of all dental patients were children under 15 years of age. Patients seen by nurses varied more according to age, but once again children from 0 to 14 years of age accounted for the third (30 %) of their practice. Older Inuit tended to consult general practitioners and *aanniasiurtiapik*.

Prevention, as well as digestive and respiratory problems constituted the main reasons for the last medical visit. As already mentioned, it is possible that the uneven quality of water in Nunavik led to digestive problems and gastroenteritis.

Nearly seven out of ten Inuit reported that the health problem having given rise to their most recent visit had been troubling them for a month or less, while for Quebecers, the cause had been troubling them for more than a year. The Inuit reported going to the village dispensary for their most recent visit just as often as Quebecers reported going to a private doctor's office or medical clinic.

On the subject of taking medication, there were similarities between the Inuit and Quebecers in that both groups claimed the medication they took most often during the two days immediately preceding the survey was an analgesic. While vitamins were, in both Nunavik and Québec, the second most frequent form of medication, almost three times more Quebecers reported having taken vitamins. As had been observed among the Cree, traditional remedies had all but disappeared from the Inuit medicine chest. The coexistence of western and traditional medicine, known as the « nativization » of medicine, did not appear to be an emerging phenomenon in Inuit society.

As the Inuit who visited health care professionals were mostly youths under 15 years of age, medication intake was also high in this age group. Generally speaking, fewer Inuit than Quebecers took medication during the two days immediately preceding the survey (26 % of Inuit vs 45 % of Quebecers). Further, while twice as many Inuit than Quebecers 14 years of age and under took at least one kind of medication, twice as many Québec seniors than Inuit elders reported taking at least one form of medication. These results were contrary to what might have been expected : young Inuit took medication at a rate similar to Québec seniors, whereas Inuit elders (generally younger than their Québec counterparts) took medication in quantities comparable to that of Québec youth.

In subsequent research, it would be important to study various situations peculiar to the Inuit such as the challenges involved in bridging cultural barriers, aerial evacuation for medical emergencies or specialized care, as well as communications problems between health care and social service professionals on the one hand, and the users of such services on the other.

Further, more in-depth polling and analyses would be required to more accurately ascertain compliance with medication prescribed and the true extent of use of medication by the Inuit population.

# APPENDIX 1

## ADDITIONAL TABLES

# TABLE A-9.1

## Prevalence of health problems in the previous two weeks, by age and sex (%) [Inuit, 1992]

| HEALTH PROBLEMS | 0-14 YEARS | | | | | | 15-24 YEARS | | | | | | 25-44 YEARS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Hearing problems | 8.7 | 132 | 9.6 | 129 | 9.1 | 261 | 20.6 | 162 | 8.9 | 69 | 14.8 | 231 | 8.6 | 78 | 11.4 | 92 | 9.9 | 170 |
| Respiratory problems | 9.0 | 136 | 6.1 | 82 | 7.6 | 218 | 2.7 | 21 | 6.8 | 53 | 4.7 | 74 | 4.3 | 39 | 7.9 | 64 | 6.0 | 103 |
| Headaches | 1.2 | 19 | 2.0 | 26 | 1.6 | 45 | 4.4 | 34 | 12.4 | 97 | 8.4 | 131 | 7.9 | 72 | 17.7 | 142 | 12.5 | 214 |
| Mental problems | 0 | 0 | 2.2 | 30 | 1.1 | 30 | 1.2 | 10 | 9.7 | 76 | 5.4 | 86 | 5.0 | 46 | 19.9 | 160 | 12.0 | 206 |
| Allergies | 4.0 | 61 | 4.0 | 53 | 4.0 | 114 | 3.1 | 24 | 6.1 | 47 | 4.6 | 71 | 4.8 | 43 | 11.6 | 93 | 8.0 | 136 |
| Hypertension | 0 | 0 | 0 | 0 | 0 | 0 | 3.6 | 28 | 10.6 | 83 | 7.1 | 111 | 5.0 | 46 | 9.6 | 77 | 7.2 | 123 |
| Skin allergies/infections | 4.7 | 71 | 4.4 | 59 | 4.5 | 130 | 1.8 | 14 | 3.8 | 30 | 2.8 | 44 | 3.3 | 30 | 7.2 | 58 | 5.2 | 88 |
| Back problems | 0 | 0 | 0 | 0 | 0 | 0 | 3.1 | 24 | 0.8 | 6 | 1.9 | 30 | 7.6 | 69 | 5.4 | 43 | 6.6 | 112 |
| Arthritis and rheumatism | 1.1 | 17 | 0 | 0 | 0.6 | 17 | 1.3 | 10 | 0 | 0 | 0.6 | 10 | 5.3 | 48 | 6.0 | 48 | 5.7 | 96 |
| Diabetes | 0.2 | 3 | 0.4 | 6 | 0.3 | 9 | 1.1 | 9 | 9.5 | 75 | 5.3 | 84 | 1.7 | 16 | 8.3 | 67 | 4.8 | 83 |
| Bone and joint problems | 2.0 | 30 | 0 | 0 | 1.1 | 30 | 2.5 | 19 | 1.9 | 15 | 2.2 | 34 | 4.4 | 40 | 3.7 | 30 | 4.1 | 70 |
| Digestive problems | 1.7 | 25 | 1.7 | 22 | 1.7 | 47 | 0.5 | 4 | 2.1 | 16 | 1.3 | 20 | 4.4 | 40 | 5.8 | 46 | 5.0 | 86 |
| Anemia | 2.1 | 32 | 1.4 | 19 | 1.8 | 51 | 0 | 0 | 4.5 | 35 | 2.3 | 35 | 0.7 | 6 | 4.3 | 34 | 2.4 | 41 |
| Thyroid problems | 1.7 | 26 | 2.1 | 29 | 1.9 | 55 | 1.0 | 8 | 4.4 | 35 | 2.7 | 43 | 1.1 | 10 | 2.7 | 22 | 1.8 | 32 |
| Cardiovascular problems | 0 | 0 | 1.3 | 18 | 0.6 | 18 | 1.9 | 15 | 1.2 | 9 | 1.5 | 24 | 0.5 | 4 | 2.0 | 16 | 1.2 | 20 |
| Urinary problems | 0.3 | 4 | 0.3 | 4 | 0.3 | 8 | 0.7 | 6 | 1.3 | 10 | 1.0 | 16 | 0.5 | 4 | 3.9 | 31 | 2.1 | 35 |

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| HEALTH PROBLEMS | 0-14 YEARS | | | | | | 15-24 YEARS | | | | | | 25-44 YEARS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Stomach or duodenal ulcers | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 5 | 0 | 0 | 0.3 | 5 | 3.1 | 28 | 1.2 | 10 | 2.2 | 38 |
| Epilepsy | 0.7 | 10 | 1.1 | 14 | 0.9 | 24 | 0.6 | 5 | 1.1 | 9 | 0.9 | 14 | 1.8 | 16 | 1.9 | 15 | 1.8 | 31 |
| Incapacity or handicap due to obesity | 0.5 | 7 | 0.4 | 6 | 0.5 | 13 | 0 | 0 | 0.8 | 6 | 0.4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mental handicap | 0.3 | 4 | 0.3 | 4 | 0.3 | 8 | 0 | 0 | 1.4 | 11 | 0.7 | 11 | 1.2 | 11 | 1.9 | 15 | 1.5 | 26 |
| Cerebral palsy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 6 | 0.4 | 6 | 0.5 | 4 | 0.5 | 4 | 0.5 | 8 |
| Cancer | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 6 | 0 | 0 | 0.4 | 6 | 0.5 | 5 | 0 | 0 | 0.3 | 5 |
| Paralysis due to accident or stroke | 0.3 | 4 | 0 | 0 | 0.1 | 4 | 0.6 | 5 | 0 | 0 | 0.3 | 5 | 1.5 | 13 | 0.7 | 6 | 1.1 | 19 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 4 | 0 | 0 | 0.3 | 4 | 1.5 | 14 | 1.7 | 14 | 1.6 | 28 |

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| HEALTH PROBLEMS | 45 YEARS + | | | | | | TOTAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Hearing problems | 30.9 | 142 | 15.6 | 74 | 23.1 | 216 | 14.0 | 515 | 10.7 | 364 | 12.4 | 879 |
| Respiratory problems | 15.9 | 73 | 23.5 | 111 | 19.8 | 184 | 7.4 | 270 | 9.1 | 310 | 8.2 | 580 |
| Headaches | 8.4 | 39 | 24.2 | 114 | 16.4 | 153 | 4.5 | 163 | 11.1 | 379 | 7.7 | 542 |
| Mental problems | 6.3 | 29 | 34.6 | 163 | 20.6 | 192 | 2.3 | 84 | 12.6 | 429 | 7.3 | 513 |
| Allergies | 2.4 | 11 | 9.5 | 45 | 6.0 | 56 | 3.8 | 140 | 7.0 | 239 | 5.3 | 379 |
| Hypertension | 11.9 | 55 | 16.2 | 77 | 14.1 | 132 | 3.5 | 129 | 6.9 | 237 | 5.2 | 366 |
| Skin allergies/infections | 6.3 | 29 | 9.3 | 44 | 7.8 | 73 | 3.9 | 144 | 5.6 | 190 | 4.7 | 334 |
| Back problems | 14.0 | 64 | 22.7 | 107 | 18.4 | 171 | 4.3 | 158 | 4.6 | 157 | 4.5 | 315 |
| Arthritis and rheumatism | 9.2 | 42 | 24.4 | 115 | 16.9 | 157 | 3.2 | 118 | 4.8 | 164 | 4.0 | 282 |
| Diabetes | 5.2 | 24 | 11.7 | 55 | 8.5 | 79 | 1.4 | 51 | 5.9 | 202 | 3.6 | 253 |
| Bone and joint problems | 6.2 | 29 | 17.3 | 81 | 11.8 | 110 | 3.2 | 118 | 3.7 | 126 | 3.5 | 244 |
| Digestive problems | 4.2 | 19 | 14.1 | 67 | 9.2 | 86 | 2.4 | 88 | 4.5 | 152 | 3.4 | 240 |
| Anemia | 7.8 | 36 | 8.3 | 39 | 8.1 | 75 | 2.0 | 75 | 3.7 | 128 | 2.9 | 203 |
| Thyroid problems | 0 | 0 | 4.0 | 19 | 2.0 | 19 | 1.2 | 43 | 3.1 | 104 | 2.1 | 147 |
| Cardiovascular problems | 7.2 | 33 | 8.4 | 39 | 7.8 | 72 | 1.4 | 52 | 2.4 | 82 | 1.9 | 134 |
| Urinary problems | 5.5 | 26 | 7.0 | 33 | 6.3 | 59 | 1.1 | 40 | 2.3 | 79 | 1.7 | 119 |

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| HEALTH PROBLEMS | 45 YEARS + | | | | | | TOTAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MALES | | FEMALES | | TOTAL | | MALES | | FEMALES | | TOTAL | |
| | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep | % | Ep |
| Stomach or duodenal ulcers | 6.8 | 31 | 7.0 | 33 | 6.9 | 64 | 1.8 | 64 | 1.3 | 43 | 1.5 | 107 |
| Epilepsy | 0 | 0 | 1.1 | 5 | 0.6 | 5 | 0.9 | 31 | 1.3 | 43 | 1.1 | 74 |
| Incapacity or handicap due to obesity | 4.0 | 19 | 4.7 | 22 | 4.4 | 41 | 0.7 | 26 | 1.0 | 34 | 0.9 | 60 |
| Mental handicap | 0.6 | 3 | 3.5 | 17 | 2.1 | 20 | 0.5 | 18 | 1.4 | 46 | 0.9 | 64 |
| Cerebral palsy | 0.9 | 4 | 6.2 | 29 | 3.6 | 33 | 0.2 | 8 | 1.2 | 39 | 0.7 | 47 |
| Cancer | 2.6 | 12 | 4.0 | 19 | 3.3 | 31 | 0.6 | 23 | 0.6 | 19 | 0.6 | 42 |
| Paralysis due to accident or stroke | 0.9 | 4 | 0.8 | 4 | 0.8 | 8 | 0.7 | 26 | 0.3 | 10 | 0.5 | 36 |
| Other | 1.6 | 7 | 0 | 0 | 0.8 | 7 | 0.7 | 25 | 0.4 | 14 | 0.6 | 39 |

# TABLE A-9.2

## Scores of the comprehensive health index standardized by age and sex, in Cree population (1991) [Inuit, 1992]

| | RATING VALUE | Ep | 1-P | STAND.-ERR. | C.V. | CONFIDENCE INTERVAL | |
|---|---|---|---|---|---|---|---|
| | | | | | | LOWER | UPPER |
| **Population** | 0.4688 | 1,970 | 0.5312 | 0.0092 | 1.96 | 0.4451 | 0.4925 |
| **Males** | 0.4216 | 999 | 0.5784 | 0.0112 | 2.66 | 0.3927 | 0.4505 |
| **Females** | 0.5143 | 971 | 0.4857 | 0.0113 | 2.20 | 0.4851 | 0.5435 |
| 0-14 years | 0.3559 | 711 | 0.6441 | 0.0126 | 3.55 | 0.3234 | 0.3884 |
| 15-24 years | 0.3542 | 481 | 0.6458 | 0.0147 | 4.15 | 0.3164 | 0.3920 |
| 25-44 years | 0.4403 | 490 | 0.5597 | 0.0146 | 3.31 | 0.4028 | 0.4778 |
| 45 years + | 0.6422 | 288 | 0.3578 | 0.0182 | 2.84 | 0.5953 | 0.6891 |
| **Males** | | | | | | | |
| 0-14 years | 0.3658 | 365 | 0.6342 | 0.0165 | 4.50 | 0.3234 | 0.4082 |
| 15-24 years | 0.3236 | 241 | 0.6764 | 0.0197 | 6.09 | 0.2729 | 0.3743 |
| 25-44 years | 0.3801 | 254 | 0.6199 | 0.0192 | 5.06 | 0.3305 | 0.4297 |
| 45 years + | 0.5736 | 139 | 0.4264 | 0.0253 | 4.42 | 0.5083 | 0.6389 |
| **Females** | | | | | | | |
| 0-14 years | 0.3454 | 346 | 0.6546 | 0.0168 | 4.87 | 0.3021 | 0.3887 |
| 15-24 years | 0.3855 | 240 | 0.6145 | 0.0197 | 5.12 | 0.3347 | 0.4363 |
| 25-44 years | 0.4994 | 236 | 0.5006 | 0.0199 | 3.98 | 0.4482 | 0.5506 |
| 45 years + | 0.7013 | 149 | 0.2987 | 0.0245 | 3.50 | 0.6381 | 0.7645 |

# TABLE A-9.3

## Scores of the comprehensive health index standardized by age and sex, in Inuit population [Inuit, 1992]

| | RATING VALUE | Ep | 1-P | STAND.-ERR. | C.V. | CONFIDENCE INTERVAL | |
|---|---|---|---|---|---|---|---|
| | | | | | | LOWER | UPPER |
| **Population** | 0.5218 | 1,564 | 0.4782 | 0.0103 | 1.98 | 0.4952 | 0.5484 |
| **Males** | 0.4752 | 798 | 0.5248 | 0.0126 | 2.64 | 0.4428 | 0.5076 |
| **Females** | 0.5668 | 766 | 0.4332 | 0.0127 | 2.25 | 0.5340 | 0.5996 |
| 0-14 years | 0.3513 | 679 | 0.6487 | 0.0133 | 3.78 | 0.3171 | 0.3855 |
| 15-24 years | 0.4404 | 327 | 0.5596 | 0.0176 | 3.99 | 0.3952 | 0.4856 |
| 25-44 years | 0.5168 | 353 | 0.4832 | 0.0170 | 3.29 | 0.4730 | 0.5606 |
| 45 years + | 0.6908 | 205 | 0.3092 | 0.0214 | 3.10 | 0.6356 | 0.7460 |
| **Males** | | | | | | | |
| 0-14 years | 0.3535 | 359 | 0.6465 | 0.0169 | 4.78 | 0.3100 | 0.3970 |
| 15-24 years | 0.4008 | 159 | 0.5992 | 0.0240 | 6.00 | 0.3389 | 0.4627 |
| 25-44 years | 0.4661 | 180 | 0.5339 | 0.0227 | 4.87 | 0.4076 | 0.5246 |
| 45 years + | 0.6245 | 100 | 0.3755 | 0.0298 | 4.77 | 0.5478 | 0.7012 |
| **Females** | | | | | | | |
| 0-14 years | 0.3490 | 320 | 0.6510 | 0.0177 | 5.07 | 0.3034 | 0.3946 |
| 15-24 years | 0.4809 | 168 | 0.5191 | 0.0234 | 4.87 | 0.4205 | 0.5413 |
| 25-44 years | 0.5665 | 173 | 0.4335 | 0.0231 | 4.08 | 0.5069 | 0.6261 |
| 45 years + | 0.7480 | 105 | 0.2520 | 0.0291 | 3.89 | 0.6730 | 0.8230 |

## TABLE A-9.4

**Scores of the comprehensive health index standardized by age and sex, in Québec population (SQS 87) [Inuit, 1992]**

| | RATING VALUE | Ep | 1-P | STAND.-ERR. | C.V. | CONFIDENCE INTERVAL | |
|---|---|---|---|---|---|---|---|
| | | | | | | LOWER | UPPER |
| **Population** | 0.5080 | 31,808 | 0.492 | 0.0023 | 0.45 | 0.5021 | 0.5139 |
| **Males** | 0.4790 | 15,758 | 0.5210 | 0.0028 | 0.59 | 0.4718 | 0.4862 |
| **Females** | 0.5370 | 16,050 | 0.4630 | 0.0028 | 0.52 | 0.5298 | 0.5442 |
| 0-14 years | 0.4020 | 7,308 | 0.5980 | 0.0037 | 0.93 | 0.3924 | 0.4116 |
| 15-24 years | 0.4500 | 4,976 | 0.5500 | 0.0044 | 0.98 | 0.4387 | 0.4613 |
| 25-44 years | 0.5040 | 10,680 | 0.4960 | 0.0032 | 0.64 | 0.4957 | 0.5123 |
| 45 years + | 0.6200 | 8,844 | 0.38 | 0.0035 | 0.56 | 0.6111 | 0.6289 |
| **Males** | | | | | | | |
| 0-14 years | 0.4100 | 3,798 | 0.5900 | 0.0050 | 1.21 | 0.3972 | 0.4228 |
| 15-24 years | 0.4170 | 2,514 | 0.5830 | 0.0060 | 1.43 | 0.4016 | 0.4324 |
| 25-44 years | 0.4680 | 5,265 | 0.5320 | 0.0043 | 0.92 | 0.4569 | 0.4791 |
| 45 years + | 0.5830 | 4,181 | 0.417 | 0.0047 | 0.81 | 0.5708 | 0.5952 |
| **Females** | | | | | | | |
| 0-14 years | 0.3930 | 3,510 | 0.6070 | 0.0051 | 1.31 | 0.3798 | 0.4062 |
| 15-24 years | 0.4830 | 2,462 | 0.5170 | 0.0060 | 1.25 | 0.4674 | 0.4986 |
| 25-44 years | 0.5390 | 5,415 | 0.4610 | 0.0042 | 0.79 | 0.5281 | 0.5499 |
| 45 years + | 0.6520 | 4,663 | 0.3480 | 0.0045 | 0.69 | 0.6403 | 0.6637 |

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