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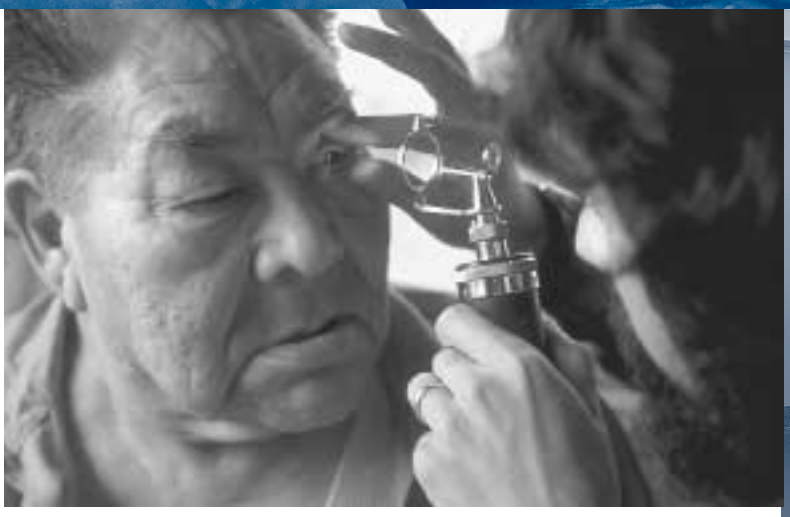
Unintentional and Intentional Injury Profile for Aboriginal People in Canada



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Executive Summary

Introduction

Injuries represent a serious public health problem in Canada in terms of costs and diminished quality of life. Unintentional injuries, often referred to as accidents, are those for which there is no intent to harm, either from the victim or someone else. Intentional injuries, in contrast, are those which are either self-inflicted or done by someone else (e.g. suicide or assault). Aboriginal people may be at a higher risk of being the victims of injuries due to their often isolated residence, their physical environment, crowded and dilapidated housing conditions, lifestyle and poor social conditions.

The purpose of this document is to present information on injury-related mortality and morbidity in Aboriginal people, to show trends, and to compare injury rates and patterns with those of the total Canadian population. Data are presented first for the total Aboriginal population, and then specifically for First Nations. There is no separate section for the Inuit due to scarcity of data.

Methodology

A literature review was conducted via a Medline and Internet search, and by reviewing documents available from the First Nations and Inuit Health Branch of Health Canada. The following five documents provided the major sources of data and information: *Trends in First Nations Mortality 1979-1993*; *Analysis of Status Indians in British Columbia 1991-1998*; *Saskatchewan Registered Indian Population: 1998 Vital Statistics*; *Child Injury in Saskatchewan: Injury Hospitalizations and Deaths 1989-1994*; and *Developing an Injury Morbidity and Mortality Profile in the Sioux Lookout Zone: 1992-1995*.

Limitations of the data reported here include different data collection methods and coverage of the various sources, an inconsistent level of detail, and the absence of separate figures for First Nations and Inuit. Further, it was not possible to analyze trends for the latter half of the 1990s because of the lack of data on various types of injuries (other than suicide) for that time period and different expressions of mortality rates.

Injuries in the total Aboriginal population

The Aboriginal population appears to have injury patterns that are similar to those of the total Canadian population but with higher rates.

Aboriginal people are at a higher risk of being victims of motor vehicle accidents (MVAs) due to the greater distances they have to travel for regular activities, their isolation from emergency facilities and their frequent use of riskier vehicles such as all terrain vehicles and snowmobiles, especially in the North.

Aboriginal people are also at a greater risk of drowning because of their proximity to water, especially in Northern climates where the water temperature is low and can produce death from hypothermia. Risks associated with drowning in Aboriginal victims also include the low use of flotation devices, and alcohol use. Data for 1996 indicate that the drowning rate in the Aboriginal population is 6 times higher than the Canadian average. The rate in Aboriginal toddlers, especially in Manitoba, is substantially higher than in their non-Aboriginal counterparts. Falls into water are the leading cause of drowning fatalities in Aboriginal people, followed by boating and then by aquatic activities.

Wood frame house construction, the low presence of smoke detectors, and smoking habits can put Aboriginal people at increased risk of being victimized by fire and flames.

Injuries in First Nations people

Injury is one of the leading causes of death in First Nations people, and is responsible for approximately one quarter of all deaths and over half the Potential Years of Life Lost. Rates of injury death are from 3 to 6 times higher than the Canadian average in some cases, and injury is also among the most common reasons for hospitalization. Although injury rates remain high, they have improved appreciably over time: mortality rates decreased by 37% over the 1989-1993 period. Most of this decrease was in unintentional injuries such as motor vehicle accidents and drowning; intentional injuries such as suicide and homicide have not shown the same downward trend.

The most frequent causes of fatal injury in First Nations people are motor vehicle accidents (including snowmobiles), suicides, and drug poisoning. Motor vehicle accidents tend to be the leading cause of injury death, despite improvements over time. Drowning rates are also far higher than average in some areas, and occur almost entirely among males. Deaths from fire/flames are more common than average, as are falls (which occur primarily in older people).

Suicide accounts for roughly one quarter of all injury deaths, and rates are 3 to 4 times the Canadian average – with far greater differences in some geographic areas, and at particular ages. The highest suicide rates tend to be between the ages of 15 and 24. Unlike most of the unintentional injuries, suicide rates do not seem to be decreasing. Homicide rates in First Nations are also higher than average, with the majority of the victims being younger males. There is little information on problems such as assault and family violence, although these are perceived to be a problem in many communities.

Conclusion

Aboriginal people face many risks of unintentional and intentional injuries. Although there have been some improvements in the rates of injury in the Aboriginal population, they are still high, especially relative to those of the general Canadian population. Injuries account for a large number of premature deaths in First Nations people. Motor vehicle accidents and drug poisoning cause many deaths, while suicide is rampant, and tends to occur at a young age. There is a glimmer of hope, however, with many communities and organizations taking action to prevent injuries and reduce their accompanying burden in the Aboriginal population.

Introduction

Injuries constitute a serious public health problem in Canada. In fact, unintentional injuries alone cost Canadians $8.7 billion or $300 for every citizen in 1995 in terms of the direct costs of treatment (hospital care, physician services, prescription drugs and rehabilitation) as well as the indirect costs to society from lost productivity. On average, each unintentional injury generates $4,000 in direct and indirect costs.[1]

Intentional injuries are also costly. For example, in New Brunswick, the estimated mean total cost per suicide death in 1996 was almost $850,000. This cost includes direct (police investigations and ambulance, hospital, physician, autopsy, and funeral/cremation services) and indirect (potential years of life lost, discounted future earnings) costs.[2] In addition, there are costs from homicide and other acts of violence. Injuries also result in a diminished quality of life from emotional anguish, pain, disability and activity limitations, as well as the grief associated with the death of a loved one from a fatal injury.

Aboriginal people may be at greater risk of injury than the general Canadian population. People who live in the North have a greater risk of frostbite and hypothermia and of suffering a motor vehicle or snowmobile accident due to the greater distance to travel for commodities and services. The hunting lifestyle increases the risk of injuries due to firearms as well as the risk of suicide by these weapons. Overcrowded and dilapidated housing on some reserves increases the risk of injuries in the home and can aggravate stress levels and contribute to family violence. Poor social conditions common in the Aboriginal population tend to be associated with a greater risk of violence and suicide.

The purpose of this document is to present information on injury-related mortality and morbidity in Aboriginal people, to show trends, and to compare injury rates and patterns with those of the total Canadian population. Ideally, a report of this type would present data separately for Inuit and First Nations people. The reality is that at this time, there is very little injury data specific to Inuit. Some information is available on injury in the total Aboriginal population, which would include Inuit, First Nation and Métis people; and there are documents that present data for First Nations alone. Consequently, this report is divided into two main sections: the first discusses the risk factors for injury, and presents data for the total Aboriginal population; the second focuses on injury in First Nations people.

Methodology

Collection of information

A literature review was conducted through a Medline search using the keywords "injury," "Aboriginal and Canada," "Inuit and Canada," "Indian and Canada," "suicide," "violence" and "First Nations." An Internet search was also conducted using the same keywords. Some documents available from the Health Programs Analysis Division of the First Nations and Inuit Health Branch (FNIHB) of Health Canada were reviewed as well.

Major sources of information

The following reports provided the majority of the data and information used in this document:

Trends in First Nations Mortality 1979-1993

This report uses information available from the FNIHB database, which is obtained from FNIHB regional offices and from the Department of Indian Affairs and Northern Development. It examines mortality patterns in First Nations people between the years 1979 and 1993 and presents crude death rates per 100,000 population for various sub-categories of unintentional and intentional injuries. A breakdown by age group, gender and geographic region (other than the Northwest Territories) is presented.

Analysis of Health Statistics for Status Indians in British Columbia 1991-1998

This report is produced by the British Columbia Vital Statistics Agency, which collects data on birth and death registrations of the Status Indian population in the province. The mortality statistics, expressed as age-standardized mortality rates per 10,000 standard population, are compared to the total B.C. population. Summary data by sub-categories of unintentional and intentional injuries, age group and gender are presented for the aggregate period 1991-1998.

Saskatchewan Registered Indian Population: 1998 Vital Statistics

This report contains selected vital statistics of the Saskatchewan Registered Indian population in 1998. Information is presented separately for people living primarily on-reserve, those living off-reserve, and the total. The mortality statistics are expressed as rates per 100,000 with sub-categories of age group and gender.

Child Injury in Saskatchewan: Injury Hospitalizations and Deaths 1989-1994

This report, produced by the Saskatchewan Institute on Prevention of Handicaps, uses data from the Population Health Branch and the Vital Statistics Branch of Saskatchewan Health. It includes all injury-related hospitalizations and deaths among children and youth under 20 years of age in Saskatchewan during the period 1989 to 1994. Data for northern, Treaty Indians, rural and urban population groups are presented and compared. A breakdown by age group and gender is presented. The rates are expressed per 100,000 person-years.

Developing an Injury Morbidity and Mortality Profile in the Sioux Lookout Zone: 1992-1995

This report presents data collected from the treatment of injuries in the emergency department of the Sioux Lookout Zone Hospital (which is a data collection site for the Canadian Hospitals Injury Reporting and Prevention Program) and in the nursing stations of the surrounding communities from July 1992 to March 1995. Mortality statistics were obtained from the medical records department of the hospital. Data are presented for unintentional injuries, assaults and self-inflicted injuries. Rates are expressed per 100,000 population, broken down by age group and sex.

Definitions

Unintentional injuries, commonly referred to as accidents, are injuries for which there is no intent to harm, either by the victim or anyone else. These include motor vehicle accidents (MVAs), drowning, accidental poisonings, accidental falls and fire/flames. Intentional injuries include those that are self-inflicted, most notably suicide, as well as those inflicted by someone else (i.e. homicide, family violence, assaults).

Data limitations

There are limitations to the data and the information reported in this document, which warrant attention. The data collection methods and the population included in the statistics differ among FNIHB regions, and among the different sources summarized here. Some sources include only First Nations people living on-reserve, while others include all First Nations people, regardless of where they live. It is not usually possible to separate out the data for First Nations and Inuit. The level of detail and age categories vary from source to source. Finally, there are variations in how the mortality rates are expressed: data available for the 1979-1993 period were presented as crude rates, while more recent reports have used age-standardized rates. For this reason, it was not possible to extend the trend analysis up to the latter half of the 1990s.

It appears that the pattern of unintentional injuries in the Aboriginal population is fairly similar to the overall pattern in the total Canadian population, with the exception that the rates are significantly higher in Aboriginal people.[3]

Unintentional injuries in all Aboriginal people

Motor vehicle accidents

Aboriginal people are at a higher risk of MVAs due to the greater distance they need to drive to do daily and weekly activities. In addition, the greater distance from an emergency facility when an accident occurs and the heavy use of riskier vehicles like all-terrain vehicles (ATVs) and snowmobiles, especially in the North, also contribute to the higher risk. In a survey conducted by the National Indian & Inuit Community Health Representatives Organization (NIICHRO) from December 1996 to January 1997, 14 of the 18 regionally based Board members who were surveyed identified automobile accidents as significant problems in their regions. In addition, injuries from ATVs and snowmobile accidents were identified as significant problems in some regions. ATVs roll over easily due to their high centre of gravity while snowmobiles may present risks due to their use over unsafe ice conditions, their lower maneuverability and their low visibility on public roads.[3]

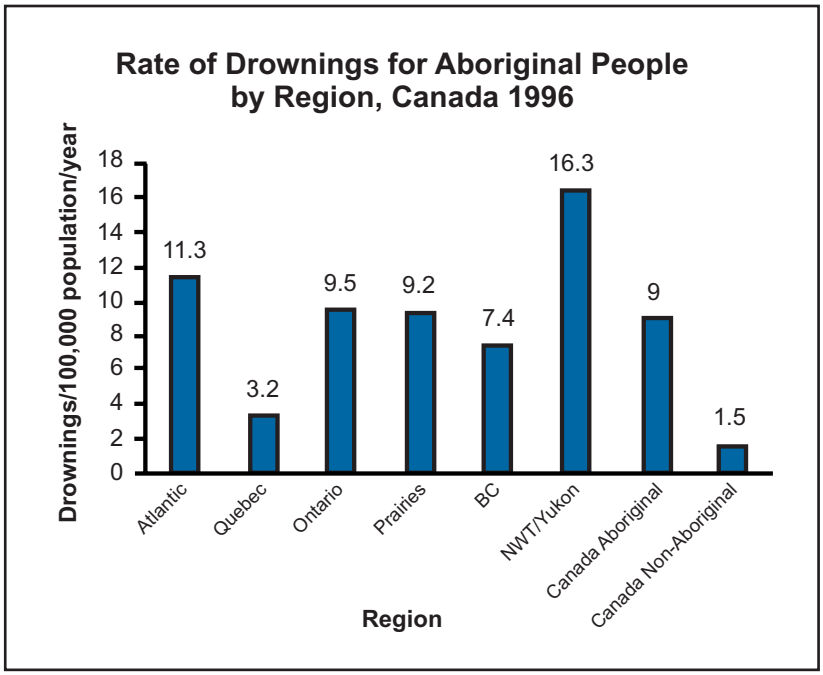
Drowning

Risk Factors

Aboriginal people are at a higher risk of drowning due to the proximity of many communities to rivers and lakes, often with important services (stores, health centres, airstrips) located across a body of water.[3] Safety and lifestyle habits also play a role. For instance, only 6% of Aboriginal drowning victims in 1996 had worn a flotation device. Moreover, about two thirds (64%) of the drowning victims age 15 or older had a blood alcohol level above the legal limit, versus about one quarter (27%) of their non-Aboriginal counterparts.

The risk of drowning is especially high in northern areas because low water temperatures increase the likelihood of hypothermia and consequent death.[4] In addition, northern areas may have less access to swimming lessons and training in lifesaving methods. Drowning rates in Aboriginal people are particularly high in the Northwest Territories, Yukon and Atlantic regions, as shown in Figure 1. Boats, snowmobiles and ice present the greatest risk to adults, while for toddlers, the main risks are boats and falls into open water.

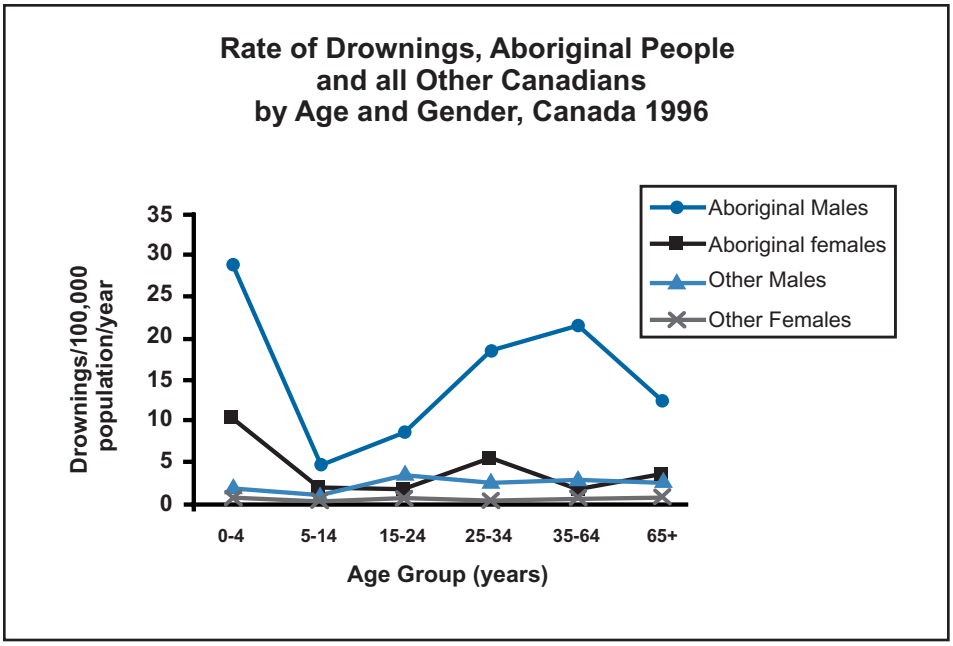
Figure 1



Note: Figures exclude snowmobile and other land and air transport drowning.

Source: The Canadian Red Cross Society & the Canadian Surveillance System forWater-Related Fatalities (1998).[5]

Figure 2



Notes: Drownings include recreational, occupational and daily living drowning but excludes land and air transport drowning. Others include non-Aboriginals and victims of unspecified ethnicity. The age is unknown for 3 victims (including 1 Aboriginal) and the gender is unknown for 1 non-Aboriginal victim 35-64 years old.

Source: The Canadian Red Cross Society & the Canadian Surveillance System for Water-Related Fatalities (1998).[5]

Size of the Problem

Drowning is the second most important cause of injury death in many Aboriginal communities in Canada. In some locations, the number of drownings exceeds the number of road traffic deaths, especially when snowmobile drowning is included. According to the Canadian Surveillance System for Water-Related Fatalities, Aboriginal people had a drowning rate 6 times higher than other Canadians in 1996 (9.0 per 100,000 population versus 1.5).[5] In Manitoba, 77 of the 192 drowning victims between 1991 and 1996 were Aboriginal people, a rate 10 times that of other Manitobans. The gap is even larger for toddlers (under age 5): nationally, Aboriginal toddlers had a drowning rate 15 times higher than others, while in Manitoba their rate was 22 times the provincial average. (See Figure 2 and Table 1.)

Table 1 – Preventable Drowning Rate per 100,000 People in Manitoba: 1991-1996

	Aboriginal Manitobans	All Other Ethnic Origins
Total drownings	17.3	1.9
Victims under 5 years of age	2.9	0.13
Recreational deaths	9.1	1.35
Deaths on lakes & rivers	11.3	1.0
Deaths on ice	1.1	0.13
Alcohol consumption	6.2	0.87

Source: Lifesaving Society, 1998.[6]

Drowning by Type of activity: Aboriginal Pattern Compared to Canadian

The Canadian Red Cross reports that drowning patterns in Aboriginal people are starting to resemble those seen in the general Canadian population, although at higher rates. The leading causes of drowning for both the Aboriginal and total Canadian populations are boating, aquatic activities such as swimming or wading, and falls into open water (see Figure 3).

One way of looking at the differences in drowning patterns between Aboriginal and non-Aboriginal people is to consider the extent to which Aboriginal people are over-represented in certain categories of drowning. This measure is skewed by the fact that the Aboriginal population has a much higher proportion of children than the Canadian one, so we would expect to find somewhat higher proportions in categories – such as falls into water – that happen mainly to children. Nonetheless, it does provide some insight into the differences in causes of drowning for Aboriginal and non-Aboriginal people. The comparison suggests that Aboriginal people are at much greater risk than other Canadians of drowning from snowmobile use, falls into water, aquatic activities and boating. Aboriginal people represent 3% to 5% of the Canadian population, but 26% of all snowmobile drowning, 16% of all drowning from falls into water, 10% of drowning during aquatic activities, and 9% of boating drowning. (Although the majority of these boating accidents occur during recreational boating, an appreciable proportion are due to boating during activities of daily living or subsistence.)

Fire/flames

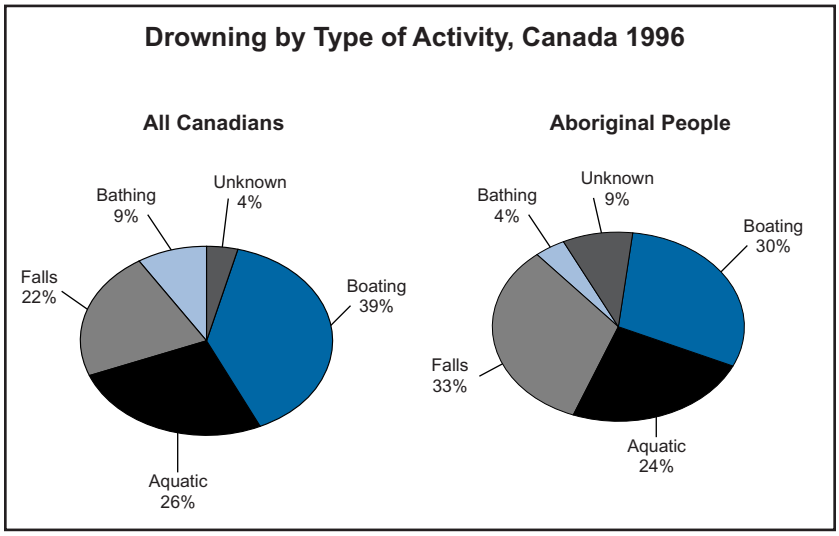
In a survey conducted among NIICHRO Board members in 1996-1997, one third of the respondents indicated that fires were a significant problem in their regions. Aboriginal people are at a greater risk because of their smoking habits, wood frame house construction and the low presence of smoke detectors. Almost one third (31%) of all fire deaths in the Aboriginal population are in children between the ages of 1 and 14, compared to an average of 16% in the total Canadian population, a finding that may be partly explained by the higher proportion of children in the Aboriginal population.[3]

Intentional injuries in all Aboriginal people

Suicide

The Task Force on Suicide in Canada reported in 1994 that Aboriginal communities often have significantly higher suicide rates than those in the general Canadian population.[7] High suicide rates tend to be associated with various community characteristics, including a higher number of occupants per household, more single-parent families, fewer elders, lower

Figure 3



Note: Aquatic activities include swimming, wading and playing in water.

Source: The Canadian Red Cross Society & the Canadian Surveillance System for Water-Related Fatalities (1998).[5]

average income and lower average education.[7] While suicide rates in First Nation communities are known to be high, rates for Inuit may be even higher: data from the Northwest Territories suggest that while Dene people had suicide rates of 29 per 100,000 over the 1986-1996 period, rates among the Inuit were 79 per 100,000 population.[8]

Family violence

In the 1991 Aboriginal Peoples Survey, 39% of respondents reported that family violence was a concern in their community.[9] In the Injury Prevention Survey conducted by NIICHRO in 1996-1997, 13 of the 14 Board members responded that partner abuse is a significant problem in their regions. Over half also identified child physical and sexual abuse and the abuse of elders as a big problem. Almost all the respondents indicated that alcohol is a significant contributor to family violence.[3] A random file review of 935 offenders admitted to a federal institution between June and November 1992 showed that the rate of physical violence against family members among Aboriginal people was double the rate among non-Aboriginal offenders, mainly due to higher rates of perpetration against female partners in the Aboriginal sub-sample. There was no statistically significant difference in the rates of violence against children between Aboriginal and non-Aboriginal offenders.[10]

Dimensions of the Injury Problem

Size of the Problem (All Injury)

Injury is one of the leading causes of death for First Nation populations across the country, and in some instances is the number one killer. Injury rates are far higher in men than in women, making injury the leading cause of death among men in 1993. It is also the leading cause of death for First Nations people under the age of 45.[11] In B.C. First Nations, 28% of deaths over the 1991-1998 period were due to injury, while the comparable proportion for British Columbia as a whole was just 7.6% (see Figure 4). Injury mortality rates for First Nations people are typically far higher than average. In Manitoba, Saskatchewan and British Columbia, First Nations people were approximately 6.5 times more likely to die of injury than the Canadian average (see Figure 5). Similarly, the Canadian Institute of Child Health reports that in the mid-1990s, the injury death rate among First Nation infants was almost 4 times higher than in the total Canadian population (63 versus 17 per 100,000). It was more than 5 times higher in preschoolers (83 versus 15), and more than 3 times higher in teenagers between the ages of 15 and 19 (176 versus 48).[12]

Figure 4

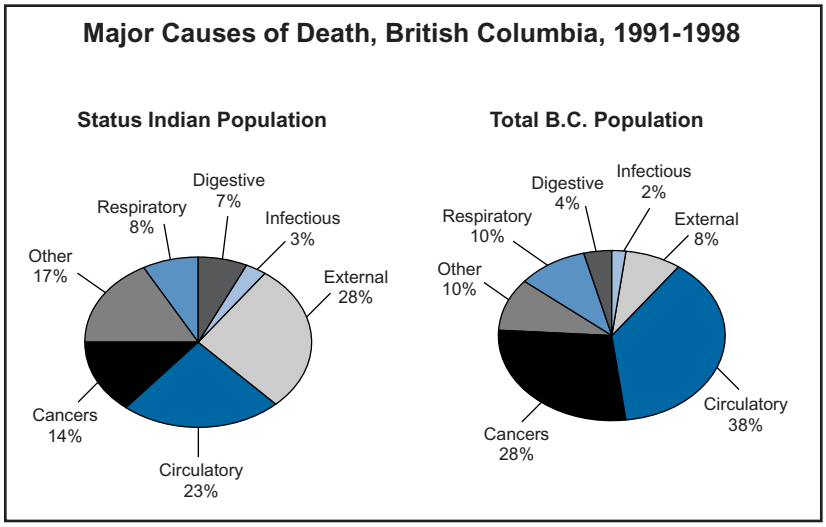
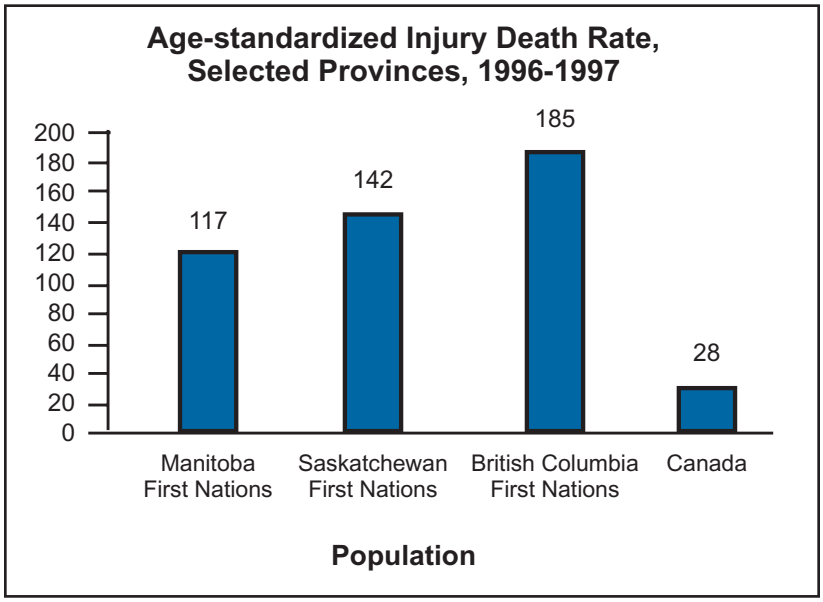


Figure 5



Notes: The rates for First Nations are for 1997 while the rate for Canada is for 1996. Data for the Atlantic and Quebec regions are not shown in the figure because only crude rates were available. Data for the Alberta region were unavailable.

Sources: Manitoba FNIHB Regional Office[14], Saskatchewan FNIHB Regional Office[15], British Columbia Vital Statistics Vital Agency[16], Statistics Canada (1998)[13].

As well as being a leading cause of death, injury tends to kill people at comparatively young ages, making it by far the leading cause of Potential Years of Life Lost (PYLL).* Injuries are responsible for more than half the PYLL in the First Nations population. Figures from the Prairies in 1996-97 suggest that they remove over 7 *times* the PYLL attributable to any other cause of death.[14-16]

For every fatal injury, there are many non-fatal ones. Data for First Nations people in Manitoba and Saskatchewan show that injuries are among the top three reasons for hospitalization, and for visits to physicians. These data also show that First Nations people are over-represented in the injury statistics: in Manitoba, their rates of hospitalization for injury are 3 times the provincial average (34 per 1,000 versus 10 per 1,000), while in Saskatchewan, the highest rates of injury hospitalization are among First Nations children.[14,15,17,18]

Trend Over time

As is the case for the Canadian population in general, injury death rates in First Nations have fallen substantially over time. This applies primarily to unintentional injuries; intentional ones such as suicide and violence have not decreased in the same way. In First Nations people, the crude death rate from injury decreased by 37% between the periods 1979 to 1981 and 1991 to 1993 (from 243 deaths per 100,000 population to 154), with the rate decreasing faster for males than for females. Rates of all type of injury decreased, except for suicide and drug overdose (see Figures 6 and 7).

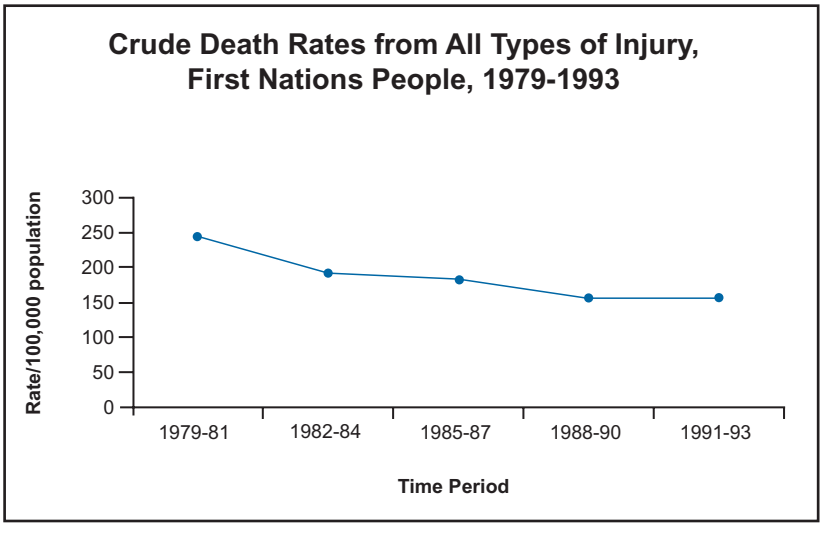
Age-sex Distribution

In both the First Nations and total Canadian populations, mortality rates from injury are far higher among males than among females (see Figure 8).[13-16,19-21] A study in the Sioux Lookout Zone of Ontario found that over the 1992-1995 period, males represented almost 60% of all unintentional injuries, and almost three quarters of the injury *deaths*.[21] Although injury rates are far higher than average in First Nations, the age at which these injuries occur tend to follow the same pattern as seen in the general population, with rates being particularly high among those age 15-24.[10,16,21] Figures from British Columbia show that injuries account for 40% of all the deaths in First Nations children (1-19 years), and 84% of the deaths that occur in those age 20-24 (with the majority of these being males).[12]

Type of Injury

Nationally, for First Nations people between 1991 and 1993, most injury deaths were due to MVAs (rate of 40 per 100,000 population), suicide (38 per 100,000) and accidental drug

Figure 6



Source: Health Canada (1996), using Health Canada in-house statistics[11]

*Potential Years of Life Lost measures the difference between how long a person could have been **expected** to live, and how long a person actually **did**. It is a composite measure of how many people die from a particular cause, and the extent to which those deaths are premature.

overdose (17 per 100,000). More recent figures for British Columbia show a similar picture (see Figure 9).

Unintentional injuries in First Nations people

Motor vehicle accidents

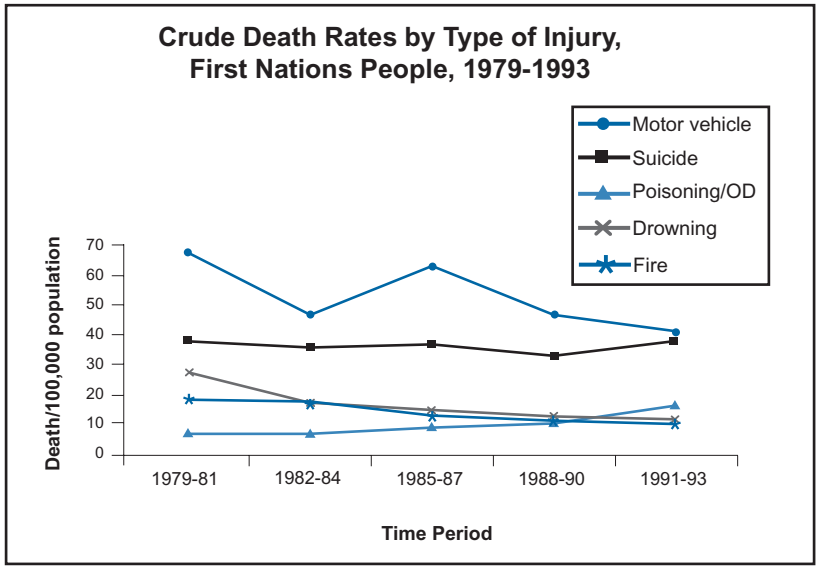
Between the period 1979-1981 and 1991-1993, the crude death rate from MVAs decreased by 39% in First Nations people, to a rate of 40.5 per 100,000 population (see Figure 7). Despite this progress, rates in First Nations people remain far higher than average. For instance, a study in British Columbia over the 1991-1998 period found that age-standardized mortality rates of MVAs were 4 times the provincial average (4.4 per 10,000 versus 1.1).

As illustrated in Figure 9, MVAs are generally the most common type of injury death. This tends to hold true for males in particular: the British Columbia figures show that two thirds of the victims of MVAs were males, and that MVAs are an especially common cause of death for males 25-44 years of age.[16] A study in Sioux Lookout Zone similarly found that males were at greater risk of MVAs than females in most age groups.

There are different types of MVAs. While traffic accidents may be most problematic in some areas, in other regions many of the accidents involve snowmobiles. For instance, in Sioux Lookout Zone between 1992 and 1995, snowmobile accidents represented almost one quarter of all the MVAs.[21] A more recent study in the same area found that snowmobile accidents were the most common type of unintentional injury for males during the winter months.[22-24]

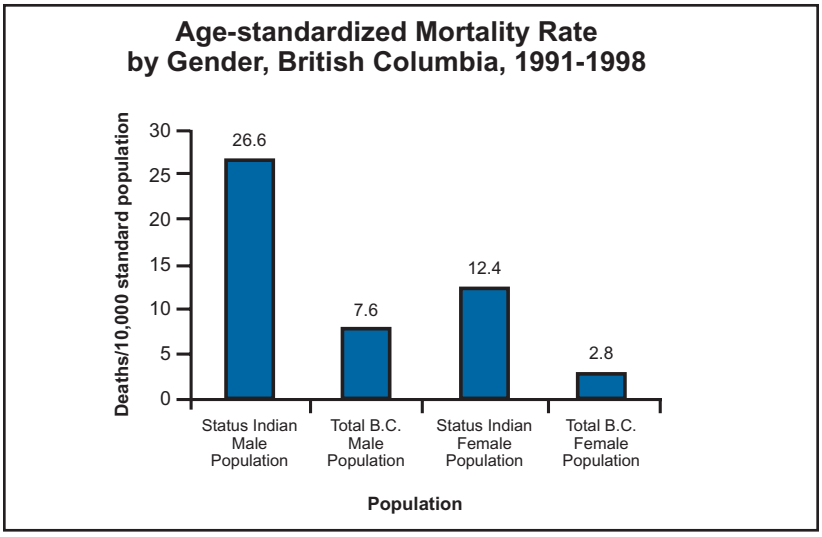
Accidents involving motor vehicles and pedestrians are more common among

Figure 7



Source: Health Canada (1996), using Health Canada in-house statistics[11]

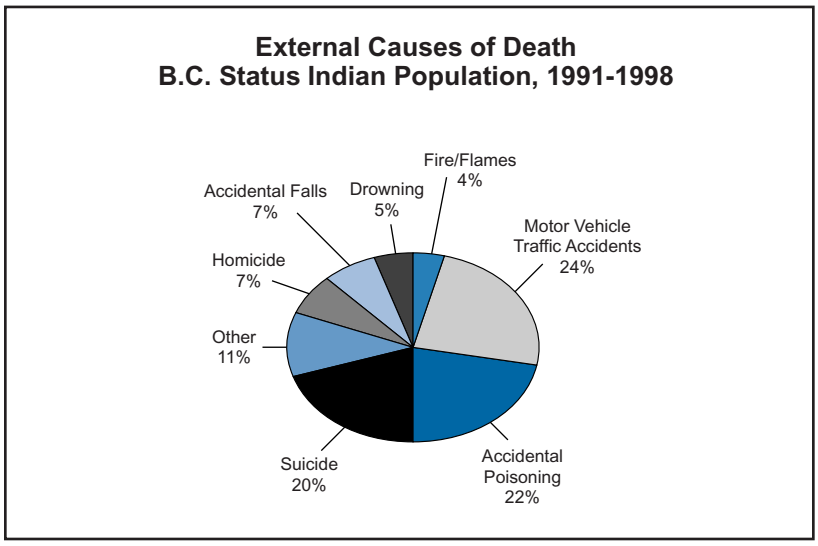
Figure 8



Source: British Columbia Vital Statistics Agency (2000).[16]

children,[18] and some accidents may involve school buses. Between May 1995 and December 1996, four Manitoba children aged 4-9 years died in school bus-related accidents. Three of these deaths occurred in Aboriginal communities. In a December 1996 survey of representatives of local education authorities in 32 First Nations communities in Manitoba, one quarter of the respondents reported that there had been some sort of school bus-related accident in their community, with about half resulting in an injury. A report prepared by IM-PACT suggested that the risk is attributable to travelling over water, icy conditions in winter, flooded roadways in spring, dusty and pot-holed roads in summer, bush areas and animals. Three quarters of these communities have no paved roads. Other risk factors include inconsistent safety procedures, overcrowding on school buses, problematic inspection and maintenance of the vehicles, improper driver training, a tendency to have to back up, the regular practice of crossing busy roadways, and poor snow clearing on waiting areas. Other problematic areas which put First Nations children at risk in Manitoba include inconsistent education of students in safe bus ridership, ignorance of road rules related to school buses (especially by drivers of ATVs and snowmobiles), and inadequate law enforcement to support school bus safety.[25]

Figure 9



Source: British Columbia Vital Statistics Agency (2000).[16]

Drowning

Between the period 1979-1981 and 1991-1993, drowning rates decreased by 56% in First Nations people (see Figure 7), but drowning remained among the most common causes of accidental death. In British Columbia, the age-standardized mortality rate from accidental drowning in Status Indians over the period 1991-1998 was more than 4 times the provincial rate (0.9 per 10,000 standard population compared to 0.2, respectively). Approximately nine out of ten Status Indian drowning victims were male, similar to the eight out of ten in the total B.C population.

Accidental poisoning

In common with many other types of injury, accidental poisoning seems to be more frequent than average in the First Nations population. In British Columbia over the 1991-1998 period, age-standardized mortality rates from accidental poisoning were 4 times higher than for B.C. residents in general (3.8 versus 0.9 per 10,000). Figures from the Sioux Lookout area suggest that over the 1992-1995 period, accidental poisoning was prevalent in children under the age of 4 (441 per 100,000 for boys and 408 per 100,000 for girls). However, the rate for adults in this area was also high, primarily due to high rates of alcohol poisoning.[21]

Unlike most other types of unintentional injury, mortality rates from accidental poisoning actually increased two-fold between the 1979-1981 and 1991-1993 period (see Figure 7). It increased 3.6 times in people aged 65 or older,

2.6 times in 45- to 64-year-olds and 1.8 times in people between the ages of 25 and 44.

Accidental falls

Mortality from falls is strongly related to aging. Between 1979-1981 and 1991-1993, the death rate from falls among people age 25 or older improved.[11] However, there is still reason to believe that death rates from falls are higher than average in First Nations groups: in British Columbia, the age-standardized mortality rate from falls for Status Indians was almost 3 times the provincial average over the 1991-1998 period (2.3 per 10,000 standard population versus 0.8). Among Status Indians, about six in ten (59%) victims were male; the comparable proportion for British Columbia as a whole was five in ten (47%).[16]

Fire/flames

Between the period 1979-1981 and 1991-1993, deaths from fire and flames decreased by 44% (see Figure 7), except in infants where it increased. However, the number of deaths in infants was small.[11] Self-reported information from First Nations shows that in 1997, 25 reserve residents (9 children and 16 adults) died in fires in First Nations communities across the country (see Table 2). In the same year, 45 non-fatal injuries from fire were also reported, an increase over the 14 such injuries reported in 1996.[26]

Despite the downward trend, both mortality and hospitalization figures suggest that First Nations people are at elevated risk from fire. In British Columbia over the period 1991-1998, the age-standardized mortality rate from fire/flames was 0.8 in Status Indians, versus 0.1 for the total B.C. population, a rate that was 8 times higher.[16] Data from Manitoba show a similar picture: in 1996-1997, the hospitalization rate from burns was 0.8 cases per 1,000 population in First Nations

Table 2 – Fire Injuries and Deaths in First Nations Communities, 1997

Province/Territory	No. of Reported Responses*	No. of Reported Fires	Injuries		Deaths	
			Adult	Child	Adult	Child
Newfoundland	0	0	0	0	0	0
New Brunswick	24	25	1	0	0	0
Nova Scotia	14	14	0	0	1	0
Prince Edward Island	0	0	0	0	0	0
Quebec	77	73	0	0	0	0
Ontario	558	190	12	0	6	2
Manitoba	258	233	6	0	2	2
Saskatchewan	51	51	7	3	1	3
Alberta**	143	143	7	3	3	1
British Columbia	48	39	5	1	3	1
Yukon	3	3	0	0	0	0
Total	**1,176**	**771**	**38**	**7**	**16**	**9**

* A response is where a fire department is called out to an incident that may or may not involve a fire or any financial loss. The level of detail of reporting varies. Some First Nations report all responses including false alarms, vehicle accidents, grass fires, etc. while others report only fires involving financial loss.

** Fire statistics for Alberta have been supplied by the Fire Commissioner's Office, Alberta Labour. They exclude grass, brush and forest fires.

Source: 1997 Fire Losses in First Nation Communities. Data extracted from 1997 Fire Loss Report, INAC.[26]

people, compared to 0.2 for all of Manitoba, a rate that was 4 times higher.[14] Further, according to recent IM-PACT research, First Nations children in Manitoba are 5 times more likely to die from house fires than their non-Aboriginal counterparts.[27] A study involving pediatric (children 16 years of age or less) burn patients admitted to a large, tertiary care hospital in Winnipeg over a 32-month period found that North American Indian families were disproportionately admitted. The latter accounted for almost half (48%) of admissions, even though the geographic area has less than 15% North American Indians.[28]

Intentional injuries in First Nations people

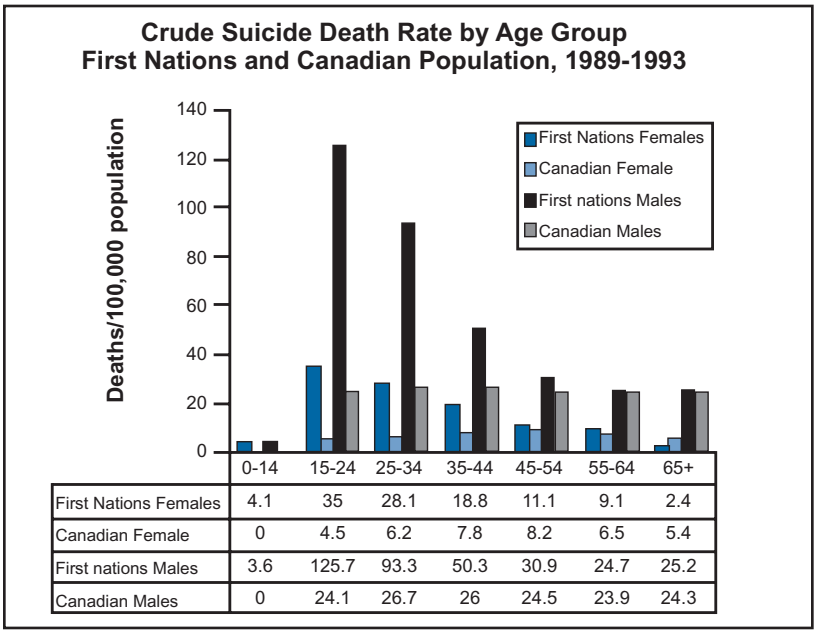
Suicide

Suicide accounts for up to a quarter of all injury deaths in First Nations people. In the period 1991-1993, 20.7% of deaths in females and 26.3% in males were due to suicide. The suicide rate in First Nations people was stable over the period 1979-1981 to 1991-1993 (see Figure 7), except in 1- to 14-year-olds where it increased by 45%*. The majority of these suicides occurred in 15- to 24-year-olds, followed by 25- to 34-year-olds (see Figure 10).

Suicides may occur in "clusters" in specific areas or time periods, and rates in some areas are extremely high. For instance, in the Sioux Lookout Zone in the period 1992-1995, the suicide rate in First Nations males 10-19 years of age was over 50 times higher than in their Canadian counterparts. The difference between First Nations rates and those of other Canadians is less pronounced in other areas, but still large: across Canada during the 1989-1993 period, First Nations males had a rate that was 2.6 times higher than Canadian males, while First Nations females had a rate 4 times higher than Canadian females. The gap was largest among youth, and diminished at older ages: at ages 15-24, the suicide rate in First Nations women was almost 8 times that of the same age group for all of Canada, while for men it was 5 times higher. In contrast, First Nations people over 65 years of age had a lower suicide rate than other Canadian seniors. In both the First Nation and general Canadian populations, rates of *completed* suicide were typically 3 times higher in males than in females;[11] however, it is usually the case that far more women than men *attempt* suicide.

*This figure is based on small absolute numbers, and should be interpreted with caution.

Figure 10



	0-14	15-24	25-34	35-44	45-54	55-64	65+
First Nations Females	4.1	35	28.1	18.8	11.1	9.1	2.4
Canadian Female	0	4.5	6.2	7.8	8.2	6.5	5.4
First nations Males	3.6	125.7	93.3	50.3	30.9	24.7	25.2
Canadian Males	0	24.1	26.7	26	24.5	23.9	24.3

Source: Health Canada (1996), using Health Canada in-house statistics.[11]

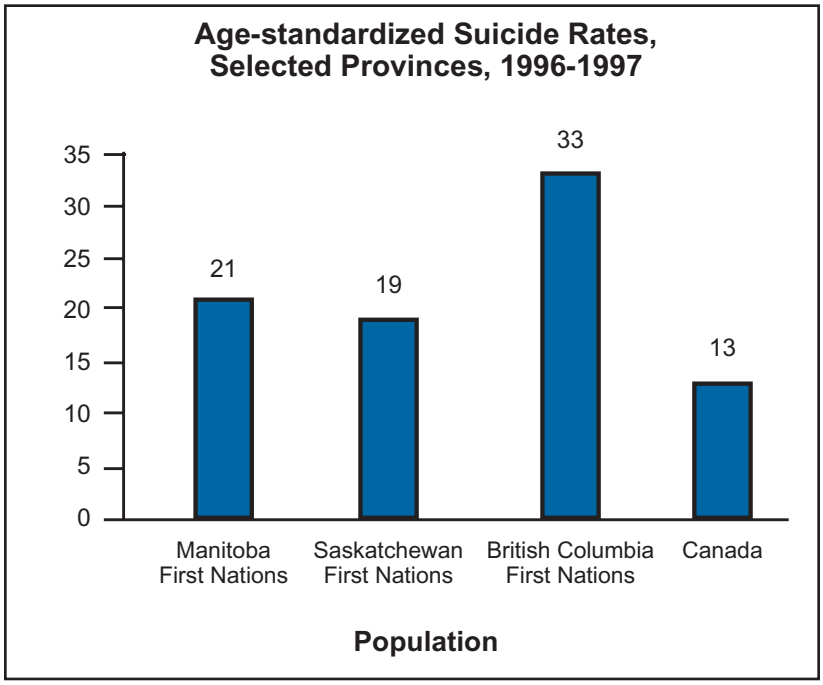
In the period 1991-1993, the most common method of suicide was hanging, accounting for almost half of the suicide deaths in First Nations males and females, as shown in Figure 12. The second most commonly used method was firearms in males (35.3%) and drug overdose in females (30.0%).[11] Almost all suicides of youth under 14 years of age were by hanging, and it was also the most common method in 15- to 44-year-olds. At older ages, drug overdoses and firearms were more common methods.

More recent data from selected provinces suggest that this general pattern of high proportions of suicide in youth, over-representation of males, and hanging as the most common method of suicide, still hold true at present.[14,15,19,20,29]

Homicide

In the period 1989-1993, homicide was the third most common cause of injury death in First Nations people in the Atlantic, Manitoba and Saskatchewan regions.[11] In the period 1991-1998 in B.C. Status Indians, the age-standardized mortality rate for homicide was 4.7 times higher than the rate in the total B.C. population (1.2 per 10,000 standard population versus 0.3, respectively). In both the First

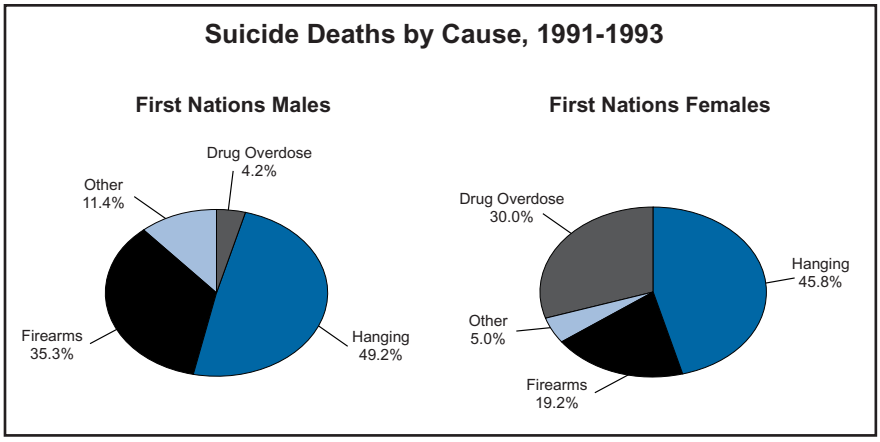
Figure 11



Notes: The rates for First Nations are for 1997 while the rate for Canada is for 1996. Data for the Atlantic and Quebec regions are not shown in the figure because only crude rates were available. Suicide data for the Alberta region were unavailable.

Sources: Manitoba FNIHB Regional Office[14], Saskatchewan Regional Office[15], British Columbia Vital Statistics Agency[16], Statistics Canada (1998)[13].

Figure 12



Source: Health Canada (1996), using Health Canada in-house statistics.[11]

Nations and general Canadian populations, almost two thirds of homicide victims were males.[16]

Assault

There is little information on assault, but what there is suggests that people age 15-24 and males are at higher risk. For instance, assault was the leading cause of injury hospitalization for Saskatchewan Northern and Treaty Indian males age 15-19 over the 1989-1994 period.[18] In the Sioux Lookout Zone over the 1992-1995 period, assaults represented 15% of all injury morbidity, with males being at higher risk in almost all age groups. Rates were highest for people age 20-24 (3,721 per 100,000 in males and 2,211 in females). In about one third (32%) of the assaults, a weapon was involved, with males being at higher risk.[21]

Family violence

Violence against children, the elderly or a spouse is perceived to be a problem in many First Nations communities. In a Manitoba survey of 57 bands, over two thirds (69%) of the respondents identified spousal abuse as a major or serious problem in their community.[3,30]

According to "Injury Prevention Programs in First Nations Populations," physical abuse is responsible for half of all deaths due to maltreatment in First Nations children.[31]

Conclusion

Aboriginal people are exposed to many risk factors for unintentional and intentional injuries. Their physical environments, especially in Northern communities (cold temperatures, remoteness, hunting lifestyle), housing conditions (overcrowding, dilapidation), social conditions (e.g. low socio-economic status), frequent use of risky vehicles such as ATVs and snowmobiles, pattern of alcohol and tobacco use, location of many First Nations communities near large bodies of water, and a lack of safety devices and procedures place them at an increased risk of being injured from accidents and violence.

Although rates of injury-related mortality and morbidity have improved over time, they are still high in First Nations people, especially when compared to the rates in the general Canadian population.

Young males in particular appear to have a higher risk of injury. This contributes to high PYLL due to injuries in the Aboriginal population, with accidents and violence accounting for approximately half of all PYLL. Suicide is a rampant problem in Aboriginal communities, and often occurs at a younger age than in the general population. MVAs are also responsible for high numbers of injuries and injury deaths. There is a glimmer of hope, however, as Aboriginal communities and organizations are now implementing initiatives and programs to prevent injuries and reduce the accompanying burden.[3]

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