Statistical Brief

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Hispanic Childhood Mortality in North Carolina, 1999-2003

by Fatma Simsek

INTRODUCTION

North Carolina has the fastest-growing Hispanic/Latino population in the United States.[1] The U.S. Census Bureau Population Estimates for 2004 show the total Latino population to be 517,617 individuals or 6 percent of the total North Carolina population.[2]

Because much of the growth in the Hispanic population has occurred among the younger age groups, health issues affecting Hispanic children are of increasing importance. This report is a descriptive summary of childhood deaths in North Carolina from 1999 to 2003, with a particular focus on the Hispanic population. The purpose of this study is to provide data that may help identify prevention opportunities that will reduce child fatalities.

METHODS

This study is based on North Carolina death certificate data, using the reported underlying cause of death. The rate is the number of deaths in a category per 100,000 children (ages 1-17). Data are presented for the following age categories: 1-4 years, 5-9 years, 10-14 years, and 15-17 years. The data are reported by child's place of residence, not place of death. The summary statistics in this report present various causes of death for all children combined, as well for children of Hispanic/Latino origin. In this report, the "total" category includes persons of both Hispanic and non-Hispanic ethnicity. Ethnicity information on death certificates is based on information supplied to the funeral director by a family member or other informant. Trends in death rates over the past five years are presented. North Carolina began using the ICD-10 coding for causes of death in 1999, so the death rates in this report for the 1999-2003 period are consistent in cause of death categorization.

RESULTS

From 1999 through 2003, the total number of deaths among children ages 1-17 was 2,730 out of a population of 9,428,820, for a crude death rate (CDR) of 29.0 deaths per 100,000 population (see Table 1). This compares to a CDR for Hispanic children of 28.2. The overall child death rate during the five-year period declined by 11.2 percent from 1999 to 2003. Even with a slightly larger population of children in 2003 compared to 1999, the number of children who died decreased by 34 (-6%). Among Hispanics, there was not a clear trend in the CDR during this time, due in part to the small number of deaths each year. However, the 2003 rate of 23.1 was the lowest of any of the previous 4 years, and reversed the increases seen in 2001 and 2002.

Male children had higher death rates in the total group as well as in the Hispanic/Latino population. Among all children, the male CDR was 1.45 times that of the female rate. For Hispanic children, the male/female rate ratio was 1.28. Even though the observed difference between male and female child fatalities among all children is statistically significant (P-value <.0001), for Hispanic children there is no significant difference between male and female children.

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Table 1
North Carolina Child Fatalities, 1999-2003

ALL CHILDREN			
	Total Deaths	Total Population	Crude Rate*
	2,730	9,428,820	29.0
	Total Deaths by Year	**Annual Population**	**Crude Rate***
1999	570	1,824,849	31.2
2000	556	1,853,393	30.0
2001	524	1,890,371	27.7
2002	544	1,922,038	28.3
2003	536	1,938,169	27.7
	Total Deaths by Gender	**Population**	**Crude Rate***
Male	1,647	4,829,870	34.1
Female	1,083	4,598,950	23.5
	Total Deaths by Age	**Population**	**Crude Rate***
1-4	693	2,214,532	31.3
5-9	478	2,801,180	17.1
10-14	609	2,818,672	21.6
15-17	950	1,594,436	59.6
HISPANIC CHILDREN			
	Total Deaths	Total Population	Crude Rate*
	168	594,916	28.2
	Total Deaths by Year	**Annual Population**	**Crude Rate***
1999	28	93,672	29.9
2000	29	110,255	26.3
2001	33	118,250	27.9
2002	45	129,801	34.7
2003	33	142,938	23.1
	Total Deaths by Gender	**Population**	**Crude Rate***
Male	98	309,858	31.6
Female	70	285,058	24.6
	Total Deaths by Age	**Population**	**Crude Rate***
1-4	61	196,564	31.0
5-9	35	181,904	19.2
10-14	28	136,952	20.4
15-17	44	79,496	55.3

*Rate is for 100,000 children.

Considering age-specific mortality, for both the total population and Hispanics, the death rates were highest in the youngest and oldest age groups (ages 1-4 and 15-17), and were lowest in the 5-9 age category. Child mortality increased at age 10-14, and continued to increase in the later teens (ages 15-17). This J-curve pattern of mortality is evident in Figure 1, and is similar for the total population and for Hispanics.

Injuries accounted for the majority of the deaths among both Hispanic children and all children (69.6% and 57.2%, respectively), with unintentional injuries contributing to the bulk of these deaths in both groups (Table 2). Unintentional injuries are by far the leading cause of death among children. Deaths classified as "illnesses" accounted for 25.6 percent of the deaths among Hispanics and 32.4 percent of the deaths for all children.

Table 2
Primary Causes of Death Among North Carolina Children, 1999-2003

Cause of Death	Total	Hispanic
Injuries	1,562	117
Unintentional Injuries	1,235	99
Homicide	190	12
Suicide	137	6
Illnesses	885	43
All Other	283	8

Compared to the total population, cause-specific mortality rates among Hispanics were the same as or lower than those of the overall population for all causes of death except unintentional injuries, which was higher for Hispanic children (Figure 2).

Among Hispanics, the mortality rate for unintentional injuries was about 1.3 times as high as that for all children (16.6 vs. 13.1 per 100,000 population).

Looking at the mortality rate due to unintentional injuries by age group, the rate is clearly highest among the older children (ages 15-17) (Figure 3). This is true both for Hispanics and all children. The rate of unintentional injury deaths among the15-17

Figure 1: Five-Year Child Death Rates Among North Carolina Children, Ages 1-17, 1999-2003

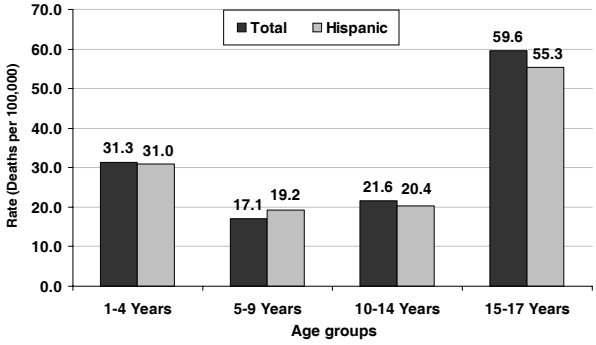


Figure 2: Death Rates by Cause for All vs. Hispanic North Carolina Children, 1999-2003

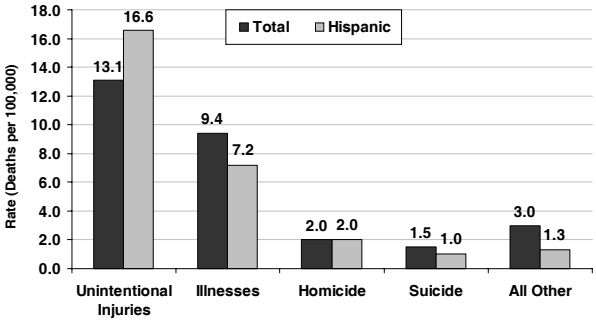


Figure 3: Unintentional Injury Death Rates by Age Group for Total vs. Hispanic North Carolina Children, 1999-2003

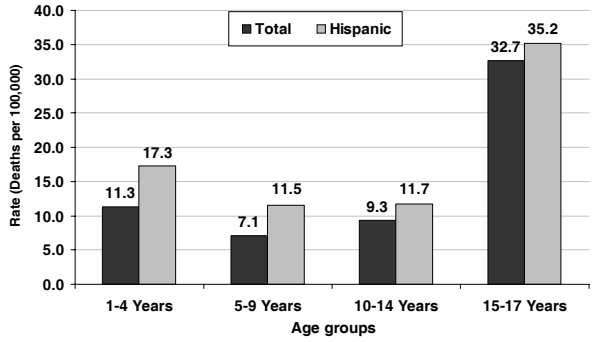
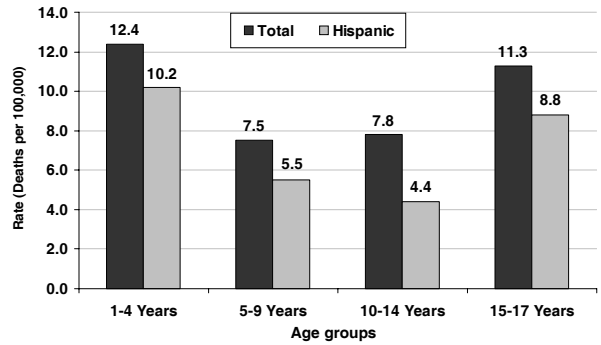


Figure 4: Illness Death Rates by Age Group for Total vs. Hispanic North Carolina Children 1999-2003



year-old group was 2-3 times as high as that of any other age group. For all four age groups, the mortality rate due to unintentional injuries was higher among Hispanic children than in the total group.

In contrast to this pattern, the mortality rate for illnesses was lower among Hispanics than the total population for each of the four age groups (Figure 4). The mortality rate due to illnesses was highest in the youngest age group for both Hispanics and the total population.

DISCUSSION

The death rate among children is an indication of whether children are safe and receiving adequate health care. From 1999 through 2003, the average death rate for all children in North Carolina was roughly 29 deaths per 100,000 children, while it was about 28 per 100,000 for Hispanic children. Thus, the overall child death rates were very similar for both groups. The fact that Hispanic child deaths showed a decline in the most recent year (2003) is promising; however, additional years of data are needed to determine whether this may be the beginning of a real trend.

Although the overall child death rate from all causes shows a downward trend, the death rate from unintentional injuries (caused by motor vehicles, firearms, drowning, fire and flame, etc.) remains tragically high. The pattern of deaths from unintentional injuries in North Carolina – 45 percent of all child deaths – is similar to that in the United States.[3] According to the findings reported in this study, children face an increased risk of death due to injuries as they become adolescents, and this is true for Hispanic children as well as the total child population. On the positive side, many of these deaths can be prevented through interventions such as encouraging seat belt use, promoting swimming safety, and adopting graduated driver's licenses for teens.[4]

The findings of this study should be interpreted with some caution. The data used in this report are based on the underlying cause of death as reported on death certificates, and the reliability of this information may be questioned.[5] The interpretation of these data also warrants caution due to the small number of deaths among the Hispanic/Latino population. Small numbers in the numerator of a rate leads to unstable rates; even one death can change the rate

significantly. There is also some concern about the accuracy of ethnicity reporting on the death records. Since ethnicity is largely a subjective measure, classification of decedents based on other persons' assessments or observations is prone to error.

This study suggests that the mortality experience of Hispanic children is similar to that of the total population in many respects. However, as is sometimes the case with recently immigrated populations, their health status may deteriorate over time. Therefore, continued assessment of Hispanic childhood mortality is clearly warranted. At the same time, efforts aimed at reducing unintentional injuries and other preventable causes of death need to be targeted toward this rapidly growing and vulnerable population.

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