

THE NATIONAL HEALTH INTERVIEW SURVEY AS A SOURCE OF DATA ON AMERICAN INDIANS AND ALASKA NATIVES

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INTRODUCTION

Since 1978, respondents to the National Health Interview Survey (NHIS) of the National Center for Health Statistics (NCHS) have been able to identify their racial background as American Indian or Alaska Native. Since American Indians and Alaska Natives represent only about 0.6 percent of the general U.S. population, in any one calendar year there are not enough sample cases in the NHIS to produce statistically reliable estimates of their sociodemographic and health characteristics. Between 1978 and 1981, however, 2,279 NHIS sample cases were identified as American Indian or Alaska Native. At first glance, this would appear to be a sufficient sample size to produce statistically reliable estimates for this racial category. But what about the quality of these data? And to what extent can these data be used to characterize the health characteristics of American Indians and Alaska Natives?

This paper summarizes the results of a preliminary assessment of these questions based on comparisons of NHIS estimates for 1978-81 with 1980 Census data, and presents the results of an exploration of the extent to which NHIS data can be disaggregated for American Indians and Alaska Natives living "on or near" a reservation.

Background

One of the basic principles underlying the institutionalization of the NHIS in 1957 was that it would focus on health topics for which it was an appropriate vehicle. Corollaries of this principle were that population groups that were too small, or health and illness events that were too rare, to be feasibly studied in a continuous, national, complex, household, health interview survey would be considered out of scope for purposes of this particular data system. At the same time, however, population subgroups would be studied, even though they represented a numerically small proportion of the population if they were feasible and important to study within the scope and objectives of the survey.

In line with this philosophy, numerous minority subpopulations have been studied through the NHIS from the very beginning and have continued to be studied. In many instances, it has been feasible to study such subpopulations through the NHIS by combining data from two or more data years.

Scope

Accordingly, in 1983, a study plan was developed to examine the feasibility of pooling NHIS data to describe the health characteristics of American Indians and Alaska Natives. This study was designed to provide an answer to the following questions:

- o How many sample cases were identified as American Indians or Alaska Natives in the NHIS between 1978 and 1981? Are there enough cases for statistically reliable analyses?

- o What types of population estimates could these sample cases yield for individual years, as well as for combined years?
- o What can be said about the quality of these population estimates based on comparisons with 1980 Census data?
- o What kinds of NHIS tabulations are feasible, and what do they tell us about the health characteristics of American Indians and Alaska Natives?
- o To what extent is it feasible to use NHIS data to estimate the size and characteristics of the population of American Indians and Alaska Natives eligible for services through Indian Health Service programs?

Methodology

To answer these questions, NHIS data for the years 1978-81 (NCHS, 1979, 1981a, 1981b and 1982) were pooled. After the data were pooled, county of residence information in this pooled data set was then matched against a list of counties identified by the Indian Health Service as being "on or near" an Indian reservation. Based on this matching process, sample cases were then classified by whether or not they resided in an IHS service area county. No effort was made, however, to classify persons in terms of specific IHS service areas.

This enriched data set was then used to produce annual and average annual unweighted sample counts, as well as weighted population estimates for American Indians and Alaska Natives, including Indians and Alaska Natives living in counties "on or near" a reservation. Available data were then used to evaluate the quality of these estimates. Exploratory tabulations on selected health characteristics of American Indians and Alaska Natives were also prepared and compared to similar information for the general U.S. population. Because of the exploratory nature of these tabulations, a .10 level of significance was used in evaluating differences between American Indians and Alaska Natives and all other racial background categories of the population.

IDENTIFYING AMERICAN INDIANS AND ALASKA NATIVES IN THE NHIS

Since 1976 the NHIS has attempted to collect self-report data on the racial/ethnic origins of household members (Drury, Moy, and Poe, 1980). Initial efforts to collect this information, however, confronted a major problem with respect to the identification of American Indians. Persons who self-identified themselves as "Americans" apparently interpreted the phrase "American Indian" in the flashcard category "American Indian or Alaskan Native" to mean "American or American Indian" and thereby inflated the estimates of American Indians and Alaska Natives obtained through the 1976 and 1977 NHIS. Because of this problem, data collected through the 1976 and 1977 NHIS cannot be

used to provide estimates for American Indians and Alaska Natives.

To rectify this problem, the NHIS item on reported racial background was modified in 1978 so that the flashcard used by respondents contained the answer category "Alaskan Native or American Indian." This change in the identification of American Indians in the NHIS was effective. The 1978 NHIS produced an estimate of 1,175,000 persons with American Indian or Alaska Native backgrounds: an estimate which accorded well with other estimates of this population group for that time period. In 1979, however, an effort was made to improve the procedure further by changing the first category of the flashcard, which is handed to respondents when asking about racial background, from "1. Alaskan Native or American Indian" (in 1978) to "1. Aleut, Eskimo, or American Indian" (in 1979 and later years). This change was made to avoid false positive identification of people as Alaska Natives, due to the fact that persons born in Alaska refer to themselves as native Alaskans, just as people born in other places sometimes refer to themselves as a native of that place (for example, a native New Yorker).

COMPARISON OF NHIS AND CENSUS DATA

To clarify the quality of NHIS estimates for American Indians and Alaska Natives, the number and selected characteristics for this population category estimated from the NHIS were first compared with counts and percent distributions from the 1980 Census (Table 1). This first analysis showed that, during the 1978-81 time period, 2,279 NHIS sample cases were identified as American Indians or Alaska Natives. This pooled sample yielded an average annual estimate for 1978-81 of 1,201,476 American Indians and Alaska Natives, representing about 0.6 percent of the average annual civilian noninstitutionalized population during that same period of time. The vast majority (77.8 percent) of these 1.2 million persons resided in the South (36.4 percent) or West (41.4 percent) regions. The median age for males and females was 25 years. About 48.9 percent of all American Indians and Alaska Natives were female. Approximately 56.9 percent were high school graduates; 7.2 percent, college graduates. Among persons 20-64 years of age, 19.2 percent of the men, and 43.8 percent of the women, were not in the labor force. Among those 20-64 years of age in the labor force, 8.9 percent of the men and 13.3 of the women were unemployed. The median family income was about \$10,553.

In general, these NHIS estimates of selected characteristics of all American Indians and Alaska Natives compare favorably with those obtained from the 1980 Census (Table 1) both with respect to the percent of American Indians and Alaska Natives in the population, and with respect to broad regional characteristics, median age, sex composition, educational attainment, and labor force status.

The NHIS does produce a slightly different profile, however, with respect to the percent of persons in the specific regions of the South and West, unemployment rates for men and women, and median family income. Conceivably, however, these latter two differences may reflect the fact, respectively, that the NHIS unemployment rates are an average of annual unemployment rates over a four year period, and that the median family income was computed from individual data not from data for families, as was the 1980 Census median family income figure.

HEALTH CHARACTERISTICS OF AMERICAN INDIANS AND ALASKA NATIVES

To explore the feasibility of using NHIS data to develop statistically reliable descriptions of the health characteristics for all American Indians and Alaska Natives, age-specific and age-adjusted tabulations were prepared for selected indicators of disability, self-assessed health status, and the use of certain health care resources. Standard errors for these statistics were computed using the statistical software package SESUDAAN (Shah, 1981).

These analyses showed that, during 1978-81, American Indians and Alaska Natives experienced about 30.9 restricted activity days and 10.8 bed disability days per person per year. About 19.4 percent had any limitation of activity due to one or more chronic conditions or impairments, and about 15.6 percent were limited in their major activity (be that working, keeping house, going to school, or something else) because of a chronic condition or impairment.

During 1978-81, respondents to the NHIS were asked the following question about their general health status: "Compared to other persons your age, would you say that your health is excellent, good, fair, or poor?" Among American Indians and Alaska Natives, about 38.7 percent indicated that their health was "excellent;" 40.6 percent, "good;" 14.0 percent, "fair;" and 5.5 percent, "poor."

NHIS respondents were also asked a series of questions about their use of health care resources. Among American Indians and Alaska Natives, about 11.0 percent had one or more short-stay hospital experiences during the 12-month period preceding their interview. About seven out of 10 (70.9 percent of) American Indians and Alaska Natives indicated that they had contacted a doctor in the past year, including doctors seen while a patient in a hospital. Excluding doctors seen while an inpatient, approximately 22.9 percent reported contacting a doctor five or more times during the previous 12 month period. Based on the response to a question about how long it had been since they last went to a dentist, it was estimated that 39.9 percent visited a dentist during the past 12 months.

American Indians and Alaska Natives are similar to the general U.S. population with respect to the relative frequency of being hospitalized during a 12 month period, but are different from the general population in several important ways: (Table 2):

- o American Indians and Alaska Natives have higher levels of disability days and limitation of activity than persons of all other racial backgrounds;
- o They are less likely to be in excellent health and more likely to be in fair or poor health;
- o They are less likely to have had any contact with a doctor during a 12-month period, but are more likely to contact a doctor five or more times during that same period of time;
- o They are less likely to have contacted a dentist one or more times in the course of a year.

FEASIBILITY OF USING THE NHIS TO DESCRIBE THE HEALTH CHARACTERISTICS OF AMERICAN INDIANS AND ALASKA NATIVES IN IHS SERVICE AREAS

The NHIS is not specifically designed to produce subnational estimates for American Indians and Alaska Natives residing in counties which are "on or near" a reservation—the IHS service population. So it is not too surprising that a mapping (not shown) of these IHS counties in terms of whether or not they were included in the actual NHIS sample counties for 1978-81 indicates that the NHIS does not provide a basis for generalizing about the health characteristics of the IHS service population.

This limitation of the NHIS is also evident when NHIS estimates of the number and characteristics of the IHS service population are compared with similar information from the 1980 Census (Table 3). The data in Table 3 show that during 1978-81, 708 NHIS sample cases were identified as American Indians or Alaska Natives living in counties which were "on or near" a reservation. These 708 sample persons yielded an estimate of the IHS service population of approximately 388,964 persons (Table 3), a figure substantially lower than the Census-based count. The overwhelming majority (94.9 percent) of these persons resided in the South (15.3 percent) or the West (79.6 percent). About 50.5 percent were females, and some 43.3 percent of them were in the childbearing age range of 15-44 years. About 11.7 percent of all Indians and Alaska Natives in IHS counties were under six years of age; 10.5 percent, 60 years of age or older. Approximately 71.7 percent of all males 20-64 years of age were employed; for females, the comparable figure was 49.3 percent.

In this instance, the NHIS estimate of the number of American Indians and Alaska Natives residing in IHS counties is well below the Census count. It is clear that the coverage of American Indians and Alaska Natives in the NHIS becomes less complete as one disaggregates the data for IHS counties.

Nonetheless, it is also the case that the profile of IHS county Indians and Alaska Natives which emerges from the NHIS sample is, in some respects, quite similar to the Census profile. This raises a question which further methodological research might well address: Is it conceivable that the NHIS data for American Indians and Alaska Natives in IHS counties, despite their restricted scope, may be "fairly" representative of the American Indian and Alaska Native groups which are covered in the actual NHIS sample. If this were so, then 1978-81 NHIS data might be used to describe the health characteristics of American Indians and Alaska Natives in this redefined subset of the IHS service population.

CONCLUDING REMARKS

To evaluate the feasibility of using NHIS data to describe the health characteristics of American Indians and Alaska Natives, several methodological and substantive analyses have been undertaken. The results of these analyses are encouraging but preliminary, and need to be extended. The major findings and conclusions from these analyses are as follows:

- o The 1978-81 NHIS produces estimates of the number and selected sociodemographic characteristics of all American Indians and Alaska Natives which compare favorably with those obtained from the 1980 Census.

- o The 1978-81 NHIS underestimates the number of American Indians and Alaska Natives in IHS service area counties due to the restricted scope of the de facto NHIS sample. But, NHIS estimates of selected sociodemographic characteristics for these same categories of American Indians and Alaska Natives compare favorably with those obtained from the 1980 Census.
- o Pooling 1978-81 NHIS data is a viable way of producing statistically reliable estimates of the health characteristics of all American Indians and Alaska Natives in the U.S., as well as for Indians and Alaskan Natives in IHS service area counties. But the restricted scope of the NHIS sample of Indians and Alaskan Natives in IHS service area counties does not provide a basis for generalizing about the health characteristics of American Indians and Alaska Natives living in counties which are "on or near" a reservation.
- o Further substantive analyses of NHIS data should be carried out to provide more detailed descriptions of the health characteristics of all American Indians and Alaska Natives in the U.S. But, insofar as the NHIS sample of American Indians and Alaska Natives is apparently made up of a disproportionate share of persons residing in counties which are not "on or near" a reservation, substantive analysts should be aware of this source of potential bias in interpreting results.
- o Further methodological analyses of NHIS data for American Indians and Alaska Natives in IHS service areas should be carried out to better define the scope and representativeness of the NHIS sample of American Indians and Alaska Natives in IHS service areas.

REFERENCES

- CSR, Associates: American Indians and Alaska Natives: Demographic and Socioeconomic Status in Various Settings and Patterns of DHHS Funding Washington, CSR Associates, Inc., 1985.
- Drury, T.F., Moy, C.S., and Poe, G.S.: Going Beyond Interviewer Observations of Race in the Health Interview Survey. U.S. Department of Health and Human Services, Public Health Service. July 1980.
- National Center for Health Statistics, B. Bloom: Current estimates from the National Health Interview Survey, United States, 1981. Vital and Health Statistics, Series 10-No. 141. DHHS Pub. No. (PHS) 83-1569. Public Health Service. Washington. U.S. Government Printing Office, October 1982.
- National Center for Health Statistics, J.D. Givens: Current estimates from the National Health Interview Survey, United States, 1978. Vital and Health Statistics, Series 10-No. 130. DHHS Pub. No. (PHS) 80-1551. Public Health Service. Washington. U.S. Government Printing Office, November 1979.

National Center for Health Statistics, S.S. Jack: Current estimates from the National Health Interview Survey, United States, 1980. Vital and Health Statistics, Series 10-No. 139. DHHS Pub. No. (PHS) 82-1567. Public Health Service. Washington. U.S. Government Printing Office, December 1981a.

Shah, B.V.: SESUDAAN, Standard Errors Program for Computing of Standardized Rates from Sample Survey Data. Research Triangle Park, North Carolina. Research Triangle Institute, 1981.

National Center for Health Statistics, S.S. Jack and P.W. Ries: Current estimates from the National Health Interview Survey, United States, 1979. Vital and Health Statistics, Series 10-No. 136. DHHS Pub. No. (PHS) 81-1564. Public Health Service. Washington. U.S. Government Printing Office, April 1981b.

Table 1. Comparison of 1980 Census data and 1978-1981 National Health Interview Survey (NHIS) estimates of the number and selected sociodemographic characteristics of American Indians and Alaska Natives

Characteristic	1980 Census	1978-81 NHIS
Number of persons.....	1,418,195	1,201,476
Percent of population.....	0.6	0.6
<u>Regional distribution</u>		
Percent in Northeast or North Central region.....	23.1	22.1
Percent in South or West....	76.9	77.8
Percent in South.....	26.2	36.4
Percent in West.....	50.7	41.1
<u>Median age in years</u>		
Male.....	22.3	25.0
Female.....	23.4	25.0
Percent female.....	51.3	48.9
<u>Percent of persons 25 years and over who are</u>		
High school graduates.....	55.5	56.9
College graduates.....	7.7	7.2
<u>Percent of persons 20-64 years not in the labor force</u>		
Male.....	20.9	19.2
Female.....	46.2	43.8
<u>Percent of persons 20-64 years in the labor force who are unemployed^a</u>		
Male.....	13.0	8.9
Female.....	10.8	13.3
Median family income.....	\$13,724	\$10,553 ^b

Source: NHIS estimates computed by Office of Analysis and Epidemiology Program from 1978-81 NHIS data provided by the Division of Health Interview Statistics, National Center for Health Statistics. Census data obtained from CSR Associates: American Indians and Alaska Natives: Demographic and Socioeconomic Status in Various Settings and Patterns in DHHS Funding. Washington, D.C. CSR Associates, Inc., 1985, and unpublished tabulations provided by the Indian Health Service.

^aNHIS data are average annual estimates for 1978-81.

^bMedian family income computed from grouped NHIS data for individuals for 1980 only.

Table 2. Selected health characteristics by American Indian and Alaska Native background status, United States, 1978-81

Health Characteristic	All persons	American Indians and Alaska Natives	
		Yes	No
<u>Health service utilization</u>			
		Age-adjusted ^{a/} percent or rate (Standard error) ^{b/, c/}	
Persons with one or more physician visits in past year.....	74.9 (0.1)	71.3 (1.6)	74.9 (0.1)
Persons with five or more physician visits in past year.....	20.8 (0.1)	24.1 (1.3)	20.8 (0.1)
Persons with one or more short-stay hospital episodes in past year.....	10.3 (0.1)	11.7 (1.1)	10.3 (0.1)
Persons with one or more dental visits in past year.....	50.0 (0.2)	38.5 (2.0)	50.0 (0.2)
<u>Disability days</u>			
Number of restricted activity days per person per year.....	19.0 (0.2)	34.0 (3.3)	18.9 (0.2)
Number of bed disability days per person per year.....	6.9 (0.1)	11.7 (1.1)	6.9 (0.1)
<u>Limitation of activity due to one or more chronic conditions or impairments</u>			
Persons with any limitation of activity.	14.4 (0.1)	22.4 (1.2)	14.3 (0.1)
Persons with limitation in major activity.....	10.8 (0.1)	18.3 (1.0)	10.8 (0.1)
Persons unable to perform usual activity.....	3.7 (0.0)	6.8 (0.6)	3.7 (0.0)
<u>Self-assessed health status</u>			
Persons in excellent health.....	49.1 (0.2)	37.5 (3.1)	49.2 (0.2)
Persons in good health.....	38.4 (0.1)	40.3 (2.6)	38.3 (0.1)
Persons in fair or poor health.....	12.5 (0.1)	22.3 (1.0)	12.5 (0.1)
Persons in poor health	2.9 (0.0)	6.6 (0.5)	2.9 (0.0)

SOURCE: NCHS, computed by the Division of Epidemiology and Health Promotion from 1978-81 National Health Interview Survey data provided by the Division of Health Interview Statistics, and from information on the community characteristics of U.S. counties provided by the Vital Events Staff, Indian Health Service.

^{a/} Age-adjusted by the direct method to the average annual 1978-81 civilian noninstitutional population using four age groups.

^{b/} Computed using the statistical software package SESUDAAN (B.V. Shah, SESUDAAN: Standard errors program for computing of standardized rates from sample survey data. North Carolina: Research Triangle Institute, April 1981).

^{c/} 95-percent confidence intervals for the percentages and rates shown can be obtained by multiplying the standard error by 1.96 and adding and subtracting the obtained value from the observed percentage or rate.

Table 3. Comparison of 1980 Census data and 1978-1981 National Health Interview Survey (NHIS) estimates of the number and selected sociodemographic characteristics of American Indians and Alaska Natives residing in Indian Health Service (IHS) program counties

Characteristic	1980 Census	1978-81 NHIS
Number of persons.....	828,609	388,964
Percent of Indian and Alaska Native population.....	58.4	32.4
Regional distribution		
Percent in Northeast or North Central region.....	14.7	5.0
Percent in South or West....	85.3	94.9
Percent in South.....	22.2	15.3
Percent in West.....	63.1	79.6
Percent in key 11 States ^a ...	81.6	73.6
Percent under 6 years.....	13.6	11.7
Percent 60 years and over.....	8.0	10.5
Percent female.....	50.9	50.5
Percent of females who are 15-44 years of age.....	47.4	43.3
Percent of persons 20-64 years who are employed		
Males.....	62.8	71.7
Females.....	45.8	49.3

Source: NHIS estimates computed by Office of Analysis and Epidemiology Program from 1978-81 NHIS data provided by the Division of Health Interview Statistics, National Center for Health Statistics. Census data obtained from CSR Associates: American Indians and Alaska Natives: Demographic and Socioeconomic Status in Various Settings and Patterns in DHHS Funding. Washington, D.C. CSR Associates, Inc., 1985, and unpublished tabulations provided by the Indian Health Service.

^aIncludes Alaska, Arizona, Minnesota, Montana, New Mexico, North Dakota, Oklahoma, South Dakota, Utah, Washington, and Wisconsin.