

Functional Limitations Among Older American Indians and Alaska Natives: Findings from the Census 2000 Supplementary Survey

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The objectives of this study were to determine the national prevalence and profile of American Indian and Alaska Natives with functional limitations. Data were obtained from 4763 American Indian and Alaska Native respondents aged 45 years or older in the Census 2000 Supplementary Survey. Functional limitations were reported by 28% of American Indian and Alaska Natives aged 45 years or older. These individuals were poorer, older, less educated, and less likely to be married or employed than American Indian and Alaska Natives without such limitations (for all comparisons, $P < .001$). American Indian and Alaska Natives have high disability rates, and many are not receiving benefits for which they qualify. (*Am J Public Health*. 2005;95:1945–1948. doi:10.2105/AJPH.2004.053462)

The health status of American Indian and Alaska Native older adults “ranks among the poorest of any minority in the nation.”¹ Chronic illnesses, such as diabetes, have reached epidemic proportions in American Indian and Alaska Native communities.² Such illness often results in difficulties in performing basic functional activities, such as lifting, climbing stairs, and walking.³ In addition to the consider-

able impact on quality of life, disability among older adults is “a better predictor of medical and social-service needs than simple prevalence or incidence figures of disease.”³ Despite the importance of documenting national data on functional limitations among older populations, little research attention has focused on this issue among older American Indian and Alaska Natives.⁴

This is the first nationally representative study of American Indian and Alaska Natives aged 45 years and over, comparing and contrasting the sociodemographic characteristics and service utilization patterns of those with and those without functional limitations. With increased awareness of the prevalence and characteristics of American Indian and Alaska Natives with functional limitations, health care professionals can more accurately track changes over time and target outreach, prevention, and other services for this population.⁵

METHODS

Sample

The nationally representative Census 2000 Supplementary Survey/American Community Survey (C2SS/ACS) had a response rate of 95.4%.⁶ The current study compared the characteristics and circumstances of self-identified American Indian and Alaska Native respondents aged 45 years and older with functional limitations ($n = 1367$) with those of their nondisabled American Indian and Alaska Native peers ($n = 3396$). The age 45 was chosen because chronic diseases occur earlier among American Indian and Alaska Natives, and American Indians are considered elders by the age of 45.²

Measures

American Indian and Alaska Native status was self-identified. Respondents were defined as having functional limitations if they reported that they had a long-lasting condition that “substantially limited one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying.” Household annual income was on the basis of a summation of all possible

sources of income for all household members. The poverty index reported the household income as a percentage of the poverty line for households of that size and composition. Other demographic variables analyzed included age, gender, marital status, labor force status, place of residence, and whether the respondent lived on a reservation.

Analysis Plan

Using the statistical software package SAS version 8.1 (SAS Institute Inc, Cary, NC), we analyzed the C2SS/ACS data to determine the prevalence of American Indian and Alaska Natives with functional limitations. The functionally impaired American Indian and Alaska Natives were compared with the nonfunctionally impaired using χ^2 tests for categorical variables and independent t tests for ratio level variables. Furthermore, a multiple logistic regression analysis was completed to model the association of several demographic characteristics, determined a priori, with functional limitation status among American Indian and Alaska Natives aged 45 years and older. In the subsample of disabled American Indian and Alaska Natives who were living below the poverty line ($n = 321$), we determined the proportion using public assistance or food stamps. The numbers and percentages in the Results section were generated with a weighting variable designed by the US Census Bureau. This weight variable represents the probability of selection, including noninterview adjustments and controlling to the 2000 Census housing units and population level. More detailed information on the weighting variable, sampling strategy, and survey design of the C2SS/ACS is available from the US Census Bureau.⁷

RESULTS

This study estimated that there were 239 000 American Indian and Alaska Natives aged 45 years and over living with a functional limitation in 2000, making up 27.9% of all American Indian and Alaska Natives in this age group. The percentage with functional limitations ranged from

18.7% in those aged 45 to 49 years to 66.6% in those aged 85 years and older. Forty-four percent of those living below the poverty level had functional limitations compared with 25% of those living above the poverty line. Half of all American Indian and

Alaska Natives aged 45 years and over who were receiving public assistance had a functional disability.

As indicated in Table 1, American Indian and Alaska Natives with functional limitations were significantly older, poorer, less

likely to be married, and more likely to have not finished high school than respondents without such limitations. Furthermore, those with functional disabilities were more than twice as likely to be out of the labor force and to be living below the

TABLE 1—Comparison of American Indians/Alaskan Natives (AIAN) Aged 45 Years and Over with Functional Limitations to Their Peers Without Functional Limitations

Variable	With Functional Limitations, All (Weighted, n = 239 336, Unweighted, n = 1367)	Without Functional Limitations, All (Weighted, n = 618 867, Unweighted, n = 3396)	With Functional Limitations, Male (Weighted, n = 106 991, Unweighted, n = 598)	Without Functional Limitations, Male (Weighted, n = 295 096, Unweighted, n = 1624)	With Functional Limitations, Female (Weighted, n = 132 345, Unweighted, n = 769)	Without Functional Limitations, Female (Weighted, n = 323 771, Unweighted, n = 1772)
Gender						
Male	44.7%	47.7%				
Female	55.3%	52.3%				
Mean age, y	61.3	56.2***	60.3	55.7***	62.0	56.7***
Marital status						
Married	46.0%	62.5***	56.3%	69.4***	37.6%	56.2***
Widowed	20.2%	11.4%	10.5%	5.2%	28.0%	17.0%
Divorced	18.9%	15.9%	17.9%	15.3%	19.7%	16.4%
Separated	5.7%	3.5%	4.0%	2.8%	7.1%	4.1%
Never married	9.2%	6.8%	11.2%	7.3%	7.6%	6.4%
Education status						
<High school graduate	40.2%	27.2***	35.3%	26.3***	44.0%	28.1***
High school graduate ^a	26.0%	25.7%	30.6%	24.5%	22.3%	26.8%
Some college	24.0%	29.5%	24.7%	29.2%	23.4%	29.7%
College degree or more	9.9%	17.6%	9.4%	20.1%	10.3%	15.4%
Employment status^b						
Employed	31.6%	70.5***	27.4%	76.7***	35.4%	64.6***
Unemployed	3.5%	4.1%	3.6%	3.2%	3.5%	5.0%
Not in labor force	64.9%	25.4%	69.0%	20.1%	61.1%	30.4%
Mean household income, \$	\$35 590	\$53 297***	\$37 400	\$57 780***	\$34 126	\$49 211***
Poverty index						
Below poverty line ^c	25.1%	12.3***	22.5%	9.7***	27.2%	14.6***
At or above poverty line	74.9%	87.8%	77.5%	90.4%	72.9%	85.4%
Place of residence						
Central city of MSA	26.3%	21.8***	26.7%	21.5*	25.9%	22.2*
Remainder of MSA	35.1%	40.5%	37.7%	42.5%	33.0%	38.7%
Outside MSA	38.7%	37.7%	35.6%	36.1%	41.1%	39.2%
Dwelling on reservation						
Living on reservation	23.5%	26.5*	23.0%	25.8%	24.0%	27.1%
Living off reservation	76.5%	73.5%	77.0%	74.2%	76.0%	72.9%

Note. MSA = metropolitan statistical area; χ^2 tests were used for nominal level variables, and independent t tests were used for ratio-level variables. χ^2 tests were based on weighted data adjusted for sample size. Significance values appear at the top of the block in each cross-tab. All percentages are weighted percentages. Because of rounding, not all columns will sum exactly to 100% in some cross-tabulations.

^aHigh school/GED.

^bEmployment status is calculated for respondents aged 45–64 only.

^cThe poverty line varies dependent on number of people in the household and age of the householders.

* $P < .05$; ** $P < .01$; *** $P < .001$.

TABLE 2—Summary of Logistic Regression of American Indians/Alaskan Natives Aged 45 Years and Over with Functional Limitations Versus Their Peers without Functional Limitations (Unweighted N = 4763)

Independent Variables	Odds Ratios
Gender	
Female	0.97
Age	1.04***
Marital status ^a	
Divorced	1.41***
Never married	1.54***
Separated	1.83***
Widowed	1.10
Place of residence ^b	
Outside MSA	0.76**
Remainder of MSA	0.77**
Education ^c	
<High school graduate	1.45**
High school graduate ^d	1.48**
Some college	1.28*
Poverty index ^e	
100%–199% of the poverty line	2.09***
Below poverty line	2.50***
Constant	0.02***
Summary statistics	
–2 Log L	5170.6
Max-rescaled R ²	0.135

Note: MSA = metropolitan statistical area.

^aReference category is married.

^bReference category is central city of MSA.

^cReference category is college degree or more.

^dHigh school/GED.

^eReference category is those who have incomes at 200% or more of the poverty line.

* $P < .05$; ** $P < .01$; *** $P < .001$.

poverty line than were their nondisabled peers.

Multiple logistic regression analysis indicated that the odds of having a functional limitation increased with age and were higher among those who were not currently married, those who had less education, and those living at or near the poverty line (see Table 2).

When the households of those with functional limitations who were living below the

poverty line were examined, only 12% were receiving public assistance, and 41% were receiving food stamps.

DISCUSSION

More than one fourth of American Indian and Alaska Natives aged 45 years and over had a functional limitation in 2000. Those with limitations were much poorer, older, less educated, and less likely to be married or employed than American Indian and Alaska Natives without such limitations. Results of our study also revealed among disabled American Indian and Alaska Natives living in poverty relatively low utilization rates of services for which they were eligible (e.g., public assistance or food stamps).

The results of this study reveal a troubling level of functional limitations among American Indian and Alaska Natives and support earlier research suggesting that functional limitations begin substantially earlier in the American Indian and Alaska Native population.⁸ The elevated prevalence of a number of chronic conditions associated with functional limitations⁴ among American Indian and Alaska Natives may help explain these findings.

Our findings concerning the association between low socioeconomic status,^{9–11} marital status,^{12,13} and urban status¹⁴ and functional limitations within the American Indian and Alaska Native population are in keeping with the results of earlier studies. Of particular concern was our finding that among those aged 45 to 64 years, two thirds were out of the labor force and, thus, at risk for economic difficulties throughout later life. The fact that 88% of disabled American Indian and Alaska Natives living in poverty were not receiving public assistance indicates a need for better outreach and/or more appropriate programs.

Although our study was limited to the use of self-reported functional limitations, such self-report measures, nevertheless, are the most common way to assess levels of functional limitations in the research literature.³ Similarly, and although our study is limited by its cross-sectional nature, the high prevalence of functional limitations

that emerged, compared with the considerably lower rates found in earlier studies of the general midlife and older population,³ indicate an important area for additional longitudinal research and research-based intervention.

Evidence indicates that older American Indian and Alaska Natives bear a high burden of disability, with many failing to receive benefits for which they are eligible. The high quality of data available through the C2SS/ACS on both the rates of functional limitations and service utilization, as well as the detailed data available on the most vulnerable groups within the midlife and older American Indian and Alaska Native population, should help researchers, practitioners, and policymakers alike better address the needs of this growing population group. ■

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Contributors

E. Fuller-Thomson and M. Minkler originated the study and supervised all aspects of its implementation. Both authors completed the analysis, interpreted findings, and wrote and reviewed drafts of the brief.

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Human Participant Protection

This study was approved by the US Census Bureau's institutional review board. All results presented in this paper are derived from secondary analyses of Census data. All results are aggregated at the national level such that no one individual can be identified.

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