US Trends in Disability and Institutionalization among Older Blacks and Whites

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ABSTRACT

Objectives. This study estimated and compared the prevalence of disability and institutionalization in 1982, 1984, and 1989 among the older Black and White populations of the United States.

Methods. Data on over 1100 Blacks and 14 000 Whites in each of a series of three National Long Term Care Surveys were used.

Results. Diverging trends for Blacks and Whites led to statistically significant increases in the age- and sex-adjusted odds of disability (19%) and institutionalization (31%) for Blacks relative to Whites.

Conclusions. Black and White disparities in disability appear to have widened, while disparities in institutionalization appear to have narrowed during the decade of the 1980s. (*Am J Public Health.* 1997;87: 438–440)

Introduction

Rates of disability and institutionalization and changes in these rates over time are of considerable importance. The costs and burdens associated with either are substantial.[1] Moreover, as the racial and ethnic diversity of the aged population continues to increase,[2] changes in rates within subpopulations will have an ever greater impact on the health of the older population as a whole. This report presents rates of disability and institutionalization for Black and White subpopulations aged 65 and over and trends in disability prevalence for 1982 to 1989 for these same subpopulations.

Methods

Sample

The 1982, 1984, and 1989 National Long Term Care Surveys all used the same definition of disability, the same disability indicators, and the same sample design. Detailed descriptions of the 1982, 1984, and 1989 surveys are available in Manton et al.[3] At the first data collection, 1982, a sample of 34 519 persons was taken from the Medicare files, which represents over 97% of the population aged 65 and older. In 1984, respondents who were identified by the 1982 screen to be chronically disabled or institutionalized, were reinterviewed. Of those who were not identified as chronically disabled or institutionalized at the 1982 screen, a random subsample of 45.4% was screened for chronic disability and institutionalization in 1984. An additional 4916 persons who turned 65 between the 1982 and 1984 screen dates (i.e., aged in) were selected for a screener interview in 1984. Thus, a total of 22 348 persons who were alive at the 1984 screen date was screened for chronic disability and institutionalization (20% in person). The same process was followed for the 1989 sample, except that all nondisabled 1984 respondents were reinterviewed in 1989. A total of 17 565 persons (Manton et al. report the weighted sample size) was screened in 1989 (84% by phone and 16% in person). The weighted rate of proxy response for disabled respondents was 19.8% in 1982, 18.2% in 1984, and 17.6% in 1989.[3]

Measures

Chronic disability based on activities of daily living in the National Long Term Care Surveys was defined as the inability to perform one of six activities of daily living for at least 3 months without active personal assistance, standby personal assistance, or special equipment. Reporting an unmet need for compensatory assistance also qualified a respondent as having an activities-of-daily-living disability. Chronic disability based on instrumental activities of daily living was defined as the inability to carry out one of eight instrumental activities of daily living without help because of a health or disability problem (including old age) for 3 months or longer. Respondents were categorized as not disabled, instrumental activities of daily living–disabled only (at least 1 instrumental-activities-of-daily living disability but no activities-of-daily-living disabilities), activities of daily living–disabled (one to two, three to four, or five to six), or institutionalized. In all 3 years, institutions were defined as registered nursing homes or convalescent homes with three or more older adults and continuously available medical care.

Analyses

Cross-sectional weights were used to estimate the percentages of older Blacks and Whites with no disabilities, instrumental-activities-of-daily-living disability only,

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This paper was accepted September 16, 1996.

Editor's Note. See related comment by Kasl (p 333) in this issue.

and one to two, three to four, and five to six activities-of-daily-living disabilities, and institutionalized in 1982, 1984, and 1989. Percentages were age-standardized to the 1982 Black and White populations. *T* tests were used to identify statistically significant changes over time in the percentages disabled and institutionalized. Racial differences were assessed with logistic regression models that estimated age- and sex-adjusted odds of disability and institutionalization for Blacks relative to Whites.

Results

Table 1 presents estimates of disability prevalence for each of the 3 years for Whites and Blacks. The rate of disability was significantly and substantially greater in all years for Blacks, while the rate of institutionalization was significantly lower for Blacks in 1982 and 1984. The percentage of Whites aged 65 and older with no disabilities in 1982 was 77%, and the age-standardized percentage *increased* to 78.8% by 1989. The change represents a statistically significant absolute reduction of 1.8% in the rate of disability among Whites. Within the disability categories, there was a significant decline in the percentages with disability in instrumental activities of daily living only and with disability in five or six activities of daily living, and a significant 0.6% absolute reduction in the rate of institutionalization, while there was a significant increase in the percentage with disabilities in three or four activities of daily living.

Within the older Black population, the pattern was quite the opposite. The estimated percentage with no disabilities in 1982 was 67.0% and *decreased* to 65.2% (age standardized) by 1989. The absolute increase in the rate of disability (1.8) was as large as the reduction observed in the White population (1.8), but the increase was not statistically significant. Racial differences of 10 percentage points in 1982, 11.8 percentage points in 1984, and 13.7 percentage points in 1989 are apparent in Table 1. In other words, racial disparities in disability increased 18% from 1982 to 1984 and 37% from 1982 to 1989.

The diverging trends can also be seen in the age- and sex-adjusted odds ratios presented in Table 2. Blacks were 0.59 times as likely as Whites to report no disability in 1982 and 0.48 times as likely by 1989. In contrast, Blacks were 0.65 times as likely as Whites to be institution-

TABLE 1—1982, 1984, and 1989 Weighted, Age-Adjusted Disability and Institutional Prevalence and Population Estimates for Blacks and Whites, and 1982 to 1989 Changes

	1982	1984	1989	Change, %, 1982 to 1989 (*t* Tests)
No disabilities, % ± SE				
Whites	77.0 ± .32	77.2 ± .30	78.8 ± .29	1.8 (4.2)
Blacks	67.0 ± 1.26	65.4 ± 1.21	65.2 ± 1.27	−1.8 (−1.0)
ADLs only, % ± SE				
Whites	5.2 ± .17	5.4 ± .17	4.3 ± .14	−0.9 (−4.0)
Blacks	9.0 ± .75	10.5 ± .78	8.7 ± .72	−0.3 (−0.3)
1–2 ADLs, % ± SE				
Whites	6.2 ± .18	6.2 ± .17	6.0 ± .18	−0.2 (−0.8)
Blacks	9.1 ± .77	10.0 ± .76	9.9 ± .79	0.8 (0.7)
3–4 ADLs, % ± SE				
Whites	2.6 ± .12	2.7 ± .11	3.2 ± .13	0.6 (3.6)
Blacks	4.6 ± .55	4.3 ± .52	5.9 ± .62	1.3 (1.7)
5–6 ADLs, % ± SE				
Whites	3.2 ± .13	2.9 ± .12	2.4 ± .12	−0.8 (−4.8)
Blacks	6.2 ± .66	5.6 ± .59	5.9 ± .61	−0.3 (−0.3)
Institutionalized, % ± SE				
Whites	5.9 ± .18	5.6 ± .16	5.3 ± .16	−0.6 (−2.7)
Blacks	4.1 ± .53	4.2 ± .51	4.6 ± .57	0.5 (0.7)
Total population				
Whites	24 590 000	25 720 000	28 350 000	
Blacks	1 974 000	1 960 000	2 054 000	
Sample size				
Whites	17 855	19 625	14 751	
Blacks	1 545	1 580	1 161	

Note. ADL = activities of daily living.

TABLE 2—1982, 1984, and 1989 Age- and Sex-Adjusted Odds of Disability and Institutionalization, Blacks Relative to Whites, and 1982-to-1989 Change in Beta

	1982	1984	1989	Change in β 1982 to 1989 (*P*)[a]
No disabilities				
Odds ratio	0.59	0.52	0.48	
β ± SE	−0.53 ± .05	−0.65 ± .05	−0.73 ± .05	.20 (*P* < .001)
Instrumental ADLs only				
Odds ratio	1.74	2.11	2.01	
β ± SE	0.55 ± .08	0.74 ± .08	0.70 ± .09	.15
1–2 ADLs				
Odds ratio	1.49	1.62	1.65	
β ± SE	0.40 ± .08	0.48 ± .08	0.50 ± .08	.10
3–4 ADLs				
Odds ratio	1.77	1.59	1.88	
β ± SE	0.57 ± .11	0.47 ± .11	0.63 ± .10	.06
5–6 ADLs				
Odds ratio	2.03	2.01	2.37	
β ± SE	0.71 ± .09	0.70 ± .10	0.86 ± .10	.15
Institutionalized				
Odds ratio	0.65	0.69	0.85[b]	
β ± SE	−0.44 ± .11	−0.37 ± .11	−0.16 ± .11	−.28 (*P* < .01)

Note. ADL = activities of daily living.
[a]*P* values for change are shown if less than .05.
[b]Odds ratio not significantly different from 1.0. All other odds ratios are significant at *P* < .001.

alized in 1982, and 0.85 times as likely in 1989 (no longer significant).

Conclusion

It is well known that older Blacks are three times as likely as older Whites to be in poverty and half as likely to have completed high school[4] and that these socioeconomic differences generally account for a significant portion of racial differences in health status.[5,6] Unfortunately, education and income measures are not available in the National Long Term Care Survey screener sample, and no other data are currently available to test these trends further. Nonetheless, the disability trends reported here are consistent with the diverging mortality trends of populations of low- and middle-socioeconomic status recently reported in the literature.[7–9] Substantial, and perhaps increasing, racial disparities in disability coupled with a growing and aging older Black population[3] are likely to lead to considerable increases in the relative and absolute costs of caring for the older Black population of the United States. □

References

1. Schneider EL, Guralnik JM. The aging of America: impact on health care costs. *JAMA.* 1990;263:2335–2340.
2. *Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050.* Washington, DC: US Bureau of the Census; 1993. Current Population Reports, P25-1104.
3. Manton KG, Corder LS, Stallard E. Estimates of change in chronic disability and institutional incidence and prevalence rates in the US elderly population from the 1982, 1984, and 1989 National Long-Term Care Survey. *J Gerontol.* 1993;48:S153–S166.
4. *Sixty-Five Plus in America.* Washington, DC: US Bureau of the Census; 1992. Current Population Reports, Special Studies, P23-178RV.
5. Clark DO, Maddox GL. Racial and social correlates of age-related changes in functioning. *J Gerontol.* 1992;47:S222–S232.
6. Mendes de Leon CF, Fillenbaum GG, Williams CS, Brock DB, Beckett LA, Berkman LF. Functional disability among elderly Blacks and Whites in two diverse areas: the New Haven and North Carolina EPESE. *Am J Public Health.* 1995;85:994–998.
7. Pappas G, Queen S, Hadden W, Fisher G. The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *N Engl J Med.* 1993;329:103–109.
8. Feldman JJ, Makuc DM, Kleinman JC, Cornoni-Huntley J. National trends in educational differentials in mortality. *Am J Epidemiol.* 1989;129:919–933.
9. Preston SH, Elo IT. Are educational differentials in adult mortality increasing in the United States? *J Aging Health.* 1995;7:476–496.

An Increasing Prevalence of Hearing Impairment and Associated Risk Factors over Three Decades of the Alameda County Study

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ABSTRACT

Objectives. This study assessed changes in the prevalence of hearing impairment in persons aged 50 years and older over the past 30 years and identified risk factors.

Methods. Age-adjusted hearing impairment prevalence rates at four time intervals were calculated from the Alameda County Study (n = 5108). Logistic regression models analyzed risk factors from 1974 for 1994 incident hearing impairment.

Results. The prevalence of hearing impairment nearly doubled between 1965 and 1994. The increase was significantly greater for men. The higher incidence was associated with potentially high-noise-exposure occupations for men and with symptoms and conditions associated with ototoxic drug use for both men and women. Exercise was protective.

Conclusions. Given the serious health and social consequences of hearing impairment, its increasing prevalence is cause for concern. (*Am J Public Health.* 1997;87:440–442)

Introduction

Hearing impairment is significantly associated with multiple negative outcomes including depression, loneliness, altered self-esteem, and diminished functional status.[1–6] It is thus a significant public health issue.

Known causes of hearing loss are multiple. Hearing impairment increases with age, and the most common loss occurs at higher frequencies, making speech especially difficult to understand when there is background noise.[7] Noise itself is considered one of the most common causes of hearing loss in industrial countries, and data support an association between hearing loss and service/blue collar occupations in the United States[8–10]; however, the impact of noise may become less with age.[11] Other causes include pharmacotherapeutic agents, industrial chemicals, rapid changes in ambient pressure, and a number of medical conditions.[12–18] In this study we sought to quantify changes in the prevalence of hearing impairment over the last three decades in a representative sample of older adults and to investigate potential risk factors.

Methods

The subjects were participants in the Alameda County Study, a longitudinal investigation of health and mortality started in 1965.[19,20] The original 6928 subjects, who were selected by a random household survey in Alameda County, California, have been followed regardless of subsequent location.

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This paper was accepted September 16, 1996.