Konstantin G. Arbeev[1,2], **Alexander A. Butov**[2], **Kenneth G. Manton**[3], **Igor A. Sannikov**[2], **Anatoli I. Yashin**[1,3]

[1] *Max Planck Institut for Demographic Research, Rostock*
[2] *Ulyanovsk State University, Ulyanovsk*
[3] *Duke University, Sanford Institute for Public Policy, Durham*

Disability trends in gender and race groups of early retirement ages in the USA

Summary

Objectives: To analyse disability trends over the 1980s–1990s in gender and race groups of early retirement ages in USA.
Methods: Disability trends for white and black males and females aged 65–69 and 70+ are analysed using the 1982–1999 NLTCS. Disability is analysed at three levels (instrumental activities of daily living (IADL), activities of daily living (ADL), and institutionalisation).
Results: 1) A larger increase in proportions of non-disabled blacks aged 65–69 compared with whites and males compared with females. 2) Differences in disability trends among gender and race groups. 3) A faster absolute decline in non-institutionalised disabled aged 65–69. 4) A larger absolute decline and a smaller relative decline in proportions of disabled aged 70+ compared with 65–69. 5) A significant decrease in the proportion of ADL disabled blacks and an increase of ADL disabled white females in the age group 70+.
Conclusions: Americans aged 65–69 years manifest a significant improvement in health over the 1980s–1990s but the dynamics differs in gender and race groups. Possible reasons for these differences are discussed.

Keywords: **Disability – Gender – Race – Retirement – National long term care surveys.**

Changes in the prevalence of chronic disability in the US elderly population over the 1980s–1990s have been documented (Manton et al. 1997a; Manton & Gu 2001; Crimmins et al. 1997; Freedman & Martin 1998). Different data sources provide evidence on decline in disability in the last decade (Freedman et al. 2002). The changing health status of the US elderly population has possible associations with the future dynamics of Medicare policy and legislation (Singer & Manton 1998). The improvement in living conditions may shift "disability onset" towards more advanced ages (Manton 1989). Such a shift has policy implications: in a population growing older "the youngest" elders capable of working productively become an important reservoir of human capital. One direct consequence of such changes is the potential to increase retirement age. The 1983 amendments to the Social Security Act states that the normal retirement age for Social Security starts to increase this year (2003) from the current age of 65, to age 67, by 2027. Wittenburg et al. (2000) noted, several proposals to increase it to age 70 were considered. Current legislation does not schedule Medicare eligibility age to increase. However, significant health improvements at later ages are likely necessary for recent proposals to increase Medicare eligibility age (Manton et al. 1997b). Proposals to raise Medicare eligibility age were recently considered by the National Bipartisan Commission on the Future of Medicare. Two scenarios were suggested. The first assumes a gradual increase of Medicare eligibility age to 67 by 2025. The second suggests a gradual increase of eligibility age to 70 by 2029 (National Bipartisan Commission on the Future of Medicare 1999).

These facts indicate the importance of analyses of disability trends for persons in the age group 65 to 69 – a group which, in the context of the study we will refer to as the "early retirement group". Manton & Gu (2001) reported the race- and education-specific estimates of disability for 10-year age groups using the 1982–1999 National Long Term Care Surveys (NLTCS). They found that, at ages 65–74, declines in the proportion disabled for blacks show larger declines than for nonblacks. There was more improvement in blacks' disability rates for up to 12 years of education than for nonblacks. A large drop in the black institutional population in the 1999 NLTCS is observed compared with the 1994 survey. Those authors did not analyse gender-specific trends.

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Crimmins et al. (1997) report disability prevalence in five-year age groups for males and females in 1970, 1980 and 1990 using the National Health Interview Survey (NHIS). In this study, both males and females of early retirement ages (65–69) showed declines in the proportion of institutionalised 1970 to 1980 and 1980 to 1990. However, the proportion of non-institutionalised persons aged 65–69 with a limitation of activity increased 1970 to 1980 and declined (nearly to 1970 levels) 1980–1990 for both sexes. The authors did not consider race groups. Crimmins et al. (1999) examined trends in health and ability to work among the older working-age population using data from the NHIS 1982 to 1993. They found significant improvement in the ability to work for both men and women in the older working and younger retirement ages. They report similarity in improvement for racial and ethnic groups and across educational subgroups. They conclude the increase in age of full eligibility for Social Security benefits should be more than compensated for by the improved ability to work.

Jacobzone et al. (2000) investigated disability trends in several countries including the US. They report declines in proportions of institutionalised persons in age group 65–69 in Canada (1985 to 1991), France (1990 to 1994) and USA (1982 to 1994, NLTCS data) for males and females combined. They also present trends in the prevalence of severe disability in five-year age groups (65 to 80+) for males and females in several countries. The results indicate males aged 65–69 manifest more decline in disability than females. This is observed in the USA comparing the 1982 and 1994 NLTCS. The authors did not analyse race groups.

In this paper we analyse disability in gender and race groups of early retirement ages (65–69) in USA. Availability of five waves of NLTCS makes it possible to evaluate trends over a long time period (1982 to 1999) and address questions about changes in disability dynamics in the 1980s and 1990s in this age group. The 1982–1999 NLTCS data reveal differences among blacks and non-blacks with respect to different levels of disability (Manton & Gu 2001). We also check if there are differences with respect to different levels of disability among gender and race groups in early retirement ages.

Methods and data

The NLTCS examines health problems, functional limitations, disability, and use of long-term care in the elderly (age 65+) US population[1]. Five NLTCS waves were conducted in 1982, 1984, 1989, 1994, and 1999. These surveys contain longitudinal and cross-sectional data on a nationally representative sample of more than 40000 Americans aged 65+ at some point 1982–1999. Each round contains data on 17000–20000 eligible survivors. In each survey, 4000–7500 persons are classified as disabled living in the community or in institutions. The initial 1982 NLTCS sample was of Medicare enrollees aged 65+ drawn from 1982 Medicare files using a multistage sampling procedure. In the 1984–1999 NLTCS, a cohort sample of about 5 000 persons passing 65th birthday during the period since the previous survey was added to the surviving sample.

The NLTCS provides data on demographics, medical conditions, activities of daily living (ADL), instrumental activities of daily living (IADL), functional limitation, subjective health status, cognitive status and other. Primary information on persons' demographic data and disability status (ADL and IADL) is collected in a short preliminary questionnaire (screener). This is administered to all persons. The second, detailed, community questionnaire is given to eligible persons depending on their disability and residential status as reported on the screener. The institutional questionnaire is a detailed instrument administered to institutionalised persons in all surveys except the 1982 NLTCS. In general, a persons' status on the screener uniquely defines the detailed questionnaire to be delivered. Community non-disabled persons may receive either a community questionnaire depending on the sample component in the previous surveys or may be assigned to community questionnaire *a priori* to increase the sample of non-disabled persons. Not all community non-disabled persons are selected for the consecutive survey. Sub-sampling procedures are survey-specific.

Direct projection of NLTCS results to the US population is biased due to design effects. For example, estimates of proportions of disabled in age group 65+ in the 1994 and 1999 surveys are influenced by oversampling persons aged 95+ where the proportion of disabled is high but the supplemental size is small. Hence, to extend results to the US population, sample design effects should be taken into account. Different weights provided by the US Census Bureau and Center for Demographic Studies (CDS) at Duke University can be used for this purpose. We used CDS Screener Cross-Sectional Weights. This weight is a product of five components: screener base weight, screener non-interview adjustment factor, first stage factor, second stage factor, and detailed non-interview adjustment factor. Base weights were generated by the Census and reflect the probability of a sample person's selection from Medicare enrollment files for the NLTCS. This base weight is then adjusted for

[1] Detailed information on sample design and questionnaires are available online at http://www.cds.duke.edu/.

Table 1 Disability distribution (%, s.e. in parentheses) in age groups 65–69 and 70+ for white and black males

Age group	Disability status	White males					Black males				
		1982	1984	1989	1994	1999	1982	1984	1989	1994	1999
65–69	Non-disabled	89.77 (0.53)	91.22 (0.55)	92.10 (0.51)	92.10 (0.53)	94.19 (0.47)	80.39 (3.69)	82.08 (2.85)	83.43 (2.68)	82.90 (2.41)	88.68 (1.91)
	IADL only	3.23 (0.31)	2.93 (0.33)	2.07 (0.27)	2.45 (0.31)	1.50 (0.24)	7.06 (2.38)	5.25 (1.66)	2.96 (1.22)	4.40 (1.31)	3.83 (1.16)
	ADL	5.70 (0.40)	4.93 (0.42)	4.53 (0.40)	4.64 (0.42)	3.69 (0.38)	10.32 (2.83)	10.46 (2.28)	12.42 (2.38)	9.95 (1.92)	5.98 (1.43)
	Institutionalised	1.30 (0.20)	0.92 (0.16)	1.29 (0.18)	0.81 (0.15)	0.62 (0.13)	2.23 (1.37)	2.22 (0.92)	1.19 (0.65)	2.75 (0.88)	1.50 (0.61)
	All disabled	10.23 (0.53)	8.78 (0.55)	7.90 (0.51)	7.90 (0.53)	5.81 (0.47)	19.61 (3.69)	17.92 (2.85)	16.57 (2.68)	17.10 (2.41)	11.32 (1.91)
70+	Non-disabled	75.03 (0.68)	76.04 (0.65)	76.80 (0.62)	80.92 (0.54)	82.07 (0.50)	65.28 (2.52)	64.99 (2.57)	60.71 (2.76)	69.45 (2.27)	71.08 (2.14)
	IADL only	5.71 (0.36)	6.10 (0.37)	5.21 (0.33)	4.19 (0.28)	3.46 (0.24)	10.33 (1.61)	8.71 (1.52)	10.48 (1.73)	8.21 (1.35)	9.38 (1.38)
	ADL	13.41 (0.53)	12.50 (0.51)	12.40 (0.48)	10.22 (0.42)	11.34 (0.41)	20.72 (2.15)	21.93 (2.23)	22.50 (2.36)	18.00 (1.89)	15.81 (1.72)
	Institutionalised	5.85 (0.31)	5.36 (0.29)	5.50 (0.28)	4.67 (0.24)	3.13 (0.19)	3.68 (0.83)	4.37 (0.92)	5.18 (1.05)	4.35 (0.84)	3.73 (0.75)
	All disabled	24.97 (0.68)	23.96 (0.65)	23.11 (0.62)	19.08 (0.54)	17.93 (0.50)	34.72 (2.52)	35.01 (2.57)	38.16 (2.74)	30.55 (2.27)	28.92 (2.14)

Table 2 Disability distribution (%, s.e. in parentheses) in age groups 65–69 and 70+ for white and black females

Age group	Disability status	White females					Black females				
		1982	1984	1989	1994	1999	1982	1984	1989	1994	1999
65–69	Non-disabled	88.61 (0.49)	89.15 (0.54)	90.45 (0.50)	91.03 (0.51)	91.62 (0.51)	81.29 (2.99)	78.67 (2.72)	78.75 (2.50)	79.57 (2.20)	87.62 (1.74)
	IADL only	3.41 (0.28)	3.34 (0.31)	2.74 (0.28)	2.56 (0.28)	2.38 (0.28)	7.66 (2.04)	8.41 (1.84)	6.50 (1.51)	5.19 (1.21)	2.56 (0.83)
	ADL	6.64 (0.38)	6.35 (0.43)	5.75 (0.39)	5.62 (0.41)	5.60 (0.43)	10.40 (2.34)	11.62 (2.13)	12.58 (2.03)	13.41 (1.86)	9.22 (1.53)
	Institutionalised	1.34 (0.18)	1.15 (0.16)	1.06 (0.15)	0.78 (0.13)	0.39 (0.10)	0.65 (0.62)	1.31 (0.64)	2.16 (0.74)	1.83 (0.61)	0.59 (0.34)
	All disabled	11.39 (0.49)	10.85 (0.54)	9.55 (0.50)	8.97 (0.51)	8.38 (0.51)	18.71 (2.99)	21.33 (2.72)	21.25 (2.50)	20.43 (2.20)	12.38 (1.74)
70+	Non-disabled	66.30 (0.57)	65.53 (0.56)	65.90 (0.55)	68.92 (0.51)	70.93 (0.48)	57.27 (2.13)	54.46 (2.08)	53.88 (2.10)	63.75 (1.79)	64.30 (1.75)
	IADL only	6.44 (0.30)	6.97 (0.30)	5.53 (0.26)	5.03 (0.24)	3.95 (0.21)	9.51 (1.26)	14.29 (1.46)	10.45 (1.29)	7.55 (0.99)	7.22 (0.94)
	ADL	16.38 (0.44)	16.90 (0.44)	18.21 (0.45)	16.59 (0.41)	17.99 (0.41)	26.81 (1.90)	25.47 (1.82)	28.82 (1.91)	22.97 (1.57)	22.49 (1.52)
	Institutionalised	10.88 (0.31)	10.60 (0.30)	10.37 (0.29)	9.45 (0.27)	7.12 (0.23)	6.41 (0.88)	5.78 (0.82)	6.85 (0.89)	5.73 (0.72)	5.99 (0.72)
	All disabled	33.70 (0.57)	34.47 (0.56)	34.10 (0.55)	31.08 (0.51)	29.07 (0.48)	42.73 (2.13)	45.54 (2.08)	46.12 (2.10)	36.25 (1.79)	35.70 (1.75)

non-response to the screener interview, differences between the characteristics of the NLTCS sample non-self-representing primary sampling unit and the population in this unit based on the census frame from which the units were selected. Second-stage factors represent ratio adjustments to correct for differences between weighted sample counts of persons (using the previous weight components) and independent estimates of the total number of persons within age/sex/race groups. Independent estimates or "population controls" are projections based on Census Bureau population counts. The detailed non-interview adjustment factor accounts for participants who were scheduled for, but did not complete, a community or institutional detailed interview. The CDS screener weight may be used to produce cross-sectional estimates of the US population aged 65 years and older and to make estimates of the unimpaired, community dwelling impaired and institutionalised populations. Summing weights for the respective individuals produces estimates for the US population.

We analyse disability trends in different age/sex/race groups. To compare trends in wide age intervals across the surveys, we standardise results to US population estimates by sex and race for January 1, 1999 provided by the US Census Bureau[2]. Standard errors shown in tables are based on the generalised variance functions methods developed by the US Census Bureau for the 1999 NLTCS (US Bureau of the Census 2001). Standard errors are adjusted for sample design effects (Wolter 1985). Standard errors were also used to assess significance of differences between proportions in two groups.

Results

The numbers of disabled and non-disabled NLTCS respondents in age, sex and race groups are shown in Appendix. Computation of disability prevalence from these tables leads to results affected by sample design. Changes in population age structure over time as well as changes in gender/race decomposition of the entire population can influence disability trends in the total population. An analysis of the US Census Bureau data shows how the gender/race composition of the age group 65–69 changes over time. The proportion of females in this group gradually declines 1982 to 1999 as well as the proportion of whites (except for a minor increase 1982 to 1984). The proportion of blacks decreased 1982 to 1989 and increased in the 1990s (the same trend is observed for both black males and females). White males show minor changes over time whereas the proportion of white females declines steadily. We also examined proportions of the early retirement age group in the elderly population by gender/race groups. These proportions decline for all gender and race groups. These changes in population structure reflect the "ageing population" phenomenon. This process accelerated in the 1990s compared with 1980s as indicated by minor changes in the proportions in the 1980s and larger changes in the 1990s in the 65–69 group. Gender and race differences are observed. White females constitute the "oldest" population and black males the "youngest" with respect to proportions of the early retirement age group in the respective populations. Blacks do not demonstrate substantial differences between changes of the proportions in the 1980s and 1990s. Moreover, black males have a sizeable decline in proportions only 1994 to 1999. Overall, absolute differences 1982 to 1999 for whites are twice as large as differences for blacks. These observations show that, along with changes in population age structure over time, gender and race differences should be taken into account in analyses of disability in a population. Changes in gender and race composition can make substantial effect on trends in disability in the entire population.

We examined disability prevalence in gender/race groups aged 65–69 and 70+ (Tab. 1–2, Fig. 1). Increased proportions of non-disabled 1982 to 1999 are observed for all gender/race groups of early retirement ages. Changes are statistically significant at 0.05 levels for all groups. Absolute increases (1982 to 1999) in proportions of non-disabled blacks are nearly twice as large as whites. Absolute increases in the proportions of non-disabled males are 1.5 times larger than for females. The largest increase in the proportion non-disabled is observed for black males (10.3% relative increase 1982 to 1999). White females show the smallest increase (3.4% relative increase 1982 to 1999). There are also differences in disability trends between gender and race groups over the 1980s and 1990s. The proportion of disabled white males declines substantially 1982 to 1989 and 1994 to 1999 (relative decline 2.3% and 2.1%, per annum absolute decline 0.33 and 0.42, correspondingly) remaining constant between 1989 and 1994. Changes 1982 to 1989 and 1994 to 1999 are significant at 0.05 levels. White females show steady declines in the proportion of disabled over the 1980s and 1990s (changes 1982 to 1989 are significant at 0.05 level, changes 1989 to 1999 are significant at 0.1 level). The annual absolute decline is higher in the 1980s (0.26 in 1982–1989 vs 0.12 in 1989–1994 and 1994–1999). Proportions of disabled black males and females do not steadily decline 1982–1999. There is an increase in the proportion of disabled black males 1989 to 1994 and black females 1982 to 1989 and declines afterwards. For both black males and females the proportion

[2] Available online at http://www.census.gov/.

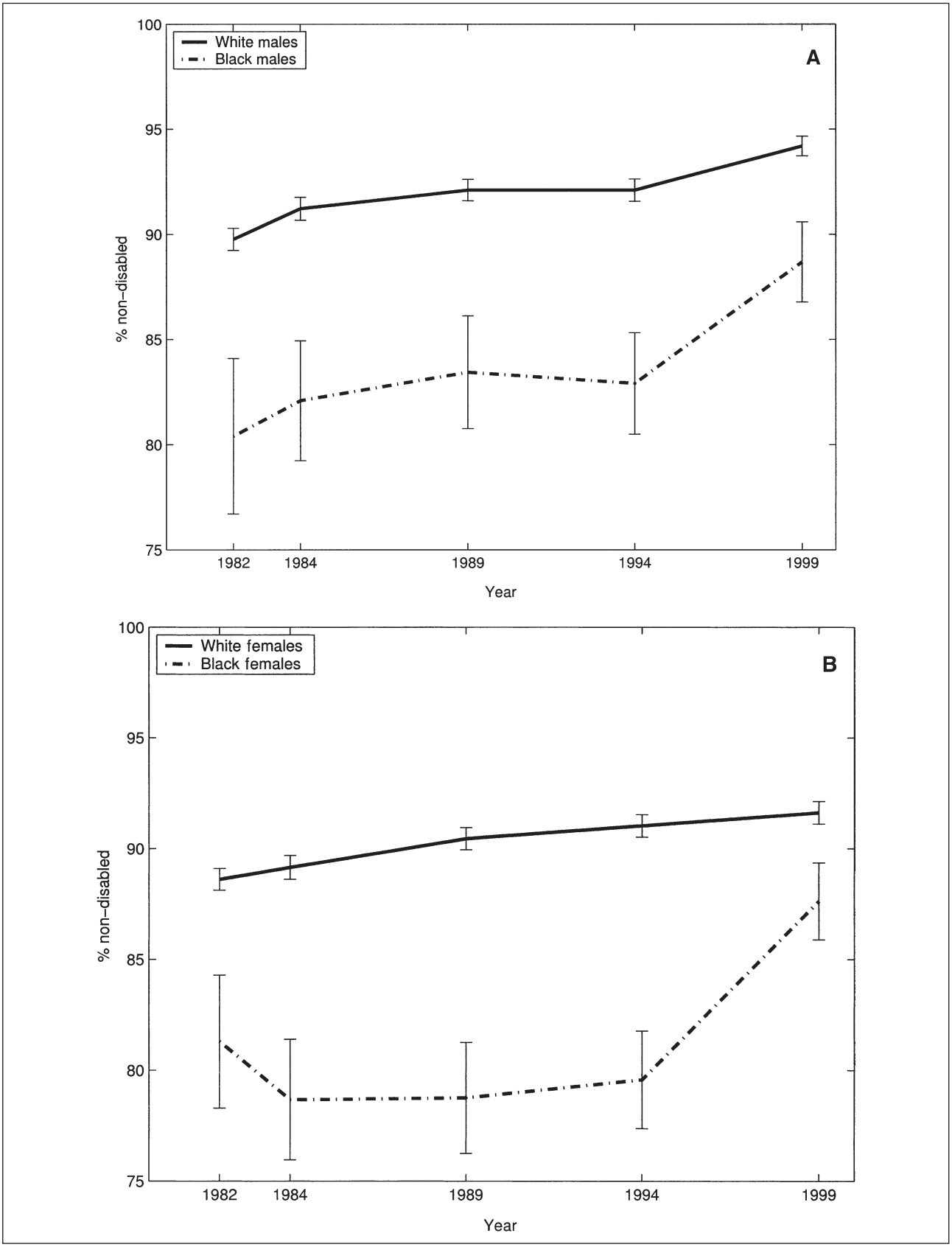

Figure 1 Percent (s.e.) of non-disabled in the early retirement age group (65–69) in the USA (data source: 1982–1999 NLTCS): (A) – males, (B) – females

disabled drops significantly 1994 to 1999 (1.2 and 1.6 of exact age points annual absolute decline, 33.8% and 39.4% relative decline, correspondingly). As Manton and Gu (2001) stressed, the estimated declines 1994 to 1999 for blacks are partly influenced by a lower response rate for blacks and effects of positive undercounts of blacks in the 1990 Census used to project the 1999 black population estimates.

Proportions at specific disability levels (IADL only, ADL and institutionalisation) also decline 1982 to 1999 in all gender/race groups. These changes are not statistically significant at 0.05 level for blacks (except IADL only disability for black females). White females manifest a uniform decrease (1982 to 1999) at all disability levels. Other groups are characterised by a faster decline in the proportion with IADL and ADL disability. The most pronounced absolute decline is observed for IADL only disability for black females (0.3 per year).

Trends in disability in the group age 70+ are similar to those in the younger group with some discrepancies. White and black males exhibit sharp declines in the proportion disabled 1989 to 1994 instead of "stagnation" or small increases as in the age group 65–69. The proportion disabled black males increased in the 1980s (0.49 per annum) as well as that of white females (0.06 annual increase). Changes are not significant at 0.05 level. Absolute annual changes 1982 to 1999 are larger in the age group 70+ in all gender/race groups except black males but the relative decline is much larger in the group aged 65–69 than in the complementary group (43.2% vs 28.2% for white males, 42.3% vs 16.7% for black males, 26.5% vs 13.7% for white females, and 33.9% vs 16.4% for black females). Analysis of disability at different levels shows a significant decline in ADL disability for black males and females 1982 to 1999. The proportion of disabled white males declines significantly at all disability levels 1982 to 1999 as well as proportions of IADL only disabled and institutionalised white females. The proportion of ADL disabled white females increased significantly 1982 to 1999 (absolute annual increase is 0.09).

In short, there is: a) a larger increase in proportions of non-disabled blacks compared with whites and non-disabled males compared with females in the early retirement age group; b) differences in disability trends over the 1980s and 1990s for gender and race groups; c) a faster absolute decline in non-institutionalised disabled in the age group 65–69; d) a larger absolute decline (1982 to 1999) and a smaller relative decline in proportions of disabled in the age group 70+ compared with 65–69; and e) a significant decrease in the proportion of ADL disabled blacks and a significant increase in the proportion of ADL disabled white females in the age group 70+ 1982 to 1999.

The main conclusion is that the Americans of the early retirement age group manifested significant improvements in health over the last two decades of the 20th century. Rates and dynamics of improvement differs over gender and race groups.

Discussion

The results indicate gender/race groups of early retirement ages in the USA differ with respect to changes in health 1980s–1990s. Causes of disability decline are widely discussed (Stuck et al. 1999; Cutler 2001). Below we outline factors that can be attributed to gender and race differences in disability in the early retirement age group.

Disability prevalence is determined by disability incidence – the intensity of recovering from disability and survival of disabled individuals. These processes are different in males and females. Manton (1988; 1997) show the incidence of disability is the same for males and females but females survived longer with disability. Oman et al. (1999) indicate the higher prevalence of physical disability among women could be explained by lower recovery and mortality rates. Leveille et al. (2000a) concludes mortality differences in men and women had only a modest impact on sex differences in mobility disability prevalence and incidence has the greatest impact on the higher prevalence of mobility disability in women compared with men. They investigated the US elderly population from three communities of the Established Populations for the Epidemiologic Studies of the Elderly (EPESE). In particular, they observed the higher prevalence of mobility disability for the age group 65–69 in women compared with men as we did in our study using a different definition for disability (ADL disability) and other data (NLTCS). The availability of long time series (e.g., 1982 to 1999) in the NLTCS allows us to check if the relation between the processes influencing disability prevalence in males and females changes over time. Additional study is necessary to reveal differences in these processes between gender and race groups of the early retirement ages. De Leon et al. (1997) investigated the risk of becoming disabled and recovering from disability for black and white elderly. They examined the influence of mortality, socio-economic status, and health-related factors on racial differences in risk of disability and recovery. Blacks below age 75 had a higher disability incidence, and mortality, relative to whites. There were no consistent racial differences in recovery from disability. In their study, in particular, blacks in the early retirement age group had significantly higher risks of developing disability compared with whites of these ages. This can result in the higher disability prevalence for blacks compared with whites

in this age group, as observed in our study. De Leon et al. (1997) examined the period 1982 to 1992 using data from two EPESE sites. NLTCS data can be used to address questions about race differences in disability incidence, recovery and mortality during the 1990s.

Manton (1989; 1997) argues differences can be explained by the different medical conditions responsible for disability in males and females. The main causes of disability are heart disease and stroke in elderly men and osteoporosis, fractures, arthritis, and peripheral circulatory disease in elderly women (Manton 1997). Leveille et al. (2000b) also consider a higher prevalence of non-fatal chronic conditions in females as an explanation of disability excess. They discuss other underlying causes for gender differences in the prevalence of disability such as constitutional factors (lower muscle strength and lower bone density) and higher risk of life style factors (sedentary behaviour and obesity). Wray and Blaum (2001) demonstrate no direct sex effect for ADL disability in either age group after adjusting for key covariates (social and health related). They show an indirect effect of sex on ADL disability in older adults via musculoskeletal conditions and depressive symptoms. Kessler (2003) argues depression is the leading cause of disease-related disability among women and that depression is more common among women than men, with female/male risk ratios roughly 2:1. Friedmann et al. (2001) demonstrate a different relation between body mass index (BMI) and self-reported functional limitation in males and females. Wray and Blaum (2001) also revealed an association of BMI with mobility difficulty in both sexes. The positive association of BMI with mobility difficulty was significantly larger for women than for men. To summarise, the underlying differences in the disablement process (and the related medical conditions) in males and females can be thought as one of the possible reasons for the observed differences in the rates of disability decline in the gender groups of the early retirement ages.

The association between race and disability prevalence was explained by lower socio-economic status in blacks as compared to whites (Stuck et al. 1999). Manton and Gu (2001) revealed the important contribution of differences in education to the observed gap in disability between blacks and non-blacks. Crimmins and Saito (2001) observed larger differences in disability due to education among race groups at younger ages. Manton and Gu (2001) argued trends in disability in the 1980s and 1990s are consistent with black and non-black educational trends. Education is related with other factors influencing disability such as healthy behaviours, e.g., maintaining physical activity at later ages, and reducing risk factor exposures such as smoking, improving nutrition and better medical care (Manton et al. 1997a; Crimmins et al. 1999; Cutler 2001).

Schoenbaum and Waidmann (1997) indicate race differences in socio-economic characteristics explain a substantial fraction, but not all, of race differences in health status. Zsembik et al. (2000) investigate race and ethnic variation in the disablement process. They reveal excess disability among African Americans stems from their higher level of cognitive limitation. The article demonstrates the importance of cognitive status in disablement, especially for ethnic group differences. Dunlop et al. (2002) state differences in the prevalence of chronic conditions appear to explain why moderate functional limitation incidence rates are higher in blacks. White-Means (2000) observe that, with similar medical conditions, blacks are less likely to use services, particularly prescription medications and physician services. She concluded that, for reasons unrelated to financial assets, blacks remain vulnerable in their ability to access services commonly used by older persons. Manton and Gu (2001) attribute changes in institutionalisation and home health services use in the 1990s to changes in US legislation. The observed decline in the black institutional population in the 1990s can be associated with the probable effects of these changes. Overall, our observations of disability decline for blacks of the early retirement ages can partly reflect over time trends in availability of service use as well as changes in socio-economic characteristics of blacks. Additional investigations on over time trends in socio-economic indicators, cognitive functioning and service use in the race groups of the early retirement ages are necessary to make conclusions on the relative contribution of these factors into the decline in disability.

Ethnic differences in pain tolerance may contribute to racial differences in disability. Edwards et al. (2001a) show African Americans demonstrate less ischaemic pain tolerance than whites. Analyses revealed a small but significant inverse relationship between ischaemic pain tolerance and the reported severity of chronic pain. African Americans also reported greater pain-related disability than whites. Various studies reveal greater sensitivity to experimental pain stimuli among African–Americans compared to Caucasians (Edwards et al. 2001b).

Recent studies provide evidence disability may be prevented by moderate physical activity. Leveille et al. (1999) found an increased likelihood of dying without disability in the most physically active group compared with sedentary adults. Wang et al. (2002) concluded running and other aerobic exercise in elderly persons protect against disability and early mortality, and are associated with prolongation of disability free life. Brill et al. (2000) suggest maintenance of strength throughout life may reduce the prevalence of functional

limitations. No consistent racial differences were observed in the relation of physical activity and muscle strength, or muscle strength and disability (Rantanen et al. 1998). Clark (1996) observed differences in the effects of walking on lower body disability in older blacks and whites. Walking had a greater protective effect in blacks.

Various factors reducing disability prevalence at early retirement ages lead to a major consequence for the labour market: improvement in work ability of early retired persons. A potentially extended working life span and an increased life expectancy (along with low fertility rates as in case of the European Union countries) can be regarded as the possible contributors to the legislated rise of the normal retirement age (Tolley & Manton 1996; Crimmins et al. 1999). As Waidmann and Manton (2000) emphasise, analysis of trends in sub-populations (e.g., gender and race groups) is crucial because of changes in the elderly population over the next decades. This helps reveal how much of the trends in disability in the entire elderly population are due to demographic changes and due to changes in group-specific disability. Knowledge of particular trends in group-specific disability for the early retirement ages can help make conclusions on future dynamics of health status in these groups in long run. These trends, as our study shows, are likely to differ in the groups. This can have implications for future dynamics of the retirement ages, e.g., for gender groups.

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Zusammenfassung

Behinderungstrends in Geschlechts- und Rassengruppen im früheren Rentenalter in den USA

Fragestellung: Analyse der Behinderungstrends innerhalb von 1980 bis 1990 in den Geschlechts- und Rassengruppen im früheren Rentenalter in den USA.

Methode: Behinderungstrends für weisse und schwarze Männer und Frauen werden auf Basis der NLTCS-Daten von 1982 bis 1999 analysiert. Die Behinderung wurde auf drei Ebenen (Instrumentalaktivitäten des alltäglichen Lebens (IADL), Aktivitäten des alltäglichen Lebens (ADL) und Einrichtungseinweisung) analysiert.

Ergebnisse: 1) Ein stärkerer Anstieg des Anteils von nicht behinderten Schwarzen im Alter von 65 bis 69 gegenüber den Weissen und von den Männern gegenüber den Frauen. 2) Unterschiede der Behinderungstrends in Geschlechts- und Rassengruppen. 3) Ein rascherer absoluter Rückgang des Anteils von nicht in Einrichtungen behandelten Behinderten im Alter von 65 bis 69. 4) Ein stärkerer absoluter Rückgang und ein geringerer relativer Rückgang des Anteils von Behinderten im Alter ab 70 gegenüber denen im Alter von 65 bis 69. 5) Eine signifikante Abnahme des Anteils der ADL-behinderten Schwarzen und Anstieg des der ADL-behinderten weissen Frauen in der Altersgruppe ab 70.

Schlussfolgerung: Amerikaner im Alter von 65 bis 69 weisen eine signifikante Gesundheitsbesserung auf, die Entwicklung in Geschlechts- und Rassengruppen ist aber unterschiedlich. Mögliche Gründe von diesen Unterschieden werden besprochen.

Résumé

Evolution de l'incapacité selon le sexe et la race chez les „jeunes" retraités aux USA

Objectifs: Il s'agit d'analyser l'évolution de l'invalidité durant les années 1980 et 1990 dans des différents groupes de „jeunes" retraités aux USA.

Méthodes: L'évolution de l'invalidité entre les hommes et les femmes, noirs et blancs, âgés de 65 à 69 ans ou de 70 ans et plus, est analysée à partir de NLTCS (1982–1999). L'invalidité est examinée selon trois niveaux (activités instrumentales de la vie quotidienne, activités de la vie quotidienne (ADL) et entrée en institution).

Résultats: 1) Une augmentation plus importante de la proportion des noirs sans invalidité chez les 65 et 69 ans en comparaison avec les blancs de la même classe d'âge, ainsi qu'une augmentation de la proportion des hommes sans invalidité par rapport aux femmes. 2) Des différences dans l'évolution de l'invalidité selon le sexe et l'appartenance ethnique. 3) Une diminution plus rapide, en termes absolus, de l'invalidité non institutionnalisée chez les 65–69 ans. 4) Une diminution plus rapide en termes absolus, mais moins rapides en termes relatifs, de la proportion de personnes ayant une invalidité lorsqu'elles sont âgées de 70 ans et plus en comparaison avec les 65 et 69 ans. 5) Une diminuation significative de la proportion de blanches ADL âgées de plus de 70 ans.

Conclusions: La santé des Américains âgés de 65–69 ans s'est améliorée de manière significative durant les années 1980–1990, mais les dynamiques de changement sont différentes selon le sexe et le groupe ethnique d'appartenance. Des hypothèses d'interprétation sont alors proposées.

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Address for correspondence

Prof. Anatoli I. Yashin, Sc.D.
Max Planck Institute for Demographic Research
Konrad-Zuse-Str. 1
D-18057 Rostock
Tel.: +49 381 2081 106
Fax: +49 381 2081 406

Appendix

Numbers of white and black males and females with different disability status in the 1982–1999 NLTCS

Age group	Disability status	White males					Black males				
		1982	**1984**	**1989**	**1994**	**1999**	**1982**	**1984**	**1989**	**1994**	**1999**
65–69	Non-disabled	1789	2829	1844	1409	1966	114	182	119	106	156
	IADL only	128	102	39	37	32	20	14	3	6	7
	ADL	218	184	85	72	77	28	28	15	13	10
	Institutionalised	57	38	28	12	19	7	7	2	5	6
	All disabled	403	324	152	121	128	55	49	20	24	23
	Total	**2192**	**3153**	**1996**	**1530**	**2094**	**169**	**231**	**139**	**130**	**179**
70+	Non-disabled	2857	3014	2592	3419	3124	220	213	154	191	165
	IADL only	407	346	236	218	160	63	39	38	20	17
	ADL	896	752	564	508	576	118	114	85	69	48
	Institutionalised	428	352	277	270	181	26	23	24	29	23
	All disabled	1731	1450	1077	996	917	207	176	147	118	88
	Total	**4588**	**4464**	**3669**	**4415**	**4041**	**427**	**389**	**301**	**309**	**253**
Age group	**Disability status**	**White females**					**Black females**				
		1982	**1984**	**1989**	**1994**	**1999**	**1982**	**1984**	**1989**	**1994**	**1999**
65–69	Non-disabled	2229	3437	2310	1740	2171	174	207	150	119	208
	IADL only	172	149	70	49	56	32	27	12	8	6
	ADL	324	294	145	111	133	42	40	22	21	22
	Institutionalised	75	62	30	19	13	3	4	4	4	2
	All disabled	571	505	245	179	202	77	71	38	33	30
	Total	**2800**	**3942**	**2555**	**1919**	**2373**	**251**	**278**	**188**	**152**	**238**
70+	Non-disabled	4309	4431	3719	4859	4488	286	289	222	281	247
	IADL only	796	669	417	408	310	95	113	68	47	33
	ADL	1894	1792	1507	1406	1466	254	225	195	155	130
	Institutionalised	1317	1216	923	922	731	68	60	56	59	63
	All disabled	4007	3677	2847	2736	2507	417	398	319	261	226
	Total	**8316**	**8108**	**6566**	**7595**	**6995**	**703**	**687**	**541**	**542**	**473**