

Race/Ethnic and Nativity Differentials in Functional Limitations during Middle and Late-Life

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Mortality and ADL/IADL disability research consistently indicates substantial differences in mortality and more recently disability by race/ethnicity and nativity among the older U.S. population (Hummer and Chinn, 2011; Elo et al., 2011; Hayward & Heron, 1999). However, less research focuses on more subtle physical limitation measures across race/ethnic groups for both foreign-born and U.S.-born individuals in mid and late life. Yet, these variations in physical limitations illustrate specific patterns that ultimately lead to differentials in disability and mortality by race/ethnicity, nativity, and gender.

The disablement model presented by Nagi (1976) has proven to be a powerful framework of disablement as a process rather than simply the inability to perform socially expected roles (ADL/IADL disability). Nagi's framework denotes a pathway in which disablement starts with a pathology or impairment in the body. This impairment in turn leads to task oriented limitations and depending on many factors, becomes a disability once a person cannot perform socially expected roles in their environment (Verbrugge & Jette, 1993). Thus, measuring earlier points in the disablement process can help us document task oriented (rather than relational) limitations across diverse groups and better understand how this process occurs differently across mid and late life for disadvantaged minority groups as well as the foreign-born population.

Thus, our paper addresses the extent to which functional limitations differ by race/ethnicity and nativity among U.S. adults in mid and late life. We document measures of functional limitations using a 10-point scale based on Nagi's framework. Data for this study is drawn from fifteen years (1997 - 2011) of the National Health Interview Survey (NHIS), a cross-sectional, nationally representative survey, conducted each year by the National Center of Health

Statistics. We examine ten indicators of functional limitations included for sample adults aged 45 and above. Sample respondents were asked about the amount of difficulty they had (without using technology) walking 1/4 of a mile, walking up 10 steps without resting, standing for two hours, sitting for two hours, reaching over their head, stopping/bending/kneeling, grasping/handling small objects, carrying 10 pounds, moving large objects by pushing/pulling, and participating in social activities outside the home. Responses to these items were combined with the maximum set at 10 limitations. Respondents who reported any difficulty with a task were coded with the corresponding limitation. Appropriate sample weights were applied.

Because we are interested in functional limitation patterns as early as mid-life as well as patterns of change by age, all individuals age 45 or over were included in our analytic sample. To capture how disability patterns change by age, we include five age categories that allow for reasonable cell sizes and that encompass early middle through late life: 45-54, 55-64, 65-74, 75-84, and 85 years and older. Race/ethnicity and nativity are self-reported. All individuals who self-identified as Hispanic, regardless of race, were classified as Hispanic. Because many of these groups had very small sample sizes, we classified individuals who identified as Hispanic as Mexican, Puerto Rican, Cuban or "other Hispanic" origin. The other race/ethnic groups we include are Asian Americans, non-Hispanic blacks, and non-Hispanic whites. Respondents were also asked whether they were born in the United States or not and this indicator was used to determine nativity. Each race/ethnic group, then, is further subdivided by nativity. Altogether, there are 12 race/ethnic nativity sub-groups with a total of 202,493 respondents.

Analytically, we assessed the prevalence of one or more functional limitations by race/ethnic/nativity and gender and then analyzed the prevalence ratio for each group compared to non-Hispanic whites. , Secondly, we assessed the mean number of functional limitations (the

count) by race/ethnicity and nativity, specific to age group and gender and test to determine whether the mean number of functional limitations reported by respondents differs by race/ethnicity/nativity within each age group, with the reference category specified as non-Hispanic whites. Then we attempt to gauge the severity of the reported functional limitations using the entire range of 0-4 for all 10 of the functional limitation indicators. This gave us a total of 40 as a maximum (indicated complete limitation in for every functional limitation indicator) and 0 as the minimum (respondents who experience no level of limitation for any of the 10 indicators). Together, these three methods give us the overall prevalence, number of functional limitations, and severity of limitations by race/ethnicity and nativity, stratified by gender.

We feel this approach have implications for how we should measure functioning more generally to compare groups. Ultimately, information differentials in functioning and aging for major sub-groups will inform health policy for our rapidly aging and increasingly diverse society.

References

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Table 1: Weighted Average of Functional Limitations by Race, Ethnicity, Nativity, Age, and Gender, U.S., 1997-2011

FEMALES													
AGE	MEX FB	MEX US	PR ISL	Cuban FB	HISP FB	HISP US	ASIAN FB	ASIAN US	BL FB	BL US	WH FB	WH US	Total
45-54	1.17**	1.72**	2.06**	0.93**	1.02**	1.77**	0.74**	0.94**	1.05**	2.00**	1.22*	1.42	1.47
55-64	2.07	2.49**	3.25**	1.67**	2.07	2.44**	1.22**	1.52**	1.71*	2.82**	1.52**	2.04	2.11
65-74	3.38**	3.00**	3.49**	2.23	2.36	2.85*	2.21*	1.62**	2.87	3.40**	2.35*	2.57	2.87
75-84	4.26**	4.21**	4.69**	3.07	4.25**	4.63**	4.07*	3.12	4.34**	4.58**	3.36	3.50	3.60
85+	5.71*	5.80*	6.56*	5.38	6.15**	5.30	6.22*	4.60*	5.81*	6.28**	5.27	5.28	5.34
N	3,587	3,620	1,232	1,345	2,636	1,511	2,732	692	1,217	14,767	4,009	76,641	113,989
MALES													
AGE	MEX FB	MEX US	PR ISL	Cuban FB	HISP FB	HISP US	ASIAN FB	ASIAN US	BL FB	BL US	WH FB	WH US	Total
45-54	0.63**	1.25**	1.68**	0.72*	0.56**	1.21**	0.39**	0.55**	0.55**	1.23**	0.63**	0.96	0.97
55-64	1.21*	1.74**	2.17**	0.94*	0.91**	2.00**	0.71**	0.70**	0.87*	2.02**	1.03**	1.43	1.48
65-74	2.02	1.89	2.47**	1.21**	1.50	1.86	1.17**	1.78	1.46	2.16**	1.33**	1.81	1.86
75-84	2.66*	3.30**	3.88**	2.96*	2.33	3.00*	2.44	1.73*	2.68	3.52**	2.49	2.58	2.61
85+	5.46*	3.85	5.81**	3.30	6.29**	3.51	6.15**	3.72	5.89**	4.44*	3.62	3.99	4.04
N	3,195	2,757	874	930	1,802	1,112	2,291	638	1,006	10,008	2,872	61,019	88,504

*p < 0.05 **p < 0.01

Source: Integrated Health Interview Survey, 1997-2011