

# MR/DD Data Brief

October 2001  
Vol. 3 • No. 3

Research and Training Center on Community Living • Institute on Community Integration (UAP)

## Functional Limitations of Adults in the U.S. Non-Institutionalized Population: NHIS-D Analysis

### Introduction

The Disability Supplement (NHIS-D) to the 1994 and 1995 National Health Interview Surveys provides a rare opportunity to identify and compare groups of Americans with different

While an estimated 1.5 million adults with MR/DD experienced substantial functional limitations acquired before age 22 (0.8% of the adult U.S. population), 10 times that many adults without MR/DD – 15.4 million – experienced substantial functional limitations in one or more major life activities in adulthood (8.1% of the adult U.S. population).

types and degrees of disability on a wide range of demographic, health status, functional, socio-economic, and other factors. The vast majority of the available research on adults with disabilities is focused on subgroups of adults with specific types of disabilities and/or persons who are identified by being the recipients of particular types of services. Information on adults with disabilities within the general household population — that is, persons living in non-specialized (“non-institutional”) housing — has been available from several national household surveys, including the National Health Interview Survey, the Medical Expenditure Panel Survey, and the Survey of Income and Program Participation. These surveys have been limited, however,

in the comprehensiveness of information gathered about adults with disabilities and, as a result, in their capacity for identifying and grouping persons by number, severity, and/or nature of conditions causing limitations in major areas of daily activity.

### About This *Data Brief*

In 1994 and 1995, the National Health Interview Survey included a Disability Supplement (NHIS-D) that collected extensive information about disabilities among the individuals sampled as part of the annual census-based household interview surveys. The NHIS focuses on the civilian, non-institutionalized population, describing demographic characteristics, health status, functional limitations, and supports and services used.

We identified 1,116 adults in the combined 1994/1995 NHIS-D sample as having mental retardation and/or developmental disabilities (MR/DD), estimating that 1,495,183 (+/- 3.2%) non-institutionalized adult Americans meet the criteria for one or both of these categories. We also identified 12,078 adults who had substantial functional limitations in one or more of seven major areas of life activity, but who did not meet the criteria for having MR/DD. We estimate that 15,428,317 (+/- 1.48%) non-institutionalized adult Americans have substantial functional limitations, but not MR/DD. This *MR/DD Data Brief* compares the demographic characteristics, health status, functional limitations, and perceived disability status for adults in three MR/DD groups with those of adults with functional limitations only and those of adults with no substantial functional limitations.



The College of Education  
& Human Development  
UNIVERSITY OF MINNESOTA

Most research on disability is designed to support societal commitments to improve treatment of, service delivery to, understanding of, and quality of life of adults within established categories of disability. This reflects specialization in professional supports, advocacy, and policy, and results in a literature on disability that conforms to the organization and issues that are defined by specific conditions, types of services, and/or enabling policies. This is an understandable and even pragmatic tendency, but it is one that may overlook similar challenges and needs among adults with different “types” of disabilities.

This *MR/DD Data Brief* examines similarities and differences among four groups of adults (persons ages 18 and older) with disabilities: 1) persons with intellectual disabilities but not developmental disabilities (persons with mental retardation, MR not DD), 2) persons with developmental disabilities but not intellectual disabilities (DD not MR), 3) persons with both intellectual and developmental disabilities (MR and DD), and 4) persons with functional limitations (excluding those with intellectual and developmental disabilities, FLs only). We also compare characteristics of individuals with onset of disability before age 22 (as specified as a part of the definitions of mental retardation and developmental disability) and adults with onset of disability at age 22 or older.

## Methodology

### Sample

In both 1994 and 1995, a special supplement was appended to the National Health Interview Survey (NHIS) to gather nationally representative information on non-institutionalized persons with disabilities who were identified as part of the annual NHIS sample of approximately 108,000 persons in 48,000 households. This special Disability Supplement (NHIS-D) gathered more specific information than the NHIS “Core” survey on diagnostic, functional, social, and behavioral characteristics; service needs and use; and general circumstances and experiences of sample members with disabilities.

The NHIS-D was conducted in two phases. Phase I was completed at the time of the initial NHIS household survey with reference to all household members. The regular NHIS Core and NHIS-D Phase I supplemental data were used to

identify persons with disabilities to be included in Phase II follow-back interviews, which typically occurred three to eight months after the initial household visit. Separate Phase II interviews were developed for children and adults, and included detailed questions about in-home and out-of-home social and health services; housing and family structure; and physical, emotional, and social functioning of sample members. The analysis presented in this *Data Brief* is based on items from the core survey and the Phase 1 Disability Supplement.

One of the strengths of the NHIS-D is its two-year time span, which allowed more reliable sampling of low-incidence disabilities. This was particularly important to efforts to identify and estimate the numbers of adults with MR and DD. To use this strength in this analysis, we combined the 1994 and 1995 NHIS samples, dividing the final population weights by two before computing the reported estimates.

### Definitions

To conduct this analysis of the disability status of adults with MR, DD, and functional limitations, it was necessary to establish operational definitions of the groups. Adults were defined as persons 18 years and older. The operational definitions of MR and DD corresponded to established definitions (Larson et al., 2001). The group defined as having functional limitations was defined as persons having a substantial functional limitation in one or more of seven areas of major life activity. Specific definitions follow:

- **Mental Retardation.** Mental retardation was identified among sample members when a) people were identified by household respondents as having MR from a condition listing; b) MR was cited as the cause of age-specific general activity limitations, limitations in specific skill areas (e.g., communication), or reasons for receiving special services; and/or c) people were reported to have primary conditions that were highly related to MR (e.g., autism, cerebral palsy, Down syndrome, hydrocephalus) and were also reported to have limitations in major life activities and substantial limitations in the area of learning.
- **Developmental Disability.** Developmental disability (DD) was identified among sample members when specific items within the NHIS-

D identified the person as “unable” to or as having “serious difficulty” in performing independently in three or more of seven areas of major life activity: self-care, expressive or receptive language, learning, mobility, self-direction, capacity for independent living, and economic self-sufficiency, with the disability first evident before age 22 and expected to endure for longer than a year. (The definition of developmental disabilities in PL 103-120 specifies that limitations be “expected to endure indefinitely.” The closest approximation for this specification in the NHIS-D is “longer than a year.”)

- **Both Mental Retardation and Developmental Disability.** Adults who met the criteria for both MR and DD were included in a category labeled “Both MR and DD.”
- **Functional Disability.** Functional disability was identified among sample members according to the same operational specifications as given in the definition of DD (see above), except that it included sample members with: a) a substantial functional limitation one or more of seven areas of major life activity (as opposed to three in the DD definition), and b) any age of onset (not limited to prior to age 22 as in the DD definition).

A detailed description of the specific operational definitions contained in these definitions is contained in *MR/DD Data Brief: Prevalence of Mental Retardation and/or Developmental Disabilities: Analysis of the 1994/1995 NHIS-D* (Vol. 2, No. 1). (See back page of this document for information on how to order this publication.)

## Statistical Analysis

We conducted Chi-square analyses of group differences using the SUDAAN statistical package, which allows analyses to account for both the effects of the weighting of data and the complex sampling design used in the NHIS-D (Shah, Barnwell, & Bieler, 1997). Where we provide population estimates, we calculated the standard error of estimate using SUDAAN. We present standard error as relative standard error (RSE), which was computed by dividing the standard error of estimate by the population estimate and multiplying the result by 100. Because the NHIS-D is administered to a sample of people from the population rather than to every person in the U.S., we can only use its findings to estimate of the true

number of persons in the population with the characteristics being reported. Adding and subtracting the RSE to and from the population estimate indicates the range of values into which the true population value can be expected to fall 68 times out of 100. Ninety-five times out of 100 the true population value for a characteristic will be within the range identified as plus or minus twice the standard error. As the RSE increases, the precision of the estimate decreases and our confidence about the estimate decreases. By convention, RSEs exceeding 30% (indicated in the tables contained in the report) are considered unreliable (Adams & Marano, 1995). RSEs for results reported as percentages are available upon request.

## Results

### Prevalence of Disability

In the 1994 and 1995 NHIS-D, a total of 145,007 adults were surveyed (see Table 1). Of the adult U.S. population of 190,413,888, an estimated 173.5 million (RSE = 0.97) met none of the operational definitions of conditions employed in this study. Of the estimated 16.9 million adults who had disabilities, an estimated 15.4 million had one or more substantial functional limitations, but did not have MR or DD (81.03 per 1,000); 386,263 had MR but not DD (2.03 per 1,000); 606,023 had both MR and DD (3.18 per 1,000); and 502,897 had DD but not MR (2.64 per 1,000). Of all the adults identified as having MR, DD, or a substantial functional limitation in a major life activity, only 8.8% had MR or DD. The estimated number of adults who had three or more functional limitations but not MR or DD (i.e., with onset in adulthood) was 3,204,168, about twice the number of adults with MR/DD (1,495,183).

### Age by Disability Group

Table 2 shows the estimated prevalence and percentage of total estimated prevalence of the groups by age category. There were notably different patterns among the groups in age distribution. Persons in the mental retardation and/or developmental disabilities groups (MR/DD) exhibited generally similar age distributions except that there were lower proportions of persons with both MR and DD in the oldest age categories (55-64 years and 65 and older). Among adults with functional limitations but not MR/DD, the age dis-

tribution was very different from those of both the non-disabled group and the MR/DD groups. The proportion and prevalence of persons with functional limitations but not MR/DD increased in each successive age grouping, with nearly half of the members of this group being 65 years or older (46.4%). Adults with MR/DD are disproportionately represented in the younger age groups with the percentage under 44 ranging from 68.3% for adults with DD but not MR to 75.5% for adults with both MR and DD. Differences across these groups were statistically significant ( $X^2 = 2,878.8$ ,  $p < .001$ ). Among individuals with disabilities who were age 65 or older, 98.4% had one or more functional limitations but not MR/DD. Among individuals with disabilities who were ages 18 to 24 years, 75.1% had one or more functional limitations but not MR/DD.

Figure 1 shows the proportion of each disability group that fell into the six age categories. Among adults with no substantial functional limitations, the age groups with the most people were 25-34 years and 35-44 years. However, among adults with one or more functional limitations but not MR/DD, the numbers grew for each age group, with the 65+ year old group having the most people.

### Age at Onset for Substantial Functional Limitations

The distinctions between the functional disability only group and the MR/DD groups were based not only on the number of substantial functional

limitations (i.e., inability or substantial difficulty in performing the tasks of major life activities) but also whether these limitations were acquired before or after age 22. Table 3 identifies the seven major life activities and selected associated skills making up the definition of “substantial functional limitations” and identifies the estimated number of adults with each substantial limitation by age of onset (before age 22 and age 22 or later). Categories of limitations are in order from highest to lowest prevalence overall, and specific limitations within each category are also sorted from highest to lowest prevalence. Overall, the most common type of substantial functional limitation among adults was in independent living with 54.33 per 1,000 adults reporting a substantial functional limitation. The other categories of substantial functional limitation in order from most to least common were economic self-sufficiency (42.99 per 1,000 adults), mobility (25.70 per 1,000), self-direction (16.30 per 1,000), learning (15.65 per 1,000), communication (13.49 per 1,000), and personal care (12.37 per 1,000).

The distribution of estimated populations within the functional limitation categories varied dramatically by age of onset. Of all adults with a substantial functional limitation in learning, 96.6% acquired their limitation before the age of 22 years. An estimated 77.0% of adults with a substantial functional limitation in self-direction acquired it before the age of 22 years. In other categories, the proportions of persons with functional limitations who acquired them before age 22

Table 1: Prevalence of Selected Conditions for Adults in the 1994/1995 NHIS-D

Group	Sample Size	Estimated Population	Relative Standard Error (RSE)	Prevalence per 1,000
<b>No FLs</b>	131,813	173,490,388	1.0	911.12
<b>FLs<sup>a</sup> Only</b>	12,078	15,428,317	1.5	81.03
1 or 2 FLs	9,506	12,224,149	1.6	64.20
3 or more FLs	2,572	3,204,168	2.4	16.83
<b>MR/DD</b>	1,116	1,495,183	3.2	7.85
MR not DD	289	386,263	6.1	2.03
MR and DD	453	606,023	5.9	3.18
DD not MR	374	502,897	6.3	2.64
<b>Total</b>	145,007	190,413,888	0.9	1000.0

<sup>a</sup> FLs = Functional Limitations

Table 2: Age Groups for Adults by Disability Group

Age	MR not DD		MR and DD		DD not MR		FLs <sup>a</sup> Only		No FLs		X <sup>2</sup>
	%	Est. N	%	Est. N	%	Est. N	%	Est. N	%	Est. N	
18-24	24.0	92,780	24.0	145,263	18.4	92,553	6.4	994,678	13.7	23,781,340	2,878.8***
25-34	26.2	101,327	27.9	169,142	23.5	118,306	8.7	1,338,774	22.7	39,345,300	
35-44	20.9	80,706	23.6	142,861	26.4	132,619	11.7	1,804,791	22.9	39,769,099	
45-54	11.1	42,823	15.2	92,080	13.7	68,822	12.4	1,919,266	16.3	28,193,792	
55-64	8.2	31,831	5.9	35,779	6.6	33,411	14.4	2,216,127	10.6	18,425,103	
65+	9.5	36,795	3.4	20,896	11.4	57,193	46.4	7,154,679	13.8	23,975,752	

\*\*\* p < .001

<sup>a</sup> FLs = Functional Limitations

<sup>b</sup> RSE = Relative Standard Error

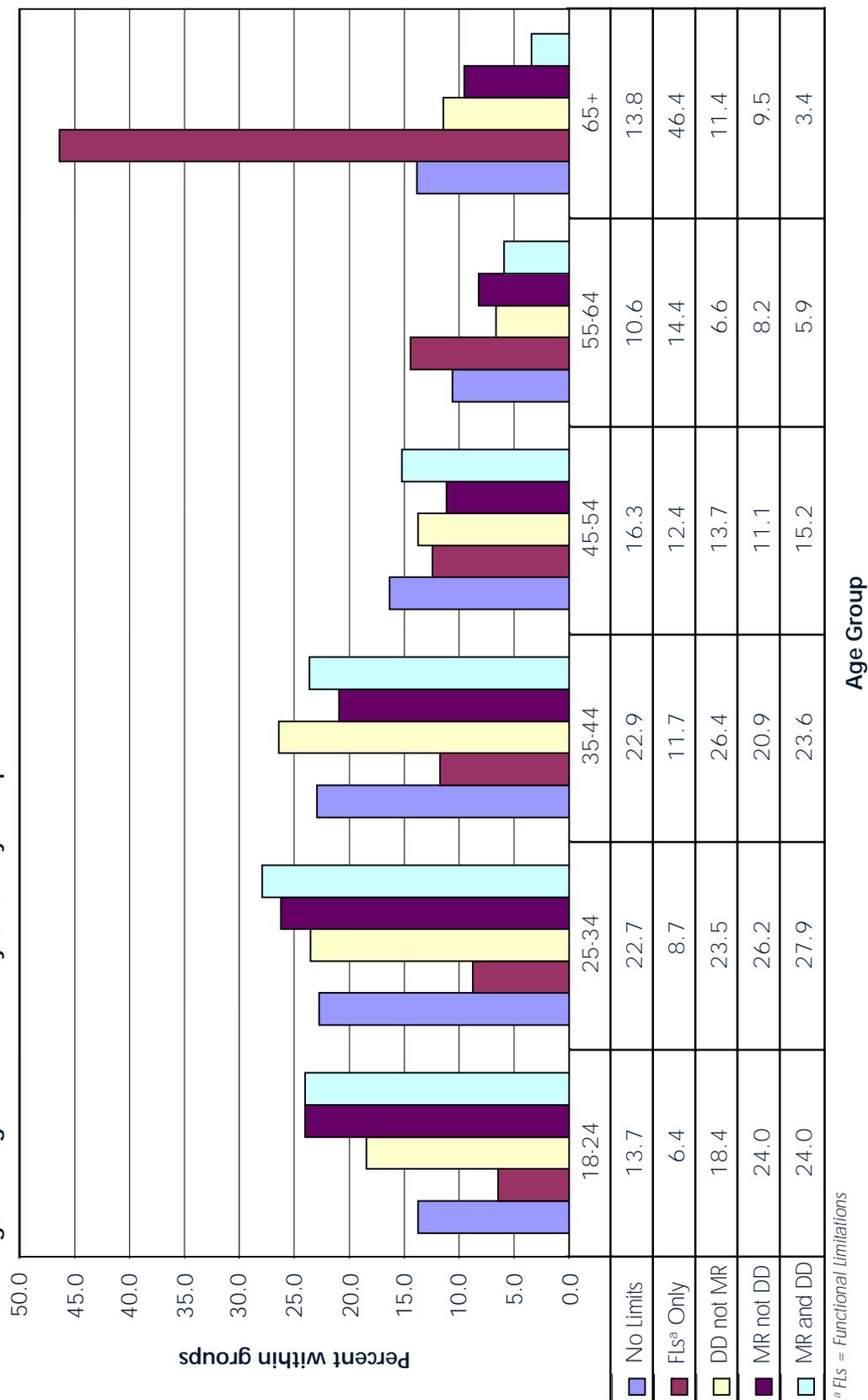
Table 3: Functional Limitations Among Adults by Age at Onset

Limitation	Before Age 22			Age 22 or Later			Total		
	Est. N	RSE <sup>a</sup>	Per 1,000	Est. N	RSE	Per 1,000	Est. N	RSE	Per 1,000
<b>Independent Living</b>	1,041,519	3.98	5.47	9,303,741	1.73	48.86	10,345,260	1.67	54.33
Heavy housework	653,668	5.05	3.43	8,896,462	1.76	46.72	9,550,130	1.73	50.15
Shopping	499,442	6.02	2.36	3,355,735	2.30	17.62	3,855,177	2.17	20.25
Doing light housework	228,243	8.85	1.20	2,679,583	2.60	14.07	2,907,827	2.53	15.27
Preparing meals	348,391	7.05	1.83	1,971,106	3.00	10.35	2,319,497	2.80	12.18
Managing money	563,912	5.59	2.96	1,619,080	3.41	8.50	2,182,993	2.94	11.46
<b>Economic self-sufficiency</b>	4,465,717	2.38	23.45	3,720,979	2.29	19.54	8,186,696	1.77	42.99
<b>Mobility</b>	235,449	8.80	1.24	4,658,879	2.09	24.47	4,894,329	2.08	25.70
Walking 3 blocks	183,865	9.82	0.97	4,057,239	2.15	21.31	4,241,104	2.16	22.27
Negotiating steps	124,476	11.98	0.65	2,073,719	3.00	10.89	2,198,195	2.99	11.54
Rising from chair	89,008	15.58	0.47	902,177	4.16	4.74	991,185	4.11	5.21
<b>Self-Direction</b>	2,389,740	3.17	12.55	714,424	4.64	3.75	3,104,164	2.80	16.30
<b>Learning</b>	2,879,849	2.81	15.12	99,472	12.59	0.52	2,979,321	2.78	15.65
<b>Communication</b>	691,714	4.93	3.63	1,876,741	3.41	9.86	2,568,455	2.98	13.49
<b>Personal Care</b>	216,475	9.40	1.14	2,138,649	2.96	11.23	2,355,124	2.88	12.37
Bathing	176,080	10.09	0.94	1,816,107	3.28	9.54	1,992,187	3.21	10.46
Dressing	129,229	11.94	0.68	1,020,215	3.97	5.36	1,149,444	4.09	6.04
Toileting	98,656	14.35	0.52	844,513	4.38	4.44	943,169	4.27	4.95
Eating	51,207	20.27	0.27	269,697	6.81	1.42	320,904	6.64	1.69

<sup>a</sup> RSE = Relative Standard Error

<sup>b</sup> % w/ Lim. = Percent of adults with the limitation who acquired it before age 22.

Figure 1: Age Distribution by Disability Group



were: 54.5% for economic self-sufficiency, 26.9% for communication, 10.1% for independent living, 9.2% for personal care, and 4.8% for mobility. More than 10% of adults with functional limitations in the sub-tasks of managing money (25.8%), eating (16.0%), preparing meals (15.0%), shopping (11.7%), dressing (11.3%), and toileting (10.5%) acquired those limitations before age 22.

In terms of overall population estimates, an estimated 4,465,171 adults reported the age of onset for a substantial functional limitation in economic self-sufficiency prior to age 22. More than one million adults reported the age of onset for a substantial functional limitation in learning (2,879,849), self-direction (2,389,740) and/or independent living (1,041,519) before age 22.

### Demographic Characteristics of Adults by Disability Group

There are dramatic differences in the demographic characteristics of adults in the MR but not DD, both MR and DD, DD but not MR, functional limitations only, and non-disabled groups. These are summarized in Table 4. All of the differences noted were statistically significant.

**Gender and Race.** While 51.5% of adults without substantial functional limitations and fewer than 45% of adults with MR/DD were female, 60.5% of adults with functional limitations only were female. In race, adults with functional limitations only were similar to those without substantial functional limitations while adults with MR/

Table 4: Demographic Characteristics of Adults by Disability Group

Characteristic	MR not DD	MR and DD	DD not MR	FLs <sup>a</sup> Only	No FLs	$\chi^2$
<b>Estimated Population</b>	386,263	606,023	829,658	15,428,317	173,490,388	
<b>Gender</b>						
Male	55.2	55.3	56.4	39.5	48.5	342.7***
Female	44.8	44.7	43.6	60.5	51.5	
<b>Racial Group</b>						
White	77.1	71.4	80.8	84.7	84.2	106.0***
Black	19.3	22.4	15.2	12.5	11.2	
Other	3.6	6.2	4.0	2.8	4.6	
<b>Education</b>						
None	3.2 +	25.7	3.3 +	1.0	0.3	1,764.1***
1-8 years	25.6	21.9	15.1	20.4	6.4	
9-11 years	21.9	15.3	18.3	18.7	10.3	
12+ years	49.3	37.1	63.3	59.8	83.1	
<b>Economic Status</b>						
At or above poverty level	71.5	70.5	63.2	77.3	90.4	561.9***
Below poverty level	28.5	29.5	36.8	22.7	9.6	
<b>Living Arrangement</b>						
Alone or with unrelated persons	16.0	18.1	32.4	29.6	16.8	1,386.1***
With spouse	22.2	9.3	23.8	47.4	63.0	
With relative (parent, sibling, etc.)	61.8	72.6	43.9	23.4	20.2	
<b>Marital Status</b>						
Never married	62.6	81.0	49.1	13.8	19.3	2,089.0***
Married	23.1	9.4	24.9	48.5	65.9	
Formerly married	14.4	9.6	26.0	37.7	14.8	

\*\*\*  $p < .001$

+ = RSE exceeds 30%

<sup>a</sup> FLs = Functional Limitations

DD were less likely to be white and more likely to be black. Adults with functional limitations only were least likely to be of a race other than white or black.

**Education and Economic Status.** Adults without substantial functional limitations were most likely to have completed 12 years of education (83.1%). About 60% of adults with functional limitations only or with DD but not MR had completed 12 years of education. About 50% of adults with MR but not DD had completed 12 years of education, while only 37.1% of adults with both MR and DD had completed 12 years of education. (Adults who were 38 years or older turned 18 before federal law PL94-142 passed requiring provision of education to all persons regardless of their disability status.)

Adults without substantial functional limitations were least likely to live below poverty level (9.6%), while adults with DD but not MR were most likely to live below poverty level (36.8%). About 29% of adults with MR (with or without DD) lived below poverty level, as did about 23% of adults with functional limitations only. (In this and other statistics, it is significant that nearly half of the functional limitations only group is 65 years old or older.)

**Living Arrangements.** Almost twice as many adults with DD but not MR and adults with functional limitations only lived alone or with unrelated persons (32.6% and 29.6%, respectively) than the other three groups (16.0% to 18.1%). The proportion of adults who were living with a spouse was highest for those without substantial functional limitations (63.0%) followed by adults with functional limitations only (47.4%). Nearly a quarter of adults with MR but not DD or DD but not MR lived with a spouse (22.2% and 23.8%, respectively). Adults with both MR and DD rarely lived with a spouse (9.3%). Conversely, the proportion of adults living with relatives was highest for adults with both MR and DD (72.6%) and adults with MR but not DD (61.8%), followed by adults with DD but not MR (43.9%), and adults with functional limitations only or without substantial functional limitations (23.4% and 20.2%, respectively).

**Marital Status.** Clear differences emerged in marital status across these groups as well. Adults with MR (with or without DD) were most

likely to have never married (81.0% and 62.6%, respectively). About half of adults with DD but not MR had never married, as compared with 19.3% of adults without substantial functional limitations and 13.8% of adults with functional limitations. Among adults who had married, the proportions that were no longer married were highest among adults with DD (51.1% of adults with DD but not MR and 50.5% of adults with both MR and DD). Among adults with functional limitations only who had ever been married, 43.7% were not presently married. An estimated 38.5% of persons with MR but not DD who had been married at one time were not currently married. Only 18.3% of adults with none of these disabilities who had ever married were not married at the time of the NHIS survey.

The formerly-married groups included those who were divorced, separated, or widowed. The proportion of formerly-married adults who had been widowed included 65.0% of formerly married adults with functional limitations only, 32.1% of formerly married adults with MR but not DD, 21.2% of formerly married adults with DD but not MR, and 6.6% of formerly married adults without substantial limitations. The proportion of adults with both MR and DD who had been widowed could not be estimated because the RSE exceeded 30%.

## Health Status

Table 5 presents the reported health status of NHIS adult sample members. The proportion of adults who reported being in fair or poor health was highest among adults with functional limitations only and adults with DD but not MR (53.9% and 52.9%, respectively). More than one quarter of adults with MR but not DD and adults with both MR and DD also reported being in only fair or poor health (36.8% and 26.9%, respectively). Adults with no functional limitations were much less likely to report being in fair or poor health (8.7%).

## Age at Acquisition of Limitation for Persons by Disability Group

Table 6 summarizes age at onset for each of the seven areas of functional limitation for each of the four disability groups. Adults with both MR and DD were more likely to have limitations in each of the seven areas than any other group.

**Table 5: Reported Health Status for Adults by Disability Group**

Health Status	MR not DD	MR and DD	DD not MR	FLs <sup>a</sup> Only	No FLs	$\chi^2$
Excellent	11.6	10.1	7.5	7.4	34.9	4,991.8***
Very good	18.0	16.9	13.2	12.3	31.1	
Good	37.8	36.1	26.4	26.4	25.2	
Fair	21.9	22.0	26.7	28.1	7.1	
Poor	14.9	14.9	26.2	25.8	1.6	

\*\*\*  $p < .001$

<sup>a</sup> FLs = Functional Limitations

The vast majority of these adults acquired their limitations before age 22. Only a few acquired additional limitations after age 22 (e.g., only 5.5% acquired limitations in independent living, 6.2% acquired limitations in communication, and 4.7% acquired limitations in mobility after age 22).

Adults with DD but not MR were also likely to have listed limitations. More than 60% had limitations in economic self-sufficiency, learning, and/or self-direction acquired before age 22.

Between 20% and 45% had limitations in other areas acquired before age 22. However, unlike adults with both MR and DD, large numbers of adults with DD but not MR acquired limitations at age 22 or later, including 26.5% who acquired limitations in independent living, 14.6% who acquired limitations in communication, 10% who acquired limitations in personal care, and 11.9% who acquired limitations in mobility after age 22.

Adults with MR but not DD presented a substantially different pattern, but one that is substantially related to the definition of mental retardation. Mental retardation, by definition,

includes a substantial limitation in the area of learning. Persons with MR who had three or more functional limitations were, by definition, included in the both MR and DD group. Most persons with MR (84.0%, including 98.1% of adults with both MR and DD and 60.9% of adults with MR but not DD) reported substantial functional limitations in economic self-sufficiency first occurring in childhood. Not surprisingly, since by definition adults with MR but not DD had only one or two substantial functional limitations, adults in the MR but not DD group had relatively few other reported functional limitations acquired before age 22. All adults with MR but not DD who had limitations in economic self-sufficiency or learning acquired them before age 22; fewer than 5% were reported to have acquired limitations in the other 5 areas before age 22. However, many of these individuals acquired additional functional limitations after age 22: 11.8% acquired a limitation in independent living, 8.2% acquired a limitation in communication, and 6.0% acquired a mobility limitation after age 22.

**Table 6: Percentage of Adults with Functional Limitations (FLs) by Disability Group**

Limitations	MR not DD		MR and DD		DD not MR		FLs <sup>a</sup> Only	
	Before 22	Any Age	Before 22	Any Age	Before 22	Any Age	Before 22	Any Age
Economic	60.9	60.9	98.1	98.1	96.3	96.3	20.4	44.5
Learning	100.0	100.0	100.0	100.0	63.2	63.2	10.2	10.8
Self-direction	4.0 +	6.8	65.7	66.8	65.7	67.1	10.7	15.1
Independent living	4.8 +	16.6	64.9	70.4	43.2	69.7	2.3	61.6
Communication	2.6 +	10.8	50.0	56.2	27.0	41.6	1.6	12.8
Personal care	0.1 +	4.5 +	16.2	20.0	20.6	30.6	0.1	13.4
Mobility	0.0 +	6.0	6.8	11.5	23.6	35.5	0.5	30.0

+ = RSE exceeds 30%

<sup>a</sup> FLs = Functional Limitations

Adults with functional limitations only were least likely to acquire limitations in any of the seven areas prior to age 22. The most common limitations acquired by this group before age 22 were in economic self-sufficiency (20.4%), learning (10.2%), and self-direction (10.7%). The most common functional limitations in this group (acquired at any age) were in independent living (61.6%), economic self-sufficiency (44.5%), and mobility (30%). In all areas, most adults in this group with any given limitation acquired it at age 22 or later. While less common, a substantial number of adults in this group acquired limitations in self-direction (4.4%), communication (11.2%), and/or personal care (13.3%) at age 22 or later.

### General Limitations

The NHIS contained several items related to activity limitations among adults, including:

- a) the adult's major activity (working, keeping house, going to school, or something else),
- b) whether any impairment or health problem kept the person from working at a job or business,
- c) whether any impairment or health problem limited the kind or amount of work a person could do,
- d) whether any impairment or health problem kept the adult from doing any housework at all, or whether the adult was limited in the kind or amount of housework because of their impairment, and
- e) whether any impairment or health problem caused the person to need help from other adults with personal care tasks such as eating, bathing, dressing, or getting around the house, or otherwise limited the adult's activities.

Table 7 illustrates these limitations.

**Major Activity.** The majority of adults without substantial functional limitations reported that their major activity was working (66.6%). High proportions of adults with disabilities reported that their major activity was "something else" other than work, keeping house, or going to school, ranging from 45.3% for adults with functional limitations to 58.5% of adults with both MR and DD. Adults with functional limitations only were most likely to report that keeping house was their major activity (30.8%). The proportion of adults with disabilities who re-

ported that work was their major activity ranged from 17.5% for adults with both MR and DD to 26.1% for adults with MR but not DD. More than 10% of adults with MR/DD reported that going to school was their major activity. (Some of the differences in major activity likely reflect age differences among the groups.)

**Work Limitations.** While the majority of adults (here, ages 18 to 69 years) without substantial functional limitations reported no limitations in working (89.1%), almost all adults with DD (with or without MR) reported some degree of work limitation (96.2% and 93.3%, respectively). Adults with MR but not DD and adults with functional limitations only were similar in that about half reported being unable to work and about 20% reported not being limited in work.

**Employment Status.** Among adults ages 18-69 years without substantial functional limitations, 69.3% were currently employed, 2.9% were unemployed, and 27.8% were not in the labor force (i.e., they neither had a job nor were they looking for one). By contrast, only 20-30% of adults with disabilities were in the workforce. Major differences in both presence in the workforce and proportion of adults in the workforce who were unemployed existed among persons with and without functional limitations. Only 4.0% of adults without substantial functional limitations who were in the workforce were unemployed, compared with 7.6% of adults with both MR and DD, 10.5% of adults with functional limitations only, 15.7% of adults with MR but not DD, and 22.4% of adults with DD but not MR. Clearly, the presence of a disability affected not only whether a person was in the workforce, but also the likelihood of a person who wanted to work finding a job.

**Sensory Limitations.** Only 2% of adults without substantial functional limitations reported having serious difficulty seeing, and only 0.2% reported being legally blind. About 20% of adults with functional limitations only, DD but not MR, and both MR and DD reported having serious difficulty seeing or being legally blind. About 6% of adults with MR but not DD reported having serious difficulty seeing and 0.3% reported being legally blind.

Hearing impairments were defined as having trouble hearing normal conversation even with a hearing aid. Hearing impairments were least common among adults without substantial functional limitations and adults with MR but not DD (3.6%

**Table 7. General Limitations of Adults by Disability Group**

Limitations	MR not DD	MR and DD	DD not MR	FLs <sup>a</sup> Only	No FLs	X <sup>2</sup>
<b>Major Activity</b>						
Working	26.1	19.3	17.5	20.1	66.6	4,235.1***
Keeping house	11.6	9.8	17.6	30.8	15.5	
Going to school	10.2	12.3	12.0	3.7	6.6	
Something else	46.1	58.5	52.9	45.3	11.3	
<b>Work Limitations (18-69 years)</b>						
Unable to work	44.8	73.5	70.1	51.6	3.5	3,619.3***
Limited in kind/amount of work	29.1	20.0	18.0	20.4	3.8	
Limited in other activities	5.2	2.7 +	5.2	8.0	3.6	
Not limited	20.9	3.8	6.7	20.0	89.1	
<b>Employment</b>						
Currently Employed	31.2	26.9	21.5	22.1	69.3	3,970.3***
Unemployed	5.8	2.2 +	6.2	2.6	2.9	
Not in the labor force	63.0	70.9	72.3	75.3	27.8	
<b>Sensory Limitations</b>						
Serious difficulty seeing	5.9	14.1	16.5	16.4	2.0	1,180.6***
Legally blind	0.3 +	3.7 +	6.0	3.4	0.2	241.4***
Trouble hearing normal conversation (with hearing aid)	5.0	7.4	17.6	19.3	3.6	996.9***
<b>Communication Limitations</b>						
Difficulty communicating with family	1.6	17.4	13.2	1.9	0.1	315.5***
Difficulty communicating with people outside family	5.7	37.4	23.9	4.4	0.1	618.1***
Serious difficulty understanding when others talk or ask questions	8.7	33.4	26.6	8.8	0.1	699.1***
<b>Physical Limitations</b>						
Uses mobility aids to get around	9.1	10.0	35.7	30.2	1.4	2,616.2***
Has problems with balance lasting at least 3 months	10.4	11.8	26.9	17.7	1.2	1,346.1***

\*\*\* p < .001

+ = RSE exceeds 30%

<sup>a</sup> FLs = Functional Limitations

and 5.0%, respectively). Among adults with both MR and DD, 7.4% reported having hearing impairments. Adults with DD but not MR and adults with functional limitations only were most likely to report having hearing impairments (17.6% and 19.3%, respectively).

**Communication Limitations.** Reported serious difficulties in communicating (both within the family and with others outside the family) were virtually non-existent among adults without substantial functional limitations (0.1%). Adults with functional limitations only were somewhat more likely to have difficulty communicating with people in the family (1.9%) and people outside the family (4.4%). Adults with MR but not DD had similar reported rates of difficulty (1.6% and 5.7%, respectively). Adults with DD (with or without MR), however, were much more likely to have difficulty communicating with people within the family (17.4% and 13.2%, respectively) and outside the family (37.4% and 23.9%, respectively).

Almost none of the people without substantial limitations had difficulty understanding others when they talked. About 9% of adults with functional limitations only and adults with MR but not DD had serious difficulty understanding others. More than 25% of adults with DD but not MR and more than 33% of adults with both MR and DD were reported to have serious difficulty understanding others.

**Physical Limitations.** The use of mobility aids was most common among adults with DD but not MR (35.7%) and adults with functional limitations only (30.2%). About 10% of adults with MR (with or without DD) reported using mobility aids. A similar pattern emerged regarding problems with balance enduring three months or longer. Adults with DD but not MR and adults with functional limitations only were most likely to report problems with balance (26.9% and 17.7%, respectively). Adults without substantial functional limitations rarely reported these limitations.

## Difficulties in Daily Activities

While the criteria for membership in the disability groups for this report required significant functional limitations, some people reported only some difficulty with particular activities. Table 8 summarizes the estimated percentage of adults in the disability groups with any difficulty in selected activities of daily living (ADLs), six selected

instrumental activities of daily living (IADLs), and eight selected functional movements. For this section, a person was considered to have difficulty if they get help, if they need reminding or someone close by, if they use special equipment, or if they have at least some difficulty with the task in the absence of these supports. Very few adults without substantial functional limitations reported difficulties in any of these activities.

**ADL Difficulties.** Adults with MR but not DD reported few difficulties with the selected ADLs. Only an estimated 9.4% had difficulty with one or more of these ADLs. The most commonly reported ADL difficulty for this group was bathing (7.7%).

More than one quarter of people with functional limitations but not MR/DD (26.0%) had difficulty with one or more ADLs. The most common difficulty was in bathing. While 19.8% of these adults reported difficulty bathing, only about 10% reported difficulties with dressing, getting in and out of bed or chairs, using the toilet, and/or getting around inside the home.

More than 40% of adults with DD (with or without MR) reported one or more ADL limitations. Among adults with both MR and DD, 22.5% had difficulty dressing and 10.2% had difficulty eating or using the toilet. About a quarter of adults with DD but not MR reported difficulties dressing, getting in and out of bed or chairs, using the toilet, and/or getting around inside the house. Although it was the least common ADL difficulty for adults in the DD but not MR group, more people in that group reported difficulty eating than did members of any other group (16.7%).

**IADL Difficulties.** The vast majority of adults with both MR and DD (84.4%), DD but not MR (81.5%) and functional limitations only (69.3%) reported difficulties with one or more of the six selected IADLs, but the pattern of specific IADL difficulties varied among the groups.

The majority of adults with both MR and DD reported having difficulty preparing meals (50.5%), shopping (66.5%), and/or managing money (79.0%). Just under half reported having difficulty with heavy housework and/or using the telephone and about a quarter reported having difficulty with light housework.

Among adults with DD but not MR, the most common IADL limitation was doing heavy housework (61.3%). More than 40% of individuals with DD but not MR reported difficulty

**Table 8. Percentage of Adults Reporting Any Difficulty by Disability Category**

Limitations	MR not DD	MR and DD	DD not MR	FLs <sup>a</sup> Only	No FLs	$\chi^2$
<b>Activities of Daily Living (ADLs)</b>						
1 or more ADLs	9.4	40.6	42.1	26.0	0.5	2,410.4***
Bathing	7.7	36.4	35.4	19.8	0.3	1,893.0***
Dressing	4.9	22.5	30.4	12.7	0.2	1,250.3***
Eating	3.0 +	10.2	16.7	3.9	0.05	445.8***
Getting in and out of bed or chairs	3.5 +	8.6	29.7	13.1	0.2	1,439.9***
Using the toilet	3.9 +	11.5	24.4	9.8	0.1	903.7***
Getting around inside the home	3.7 +	8.0	27.8	12.2	0.2	1,046.7***
<b>Instrumental Activities of Daily Living (IADLs)</b>						
1 or more IADLs	28.4	84.4	81.5	69.3	1.7	4,469.1***
Preparing meals	8.0	50.5	41.9	16.1	0.2	1,816.4***
Shopping	13.6	66.5	50.2	26.1	0.3	2,507.1***
Managing money	21.2	79.0	45.9	12.5	0.1	1,460.9***
Using the telephone	6.8	40.2	20.8	6.1	0.04	780.7***
Doing heavy work around the house	14.3	48.9	61.3	65.9	1.6	4,211.0***
Doing light work around the house	7.3	26.6	38.8	22.0	0.3	2,057.2***
<b>Functional Movements</b>						
Lifting 10 pounds	13.5	16.8	40.8	39.7	2.1	2,975.8***
Walking up 10 steps without resting	15.8	19.8	45.8	44.9	2.2	3,266.6***
Walking a quarter of a mile	16.3	24.1	51.7	54.9	3.3	3,912.7***
Standing for 20 minutes	14.9	16.8	48.6	43.6	2.4	3,166.4***
Bending down to pick up objects	13.2	17.3	47.7	43.6	2.9	3,044.7***
Reaching up over the head or reaching out	5.1	7.7	26.0	20.4	1.1	1,424.3***
Using fingers to grasp or handle something	6.5	12.7	26.7	16.1	1.2	1,364.0***
Holding a pen or pencil	5.6	12.0	24.5	11.7	0.7	1,117.4***

\*\*\*  $p < .001$   
+ = RSE exceeds 30%  
<sup>a</sup> FLs = Functional Limitations

preparing meals, shopping, and/or managing money. More than a third reported difficulty with light housework and about a fifth reported difficulty using the telephone.

Among adults with functional limitations only, the most common IADL limitation by far was doing heavy housework (65.9%). About one in four reported difficulty shopping, and one in five reported difficulty with light housework. More than 1 in 10 reported difficulty preparing meals and/or managing money.

By contrast, only 28.4% of persons with MR but not DD reported difficulty with one or more IADLs. The most common areas of difficulty were managing money (21.2%), doing heavy housework (14.3%), and shopping (13.6%).

**Functional Movement Difficulties.** Functional

movement was less likely to cause difficulty for adults with both MR and DD than ADLs or IADLs. With the exception of walking a quarter mile, which was difficult for 24.1% of adults with both MR and DD, none of the functional movement categories was difficult for more than 20% of adults with both MR and DD. Only 10% to 20% of adults with both MR and DD reported difficulty with lifting, walking steps, standing, bending, grasping, and/or holding a pencil.

With the exception of heavy housework, the most common difficulties for adults with functional limitations only were in the functional movement category. More than half of the adults in this group reported difficulty walking a quarter of a mile (54.9%). About 40% reported difficulty lifting, walking up steps, standing for 20 minutes, and/or bending down to pick up objects.

**Table 9. Perceptions of Disability for Adults by Disability Group**

Perception	MR not DD	MR and DD	DD not MR	FLs <sup>a</sup> Only	No FLs	$\chi^2$
Person or family considers person to have a disability	66.3	88.8	82.7	55.6	3.7	3,971.3***
Other people consider person to have a disability	61.0	84.2	83.4	50.5	2.7	3,930.0***

\*\*\*  $p < .001$   
<sup>a</sup> FLs = Functional Limitations

Persons in this group also reported some difficulty with reaching up or out (20.4%), grasping (16.1%), and/or holding a pen or pencil (11.7%).

Adults with DD but not MR reported a similar pattern of functional movement limitations as did those with functional limitations only. They were a little less likely to report difficulty walking a quarter of a mile (51.7% vs. 54.9%), but were slightly more likely to report limitations in the other areas. Adults with DD but not MR were the most likely to report difficulties reaching out or over their head (26.0%), using their fingers to grasp or handle something (26.7%), or holding a pen or pencil (24.5%). By contrast, only about 10% and 15% of adults with MR but not DD reported difficulties with lifting, walking up steps, walking a quarter of a mile, standing for 20 minutes, and/or bending down to pick up objects, while only about 5% reported difficulties in the other movement areas.

### Perceptions of Disability

NHIS-D respondents were asked whether any family members considered themselves or were considered by other family members to have a disability, and whether they thought people outside of their family considered a family member to have a disability. Their responses are given in Table 9. Very few of the adults not in our disability groups considered themselves or were considered by the respondent (3.7%) or were considered by people outside the family (2.7%) to have a disability. Slightly more than half of adults with functional limitations only were so perceived. About two-thirds of adults with MR but not DD considered themselves or were considered by others to have a disability. More than 80% of adults with DD (with or without MR) were so perceived, including 88.8% of adults with both MR and DD who considered themselves or were considered by their family member to have a disability.

### Discussion

Previous *Data Briefs* described important differences among persons identified as having MR but not DD, DD but not MR, and both MR and DD. Here, that work is elaborated and compared to data on adults with one or more substantial functional limitations but not MR or DD. While the group of adults with functional limitations only shared characteristics with each of the three MR/DD groups (albeit sharing different characteristics with each group), it was as a group distinct from the three MR/DD groups in important ways. First, there were about 10 times as many people in the functional limitations only group as in the MR/DD groups combined (15.4 million adults and 1.50 million adults, respectively). Among the 15.4 million adults with functional limitations only, an estimated 3,204,168 (RSE = 2.38) had three or more functional limitations. If those limitations had been acquired before age 22, these adults would have been classified as having DD.

There were also important differences in demographic characteristics between adults with functional limitations only and adults with MR/DD. Adults with functional limitations only were much older as a group than the MR/DD groups (46.4% were 65 years or older as compared with 7.7% of the MR/DD groups). They were also more likely to be female, less likely to be living in poverty, more likely to be married and living with a spouse, and more likely to be widowed than the MR/DD groups. They were more likely to report being in poor health than adults with MR, but reported health status very similar to adults with DD. The groups also differed in age at onset of disability. The vast majority of adults with functional limitations only acquired their limitations after age 22. Those who had acquired limitations in childhood reported limitations in only one or two areas (not the three or more required for classification as having DD). By definition, both MR and DD have

onset of limitations before age 22.

Adults with functional limitations only were similar to adults with MR but not DD in terms of major activity status, work limitations, communication limitations, and balance difficulties. They most resembled adults with DD but not MR in terms of sensory limitations, use of mobility aids, and functional movement other than fine motor skills.

Adults with functional limitations only were more likely to have limitations in ADLs than adults with MR but not DD. They were less likely to have ADL limitations than adults with both MR and DD and adults with DD but not MR. They were similar to adults with DD but not MR in limitations in IADLs and other activities requiring physical strength, endurance, and balance (e.g., doing heavy housework, lifting, climbing, walking distances), but had fewer other IADL limitations than adults with both MR and DD and adults with DD but not MR. The proportion of adults with functional limitations only who considered themselves or who were considered by others to have a disability was much less than persons with DD (with or without MR) but not greatly different than adults with MR but not DD.

Adults with functional limitations only were much more likely to show similarities in limitations with the MR/DD groups than with persons with no substantial functional limitations. Although they tended to have fewer and less severe limitations than persons with DD (with or without MR), they shared certain notable similarities in patterns of limitations with adults with MR but not DD (e.g., relatively fewer limitations in communication, self-care, using the telephone, and managing money), which may reflect a relatively “mild/moderate” versus “severe/profound” level of disability.

Although comprising only about one in five (20.8%) adults with functional limitations only, the estimated population of adults with three or more substantial functional limitations but not DD (3.2 million) was about twice as many adults as have MR/DD. Further analyses are needed to determine whether notable similarities are evident among persons with three or more substantial functional limitations irrespective of onset before or after the developmental period. Such analyses would be significant to growing efforts in policy to respond appropriately to the needs of individuals with disabilities regardless of any categorical label they may have.

## References

- Adams, P.F., & Marano, M.A. (1995). Current estimates from the National Health Interview Survey 1994. *Vital Statistics, 10* (193).
- Larson, S.A., Lakin, K.C., Anderson, L., Kwak, N., Lee, J.H., & Anderson, D. (2001). Prevalence of mental retardation and developmental disabilities: Estimates from the 1994/1995 National Health Interview Survey Disability Supplements. *American Journal on Mental Retardation, 106*, 231-252.
- Shah, B.V., Barnwell, B.G., & Bieler, G.S. (1997). *SUDAAN user's manual, Release 7.5*. Research Triangle Park, NC: Research Triangle Institute.

## MR/DD Data Brief

---

September 2001, Vol. 3, No. 3

### Issue Authors —

Sheryl Larson, Ph.D.  
Charlie Lakin, Ph.D.  
Nohoon Kwak, Ph.D.  
Lynda Anderson, M.A., M.P.H.

*Research and Training Center on Community Living,  
Institute on Community Integration, University of Minnesota*

*MR/DD Data Brief* is published periodically by the Research and Training Center on Community Living and Institute on Community Integration (UAP), College of Education and Human Development, University of Minnesota.

Data analysis funding was provided by the National Institute on Disability and Rehabilitation Research (NIDRR), U.S. Department of Education, through a Cooperative Agreement (No. H133G980082). Funding for this publication was also provided through a NIDRR Cooperative Agreement (No. H133B980047). Supplemental funding was provided by the Administration on Developmental Disabilities (Grant#90DH006401).

The analysis, interpretation, and conclusions are those of the authors and do not necessarily reflect the views of the Institute, Center, University, or their funding sources.

Inquiries about *MR/DD Data Brief* can be directed to —

**Publications Office  
Institute on Community  
Integration  
University of Minnesota  
109 Pattee Hall  
150 Pillsbury Drive S.E.  
Minneapolis, MN 55455**

**phone: 612-624-4512**

**fax: 612-624-9344**

**email: [publications@icimail.coled.umn.edu](mailto:publications@icimail.coled.umn.edu)**

**Web: <http://rtc.umn.edu/nhis>**

*MR/DD Data Brief* is available in alternative formats upon request from the address above.

*The University of Minnesota is an equal opportunity employer and educator.*

---

**Institute on Community Integration  
University of Minnesota  
109 Pattee Hall  
150 Pillsbury Dr. S.E.  
Minneapolis, MN 55455**

*Address Service Requested*

Non Profit Org.  
U.S. Postage  
**PAID**  
Minneapolis, MN  
Permit No. 155