Understanding Changes in the Disability Prevalence in the 2014 Survey of Income and Program Participation: Three Explanations Considered

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Heide Jackson and Danielle Taylor
U.S. Census Bureau
Social and Economic Housing Division
Health and Disability Statistics Branch

Abstract:

The Survey of Income and Program Participation contains a wealth of information on demographic, social, and health outcomes. Although many federal surveys use a common set of questions to measure disability, Wave 1 of the 2014 Survey of Income and Program Participation (SIPP) had a disability prevalence higher than other contemporaneous federal surveys. This paper seeks to explain why. We draw upon survey and collection data from the 2014 SIPP Panel and compare the prevalence of disability in the 2014 SIPP Panel with the prevalence in the 2008 SIPP, the 2010-2014 American Community Survey, and the 2010-2014 National Health Interview Survey. We use a combination of descriptive and decomposition techniques to quantify how much of the difference in the disability prevalence is related to differences in the characteristics of the samples interviewed in the 2008 and 2014 SIPP panels. Descriptive analyses are also used to test whether errors in data collection may have resulted in a higher disability prevalence. Findings suggest that the high disability prevalence in the 2014 SIPP is a function of how disability status was reported rather than: weighting, changing sample composition, or data collection error. While the high disability prevalence in the 2014 SIPP is unexpected, SIPP's rich information and relatively large sample of people with disabilities nevertheless makes it a useful resource for researchers studying disability.

Introduction

In recent years, research has documented an increase in the prevalence of limitations among working age adults and either decreasing or constant trends in limitations and disability among adults 65 and older (Martin & Schoeni, 2014; Freedman et al., 2013).[1] Figure 1 shows recent trends in the disability prevalence for working-age and older adults across three federal surveys, the American Community Survey (ACS), the National Health Interview Survey (NHIS), and the Survey of Income and Program Participation (SIPP).[2] Past research suggests that the prevalence of disability changes rather slowly in the population, with a maximum annual rate of change estimated at about 3% (Freedman et al. 2002). However, recent data from the Survey of Income and Program Participation suggests a larger change in the disability prevalence between 2011 and 2013.[3]

Figure 1 About Here

Between 2011 and 2013, SIPP estimated a 5.2 percentage-point increase in disability for adults aged 40-64, a 35% increase in the disability prevalence over just two years. For adults 65 and older, SIPP estimated a 7.2 percentage-point increase in disability, a 19% percent increase. By comparison, between 2011 and 2013, the NHIS estimated that adults aged 40 to 64 experienced a 0.2 percentage point increase in disability, and adults 65 and older experienced a 1.4 percentage point decrease in disability.[4] In the same two years, the ACS estimated a 0.4 percentage point increase in disability for adults aged 40 to 64 and a 0.2 percentage point decrease for adults 65 and older.[5, 6]

The increase in SIPP's estimated disability prevalence between 2011 and 2013 is unexpected. Why does SIPP show a large increase in the disability prevalence between these two years while the ACS and NHIS do not? This paper seeks to explore this puzzle. First, we review possible explanations for the change in the disability prevalence in SIPP relative to other federal surveys. Next, we describe the data sources and methods used to test for these possible explanations. We present results from our analyses and conclude by discussing their implications for the quality of SIPP data and the change in the disability prevalence in SIPP.

Possible Explanations for the Rise in Disability

Sample selection and recruitment

While the ACS and NHIS are cross-sectional surveys that select a new sample every calendar year, SIPP is a panel study that follows the same sample over time. In 2009, 2010, and 2011, the 2008 SIPP Panel asked members of the sampled households the same six disability questions as part of scheduled topical modules.[7] In 2013, the 2014 SIPP Panel selected a new sample who received the same six disability questions as part of a newly redesigned survey. If by chance, the 2014 SIPP Panel interviewed a sample that had a higher prevalence of disability and was different on other characteristics known to be correlated with report of disability, then we might expect that the change in the disability prevalence stems from changes in the composition of the SIPP panel. For example, if by chance the 2014 SIPP Panel interviewed a sample that had a substantially lower educational attainment than the 2008 SIPP sample, then we might expect the disability prevalence in the 2014 SIPP Panel to be higher even after weighting because educational attainment is not used as one of the criteria to select the sample.

Survey design

It is important to recognize that we cannot completely isolate the effects of changing sample composition net of the survey redesign. Between the 2008 and 2014 SIPP Panels, the SIPP survey underwent a number of changes. These changes included moving questions on some topics to an event history calendar, the addition and removal of some survey questions, and the placement of some topics in the main SIPP questionnaire which had previously been asked about in separate topical modules. The survey redesign could have influenced responses to disability and other questions, creating the appearance of changing sample composition when in fact there changes in how the survey measures sample characteristics. Additionally, while the disability questions themselves remained the same across the 2008 and 2014 SIPP Panels, the placement of these questions in the surveys did not; different questions immediately precede the disability section. In the 2008 SIPP Panel, questions on assets and debts were asked immediately before the disability section while in the 2014 SIPP Panel, questions on health care utilization and medical expenses came before the disability content. It is possible that being asked a series of health and health care questions before being asked about disability primed respondents to think more about their disabling conditions and impairments.

Data collection, processing, and storage

While potential sample changes and actual survey design changes may explain the change in the SIPP disability prevalence, it is also important to rule out the possibility of any errors in data collection, data storage, the transfer of data from the instrument to the final data set, or data cleaning, imputation, and weighting that may have contributed to the change in disability in SIPP. If a technical issue occurred, then the high estimated prevalence of disability in the 2014 SIPP may be an artifact of a data error rather than a true change in the disability

prevalence. An error could have occurred at many stages of the survey including data collection, processing, and weighting.

We consider each of these data collection and processing explanations in turn. First, there is the possibility of interviewer error. If specific interviewers made repeated data entry errors, this may have led to an artificially high prevalence of disability and unusual patterns of disability by age and other demographic characteristics. While perhaps less likely, issues in instrument data storage could also have created misleading disability data. If the instrument inadvertently stored "No" responses as "Yes", this would have artificially inflated the disability prevalence. Additionally, if there was an error in copying instrument data into the data set, this could have created inaccurate data. Finally, decisions in data cleaning, imputation, or weighting could have affected the disability prevalence. For respondents with missing data, the Census Bureau imputes the value using a variety of methods including taking a response from a case with comparable observed characteristics. It is possible that an error in this imputation affected the disability prevalence. Similarly, all disability estimates are weighted to be nationally representative; errors in the construction of these weights could have inflated disability estimates in the 2014 SIPP Panel.

Current paper

This paper attempts to explain why we see a change in the estimated disability prevalence between 2011 and 2013 in SIPP data but not in data from other federal surveys. While we cannot rule out all possible explanations for the change in the disability prevalence, this paper focuses on understanding how much of the change in disability was related to a change in the sample composition between the 2008 and 2014 SIPP Panels and ruling out any technical errors that may have artificially inflated the disability prevalence.

Data and Methods

Data

When comparing trends in disability over time and trends in basic demographics, we use data from the American Community Survey (ACS), the National Health Interview Survey (NHIS), Waves 4, 7 and 10 of the Survey of Income and Program Participation (SIPP) 2008 Panel, and Wave 1 of the 2014 SIPP Panel. The ACS and NHIS are both cross-sectional household surveys that collect disability information that can be weighted to represent the civilian non-institutionalized population living in the United States. The 2008 and 2014 SIPP Panels also sample from non-institutionalized households and can be weighted to represent the civilian non-institutionalized population living in the United States. The 2008 SIPP Panel interviewed respondents at 4 month intervals from 2008 through 2013 and collected disability information in Waves 4, 7, and 10.

When looking at changes in more nuanced social and economic factors, we primarily make comparisons between Wave 10 of the 2008 SIPP Panel, which collected disability data at the time of the 2011 interview, with Wave 1 of the 2014 SIPP Panel, which collected disability data at the time of the 2013 interview.[8] However, we use other waves of the 2008 SIPP panel in sensitivity checks as the sample composition of the 2008 SIPP Panel may have changed across waves due to attrition.

Finally, when doing technical checks of data quality for the 2014 SIPP Panel, we use paradata, which is descriptive information about the interview, in addition to 2014 Wave 1 survey data. As a check on the reliability of estimates, we also draw on data from the Social Security Administration (SSA) Supplement to SIPP. The SSA Supplement to the 2014 SIPP

Panel re-interviewed respondents to the 2014 Wave 1 SIPP shortly after 2014 Wave 1 and asked respondents a variety of questions on their health and wellbeing.

The 2008 and 2014 SIPP Panels are both longitudinal studies and as such households initially sampled are not re-interviewed at all waves due to loss to follow up. Respondent attrition may affect sample composition and prevalence of disability in the remaining sample, thus in a sensitivity analysis (results available upon request) we use other waves of the 2008 SIPP Panel.[9]

Measures

Across the SIPP, NHIS, and ACS surveys, we have a common measure of disability. A person is indicated as having a disability if they had difficulty seeing, hearing, concentrating or making decisions (because of a physical mental or emotional problem), walking or climbing stairs, bathing or dressing, or running errands (because of a physical mental or emotional problem).

Across surveys, we also have common measures of basic demographic characteristics that are fairly comparable when restricted on and weighted to the civilian non-institutionalized population. These characteristics include age, race/ethnicity (black non-Hispanic, white non-Hispanic, Hispanic, Asian non-Hispanic, any other race), gender, and region of residence (South, West, Midwest, Northeast).

Additionally, when comparing changes across SIPP panels, we include marital status (never married, married, separated, divorced, widowed), education (less than high school, high school, some college but less than a bachelor's degree, bachelor's degree or higher), employment status (employed at any point in December of the reference period, unemployed for all of

December of the reference period, out of the labor force for all of December of the reference period), subjective health status (excellent, very good, good, fair, poor), health care utilization (average number of medical provider visits, average number of nights spent in the hospital), social security disability income (any/none), and household poverty status (less than 100% of federal poverty level, between 100%-149% of federal poverty level, 150%-199% of federal poverty level, 200%-399% of federal poverty level, 400% or above the federal poverty level).

As disability and limitations become most salient in midlife, the analytic sample is restricted to adults aged 40 and older.

Methods

We first test whether changes in the prevalence of disability in SIPP appear driven by changes in the characteristics of the interviewed SIPP sample. We do this by showing a combination of descriptive statistics and decomposition results. Our first descriptive analysis compares basic demographics across the 2008 and 2014 SIPP Panels, the ACS, and NHIS in order to understand whether there was any notable change in basic demographic characteristics that might explain the increase in the disability prevalence in Wave 1 of the 2014 SIPP Panel. Next, we move to examine whether any of the more nuanced social or economic measures collected in the 2008 and 2014 SIPP Panels might have changed in such a way as to likely affect the prevalence of disability. In order to make the samples as comparable as possible, the descriptive analyses exclude respondents who were institutionalized or who were interviewed in the U.S. island areas or Puerto Rico. Analyses are weighted using appropriate survey weights.

We then more formally test whether changes in the prevalence of disability in SIPP may be explained by differences in the sample selected for the 2008 and 2014 SIPP Panels or in

changing associations between sample characteristics and disability using Oaxaca-Blinder decomposition with a logistic regression model. Oaxaca-Blinder decomposition breaks down how much of the difference in disability between the 2008 and 2014 SIPP Panel is related to changes in sample characteristics (endowments), changes in how these sample characteristics relate to disability (coefficients), and the interaction of changing characteristics and their association with disability (interactions). The models presented in the main paper include age, race, gender, region, marital status, education, employment status, subjective health status, health care utilization, and household poverty status in the decomposition. Models are stratified by age in order to allow for age-specific effects. One decomposition model is estimated for adults aged 40-64 and the other is for adults 65 and older. Survey weights are not used in this analysis because this study is examining changes in characteristics of the SIPP sample across the 2008 and 2014 SIPP Panels and not changes in the population. Consequently, results are not generalizable to the U.S. population; however, they still inform whether changes in disability for the SIPP sample can be explained by changes in sample characteristics or changes in how these sample characteristics affect disability. [10]

We conclude by presenting a series of checks on the quality of the data in order to rule out the possibility of a technical error that might have induced the high disability prevalence in the 2014 SIPP panel. These analyses use the full SIPP sample for whom required data is available. First, to check for any interviewer error, we examine the average time it takes to complete the disability questions in the 2014 SIPP panel, looking by disability status. If interviewers are taking substantially less time to complete these questions if a person is reported to have a disability, this might indicate some interviewer error or rushing. Next, we would expect that if there were an instrument data storage error in the 2014 Wave 1 data, the disability

prevalence might decline upon re-interview with a different instrument. While SIPP 2014 Wave 2 is not yet available, the Social Security Administration (SSA) commissioned a SIPP supplement shortly after 2014 Wave 1 interviews. Given that the SSA Supplement used different interviewers, a different processing system, and a phone interview instead of in-person interviews, we might conclude that if respondents who reported a disability in 2014 Wave 1 also reported related limitations in Wave 2, then the Wave 1 data were not affected by an error in how data were stored in the instrument or transferred into the data file. Finally, to test whether imputation or weighting might have inflated the disability estimates, we examine the disability prevalence (1) excluding people assigned their disability status by imputation, (2) including people assigned by imputation but excluding weights, and finally (3) including the survey weights.

Results

One possible explanation for the change in disability is that changes in the SIPP sample composition between 2011 and 2013 may have resulted in a sudden increase in the disability prevalence. For this explanation to be plausible, we would expect to see a large increase in a characteristic positively associated with disability or a large decrease in a characteristic negatively related to having a disability. Table 1 shows the basic demographic characteristics in the SIPP, ACS, and NHIS samples for adults aged 40 and older for calendar years 2011 and 2013.

Table 1 About Here

While the disability prevalence in SIPP among adults 40 and older increased by over 6 percentage points between 2011 and 2013, there are no correspondingly large differences in the age, race, sex, and regional composition of the SIPP samples for these two years. Also notable,

between 2011 and 2013, neither the ACS nor NHIS show a 6 percentage-point change in the population composition. These findings suggest that changes in disability are likely not explained by changes in the prevalence of these basic demographic characteristics.

Beyond basic demographics, SIPP also collects information on a variety of social and economic characteristics of people, families, and households that may not be comparable with the information obtained in other surveys. Table 2 shows the educational attainment, marital history, health status, employment history, and household poverty status in 2011 and 2013 for adults 40 and older in SIPP.

Table 2 About Here

Again, while there are some changes in the sample composition between the 2008 and 2014 SIPP Panels, changes on these variables are generally smaller than the change observed for disability.[11] To formally test whether combined changes in demographic and social characteristics of the SIPP sample could explain the change in disability in the SIPP between the 2008 and 2014 Panels, we move to the Oaxaca-Blinder decomposition analysis (Table 3).

Table 3 About Here

For adults aged 40-64, changes in sample characteristics, referenced in the model as endowments, explain just over 37% of the change in the disability prevalence for the SIPP sample, while changes in the association of these characteristics with disability explain 56% of the change in disability prevalence. For adults aged 65 and older, changes in sample social and demographic characteristics explain just 12% of the change in disability prevalence, while 85% is explained by changes in the associations of these characteristics with disability. In both models, the interaction of endowments with characteristics explains just a small percentage of

the change in disability prevalence.[12] Overall, these findings suggest that a change in the sample composition does not appear to explain the majority of the change in the disability prevalence across SIPP Panels.[13]

Table 4 shows which sample characteristics and associations explain at least 5% of the change in the disability prevalence in SIPP between 2008 and 2014 Panels. In both middle-aged and older adults, subjective health status is an important factor that explains some of the increase in the prevalence of disability.

Table 4 About Here

For adults aged 40-64, the change in the percentage of adults in poor health explains 17.7% of the increase in the disability prevalence across the 2008 and 2014 SIPP Panels. In adults 65 and older, the increase in the percentage of adults in poor health explains 25.4% of the change in the disability prevalence; however, this effect is partially offset by changes to other parts of the health distribution. Changes in the percentage of adults in good health reduced the change in disability by 6.6% for adults 65 and older. In other words, had the percentage of adults 65 and older in good health remained the same, the disability prevalence in 2014 would have been 0.6 percentage points higher. The decomposition results also suggest the association between subjective health status and disability changed, as evidenced by significant coefficients for adults 40-64 and 65 and older.

However, it is important to recognize that while the prevalence of certain characteristics changed, as did their associations with disability, the factor that explains most of the change in disability between the 2008 and 2014 SIPP Panels is the model constant, which represents the overall level of disability holding all coefficients to their reference values. In other words, the

large coefficient for the model constant suggests that disability is higher in the 2014 Panel in large part due to reasons that are unexplained by this model. After this decomposition exercise, a significant amount of the increase in disability between the 2008 and 2014 SIPP Panel remains unexplained.

We then consider whether some technical error may drive the disability prevalence in the 2014 SIPP Panel. First, we examine whether some interviewer error or rushing may have increased the disability prevalence. We look for evidence of interviewer rushing by examining the amount of time interviewers spent administering the disability section and the average time interviewers spent on each disability item. Table 5 summarizes findings from this part of the analysis.

Table 5 About Here

Our results suggest that interviewers spent more, not less, time on the disability section when the person reported a disability. Many interpretations of this finding are possible; it is possible that some respondents with a disability required accommodation that increased the time spent in the interview. It is also possible that some respondents were unsure if they had a disability and took more time to understand the disability questions. The finding also could suggest that interviewers had some difficulty navigating the instrument when a disability was reported. However, the finding that interviewers took more time when a disability was reported does provide compelling evidence against the hypothesis that interviewers were systematically entering "yes" to disability items as a strategy for rushing through interviews.[14]

To further test whether some data quality issue may explain the increased disability prevalence, we examined response concordance across the 2014 SIPP Wave 1 and 2014 SSA

Supplement for respondents to both studies. While disability questions were generally not repeated across Wave 1 and the SSA Supplement, both surveys did ask if a respondent had difficulty dressing or bathing. Overall, 92.9% of respondents aged 40 and older interviewed both in 2014 Wave 1 SIPP and in the 2014 SIPP SSA Supplement gave the same response when asked if they had difficulty dressing or bathing. Of respondents aged 40 and older who ever reported difficulty, 35.6% reported it in both the 2014 SIPP Wave 1 and 2014 SSA Supplement. In the 2008 SIPP Panel, 95.7% of respondents 40 and older gave the same response to the dressing and bathing question when interviewed in Wave 6 and Wave 7 of the SIPP Panel, and 33.7% of respondents who reported difficulty dressing or bathing gave the same response in both survey waves. Overall, findings would suggest that response concordance is over 90% in both SIPP Panels, suggesting that a technical error is highly unlikely.[15]

We further check whether imputation or weighting unintentionally inflated the disability prevalence in the 2014 SIPP Panel. Table 6 summarizes these results.

Table 6 About Here

Table 6 shows that the disability prevalence is fairly constant in the reported and imputed unweighted data in both the 2008 and 2014 SIPP Panels. Moreover, in both the 2008 and 2014 SIPP Panels, using the survey weights actually lowers the estimated disability prevalence. Again, these findings are inconsistent with any technical error that might have inflated the disability prevalence. Table 6 also shows that the change in the disability prevalence was observed for all disability sub-types; it does not appear to be driven by changes in any particular question.

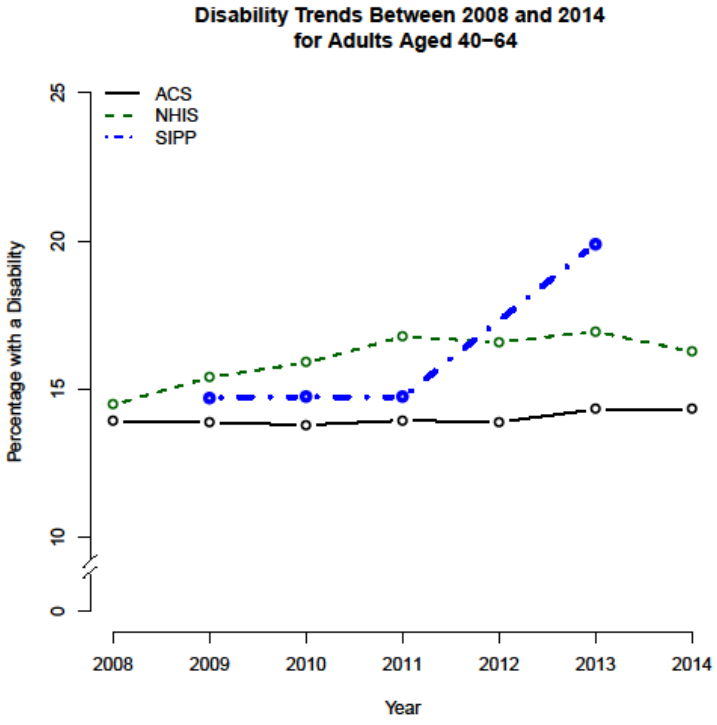
Discussion

This paper attempted to explain why there was a marked increase in the disability prevalence between the 2008 and 2014 SIPP Panel. After performing extensive substantive and technical checks, we remain unable to explain most of the change in disability prevalence across the SIPP Panels. However, we are able to eliminate explanations for the change in disability. First, the descriptive and decomposition analysis show that changes in the sample characteristics explain only a fraction of the change in disability. In the decomposition models run for middle age and older adults, the factor that explained most of the change in the disability prevalence was the model constant, in other words, disability was higher for reasons not well explained by the decomposition. Second, while the large change in disability might seem to suggest a technical error, we have found no evidence that such an error occurred. To the contrary, we find that interviewers spend more time in the disability questions when a disability is reported. Moreover, we find that disability response concordance appears similar across the 2008 and 2014 SIPP Panels, and the 2014 SSA Supplement showed a high prevalence of disability, just as was observed in the SIPP 2014 Wave 1 data. Finally, analysis suggests that imputation and weighting did not unintentionally increase the prevalence of disability in the 2014 SIPP Wave 1.

With these possibilities eliminated, what explanations remain? First, it is possible that the sample selected for the SIPP Sample 2014 Panel simply had a higher prevalence of disability but looked similar to the 2008 SIPP sample on other (observed) characteristics. Second, it is possible that the redesigned SIPP questionnaire primed respondents to think about their disability status in a way that the previous instrument did not. Finally, we cannot rule out some previously unconsidered phenomena, substantive or technical, that might have increased the disability prevalence in the 2014 SIPP Panel.

After considerable review of the 2014 SIPP Panel, we find no reason to doubt the quality of the SIPP data. Rather, every check suggests that data were collected as intended, imputation performed as expected, and weights acted as predicted. While the unexplained rise in disability remains a puzzle, it may also present an opportunity for rigorous research as the 2014 SIPP Panel appears to have a larger sample of respondents with a disability.

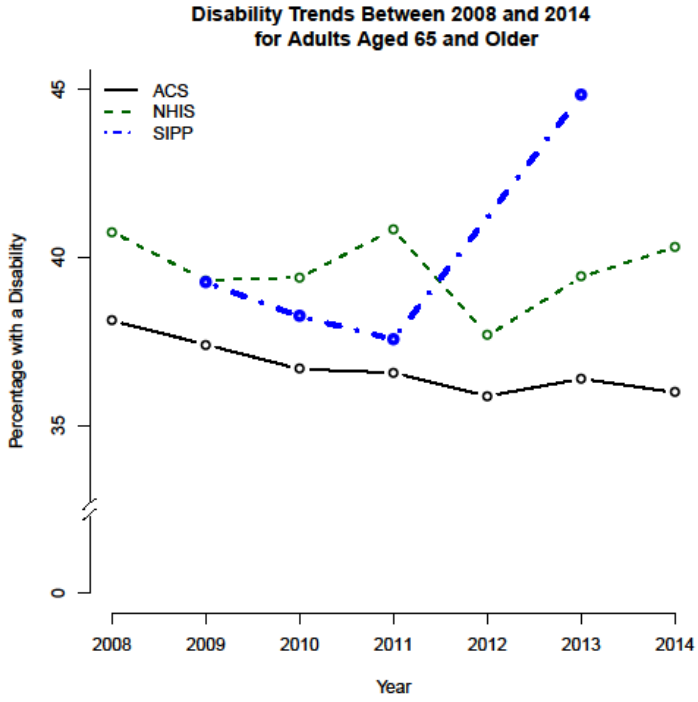
Figure 1A: Trends in Disability for Adults 40-64



Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative population parameters.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation, 2008 through 2014 American Community Survey 1-year files. 2008 through 2014 National Health Interview Survey.

Figure 1B: Trends in Disability for Adults 65 and Older



Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative population parameters.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation, 2008 through 2014 American Community Survey. 2008 through 2014 National Health Interview Survey 1-year files.

Table 1: Basic Demographics Across ACS, NHIS, and SIPP Surveys in 2011 and 2013 for Adults Aged 40 and Older

Survey:	SIPP 2008 Wave 10	SIPP 2014 Wave 1	ACS		NHIS	
Reference Period:	2011	2013	2011	2013	2011	2013
Percent Disabled:	21.2%	27.5%	20.3%	20.9%	23.5%	23.6%
Sex:						
Male	47.4%	47.3%	47.2%	47.2%	47.7%	47.4%
Female	52.6%	52.7%	52.8%	52.8%	52.3%	52.6%
Age:						
40-44	14.6%	13.7%	14.5%	14.1%	14.7%	13.9%
45-49	15.2%	13.9%	15.3%	14.3%	15.2%	14.0%
50-54	15.7%	15.2%	15.6%	15.2%	15.6%	15.6%
55-59	14.0%	14.5%	14.0%	14.3%	13.8%	14.2%
60-64	12.3%	12.4%	12.4%	12.4%	12.7%	12.4%
65-69	8.9%	10.1%	8.9%	9.9%	9.1%	10.1%
70-74	6.6%	7.3%	6.7%	7.2%	6.4%	7.1%
75-79	5.0%	5.4%	5.1%	5.1%	5.3%	5.3%
80+	7.7%	7.5%	7.5%	7.5%	7.4%	7.3%
Race/Ethnicity:						
White Non-Hispanic	72.8%	70.6%	72.0%	71.0%	73.5%	72.0%
Black	10.4%	10.9%	10.5%	10.5%	10.4%	10.5%
Hispanic	10.7%	11.7%	11.4%	12.0%	10.5%	11.5%
Asian	3.7%	4.8%	4.3%	4.6%	4.3%	4.7%
Other	2.4%	2.0%	1.8%	1.9%	1.4%	1.4%
Region:						
South	36.7%	37.3%	36.9%	37.1%	36.1%	37.6%
Midwest	21.9%	21.6%	21.9%	21.7%	23.2%	21.8%
Northeast	19.2%	18.6%	18.8%	18.6%	18.2%	18.6%
West	22.2%	22.5%	22.4%	22.6%	22.5%	22.0%

Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative civilian non-institutionalized population parameters. Standard errors are shown in Appendix Table 1, and the statistical significance of implied comparisons is available upon request.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation, 2011 and 2013 American Community Survey 1-year files. 2011 and 2013 National Health Interview Survey.

Table 2: Detailed Characteristics from the 2008 and 2014 SIPP Panels for 2011 and 2013

Survey:	SIPP 2008 Wave 10	SIPP 2014 Wave 1
Reference Period:	2011	2013
Education:		
Less Than High School	11.1%	12.9%
High School	27.2%	30.8%
Some College	24.2%	17.3%
Bachelors Degree or Higher	37.4%	39.1%
Marital Status:		
Single Never Married	10.2%	10.1%
Married	63.0%	62.8%
Separated	2.0%	2.3%
Divorced	14.9%	15.5%
Widowed	9.8%	9.3%
Employment Status:		
Employed	56.6%	56.0%
Unemployed	3.4%	3.2%
Not In Labor Force	40.0%	40.8%
Subjective Health Status:		
Excellent	17.1%	18.1%
Very Good	33.7%	29.2%
Good	31.0%	30.5%
Fair	13.8%	15.4%
Poor	4.4%	6.9%
Health Care Utilization:		
Average Number of Doctor Visits in Previous Year	5.5	5.9
Average Number of Nights Hospitalized in Previous Year	0.8	1.1
Received Social Security Disability Income:	5.5%	5.5%
Household Poverty Status:		
Less than 100% of federal poverty level	10.4%	9.7%
Between 100%-149% of federal poverty level	9.2%	7.4%
Between 150%-199% of federal poverty level	9.4%	7.9%
Between 200%-399% of federal poverty level	32.4%	29.8%
Above 400% of federal poverty level	38.5%	45.2%

Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative population parameters. Standard errors are shown in Appendix Table 2, and the statistical significance of implied comparisons is available upon request.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation.

Table 3: Summary of Decomposition Results

	Adults 40-64		Adults 65+	
	Percentage Point Difference Between SIPP 2008 Wave 10 and 2014 Wave 1	Percent of Difference Explained by Factor	Percentage Point Difference Between SIPP 2008 Wave 10 and 2014 Wave 1	Percent of Difference
Difference	6.9		8.9	
Endowments	2.6	37.4%	1.1	12.3%
Coefficients	3.9	56.3%	7.5	85.1%
Interactions	0.4	6.3%	0.2	2.6%

Estimates do not use weights and are not intended to be population representative estimates of parameters. Rather, they are presented to facilitate comparisons of the 2008 and 2014 SIPP survey samples. Standard errors are available upon request.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation.

Table 4: Factors that Explain at Least 5% of the Difference in Disability Between 2008 Wave 10 and 2014 Wave 1

Adults 40-64	
Endowments:	
Fair	11.8%
Poor	17.7%
Coefficients:	
Age: 60-64	-5.4%
South	6.3%
Very Good	10.5%
Good	7.7%
Not in the Labor Force	-7.7%
Constant	39.8%
Interactions:	
Very Good	-5.1%
Poor	6.2%
Adults 65+	
Endowments:	
Age: 80+	-7.2%
Good	-6.6%
Fair	6.2%
Poor	25.4%
Coefficients:	
Age: 70-74	10.2%
Age: 75-79	6.1%
Age: 80+	11.5%
Female	-13.1%
South	13.2%
Very Good	13.4%
Good	18.2%
Fair	6.0%
Poor	7.4%
Not in the Labor Force	-31.6%
Medical Provider Visits	15.7%
Constant	35.3%
Interactions:	

Estimates do not use weights and are not intended to be population representative estimates of parameters. Rather, they are presented to facilitate comparisons of the 2008 and 2014 SIPP survey samples. Standard errors are available upon request. No interactions are shown as no interaction explains at least 5% of the change in the disability prevalence.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation.

Table 5: Time Spent in Disability Section by Disability Status in the 2014 Wave 1 SIPP Panel Among Adults 40 and Older

	No Disability Reported	Disability Reported
Average Time to Complete Disability Section (In Seconds)	33.3	59.6
	(35.5)	(47.6)
Average Time Per Disability Item Viewed (In Seconds)	4.5	7.7
	(4.5)	(6.1)
Standard Deviation in Parentheses		

Estimates do not use weights and are not intended to be population representative estimates of parameters. Rather, they are intended to provide information about SIPP interviews.

Source: U.S. Census Bureau, 2014 Survey of Income and Program Participation.

Table 6: Disability by Imputation and Weighting Status in the 2008 and 2014 SIPP Panels

	Unimputed, Unweighted		Imputed, Unweighted		Imputed, Weighted	
	2008 Wave 10	2014 Wave 1	2008 Wave 10	2014 Wave 1	2008 Wave 10	2014 Wave 1
Reference Period:	2011	2013	2011	2013	2011	2013
Percent Disabled:	23.2	30.9	22.9	30.6	21.2	27.5
Percent with Difficulty:						
Seeing	6.9	10.3	6.9	10.2	6.3	9.3
Hearing	4.1	7.0	4.0	6.9	3.7	5.9
Walking or Climbing Stairs	6.8	11.2	6.7	11.1	6.2	9.8
Concentrating or Making Decisions	15.6	19.6	15.4	19.5	14.0	16.9
Dressing or Bathing	4.5	6.2	4.4	6.2	4.0	5.4
Running Errands	8.4	10.7	8.2	10.7	7.5	9.3

2008 SIPP Wave 10 and 2014 SIPP Wave 1, Adults Aged 40 and Older

Some estimates do not use weights and are not intended to be population representative estimates of parameters. Rather, they are intended to provide information about how SIPP estimates change in response to the use of imputation and weights.

Source: U.S. Census Bureau, 2014 Survey of Income and Program Participation.

References

Freedman, V. A., Martin, L. G., & Schoeni, R. F. (2002). Recent trends in disability and functioning among older adults in the United States: a systematic review. *Jama*, *288*(24), 3137-3146.

Freedman, V. A., Spillman, B. C., Andreski, P. M., Cornman, J. C., Crimmins, E. M., Kramarow, E., ... & Seeman, T. E. (2013). Trends in late-life activity limitations in the United States: an update from five national surveys. Demography, 50(2), 661-671.

Martin, L. G., & Schoeni, R. F. (2014). Trends in disability and related chronic conditions among the forty-and-over population: 1997–2010. Disability and health journal, 7(1), S4-S14.

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[1] Some use the terms "limitation" and "disability" interchangeably. In this paper, we use the term "limitations" to refer to limitations in activities of daily living or limitations in instrumental activities of daily living. We use the term "disability" to refer to the presence of an impairment using the standard six questions used to capture disability in federal surveys.

[2] For more information on the ACS, visit https://www.census.gov/programs-surveys/acs/. For information on confidentiality protection, sampling error, non-sampling error and definitions, visit https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html.

[3] Most variables in 2014 Wave 1 SIPP refer to calendar year 2013; however, disability status is measured in the first six months of 2014. Throughout this paper, we refer to 2014 Wave 1 disability status as disability as of 2013 because data is weighted to be representative of the U.S. population in December 2013.

[4] Changes in disability prevalence were not statistically different from 0 for adults 40-64 or over the age of 65.

[5] The analytic sample is restricted to the civilian non-institutionalized population excluding island areas and Puerto Rico.

[6] Change in disability prevalence for adults 40-64 was statistically significant at $p<.05$; it was significant at $p<.10$ for adults 65 and older.

[7] During each wave, the SIPP is administered to all members of a sampled household as well as members who joined the household after the panel began. Respondents who move out of an originally sampled household are also followed over the panel.

[8] Interviews for Wave 10 of the 2008 SIPP Panel were conducted in the first few months of calendar year 2012.

[9] For more information on the ACS, visit https://www.census.gov/programs-surveys/acs/. For information on confidentiality protection, sampling error, non-sampling error and definitions, visit https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html.

[10] All analyses are done using internal Census Bureau Data files. Findings cannot be reproduced using public use data files.

[11] There was a larger change in the percentage of the population that had some college education. However, this change is partially offset by an increase in the percentage of the population that had completed a 4-year college degree.

[12] For adults aged 65 and older, the interaction term is not statistically significant.

[13] If health status and health care utilization (which are endogenous with current disability status) are omitted from the models, endowments explain just 12% of the change in disability for adults aged 40-64 and 0% of the change in disability for adults 65 and older.

[14] We also performed sensitivity checks that examined the clustering of disability within particular households and within geographies. These analyses revealed that while the disability prevalence in 2014 was higher than it had been in 2008, the clustering of disability within household was similar across the two panels; this finding again suggests no unusual interviewer behavior.

[15] The overall concordance in responses may have decreased between the 2008 and 2014 SIPP Panels due to the increase in disability prevalence overall. People who ever report a disability generally have lower response

concordancy. Apparent differences across panels may not be statistically significant given that there is no appropriate statistical test.

Appendix: Supplemental Tables

Appendix Table 1: Basic Demographics Across ACS, NHIS, and SIPP Surveys in 2011 and 2013 for Adults Aged 40 and Older with Standard Errors Shown

Survey:	SIPP 2008 Wave 10		SIPP 2014 Wave 1		ACS				NHIS			
Reference Period:	2011		2013		2011		2013		2011		2013	
Statistic:	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Percent Disabled:	21.2%	0.2	27.5%	0.3	20.3%	Z	20.9%	Z	23.5%	0.4	23.6%	0.4
Sex:												
Male	47.4%	0.3	47.3%	0.3	47.2%	Z	47.2%	Z	47.7%	0.2	47.4%	0.3
Female	52.6%	0.3	52.7%	0.3	52.8%	Z	52.8%	Z	52.3%	0.2	52.6%	0.3
Age:												
40-44	14.6%	0.2	13.7%	0.2	14.5%	Z	14.1%	Z	14.7%	0.3	13.9%	0.3
45-49	15.2%	0.2	13.9%	0.2	15.3%	Z	14.3%	Z	15.2%	0.3	14.0%	0.3
50-54	15.7%	0.2	15.2%	0.2	15.6%	Z	15.2%	Z	15.6%	0.3	15.6%	0.3
55-59	14.0%	0.2	14.5%	0.2	14.0%	Z	14.3%	Z	13.8%	0.3	14.2%	0.3
60-64	12.3%	0.2	12.4%	0.2	12.4%	Z	12.4%	Z	12.7%	0.3	12.4%	0.3
65-69	8.9%	0.2	10.1%	0.2	8.9%	Z	9.9%	Z	9.1%	0.2	10.1%	0.2
70-74	6.6%	0.1	7.3%	0.2	6.7%	Z	7.2%	Z	6.4%	0.2	7.1%	0.2
75-79	5.0%	0.1	5.4%	0.1	5.1%	Z	5.1%	Z	5.3%	0.2	5.3%	0.2
80+	7.7%	0.1	7.5%	0.2	7.5%	Z	7.5%	Z	7.4%	0.3	7.3%	0.3
Race/Ethnicity:												
White Non-Hispanic	72.8%	0.3	70.6%	0.3	72.0%	Z	71.0%	Z	73.5%	0.5	72.0%	0.5
Black	10.4%	0.2	10.9%	0.2	10.5%	Z	10.5%	Z	10.4%	0.3	10.5%	0.3
Hispanic	10.7%	0.2	11.7%	0.2	11.4%	Z	12.0%	Z	10.5%	0.3	11.5%	0.3
Asian	3.7%	0.1	4.8%	0.1	4.3%	Z	4.6%	Z	4.3%	0.2	4.7%	0.2
Other	2.4%	0.1	2.0%	0.1	1.8%	Z	1.9%	Z	1.4%	0.1	1.4%	0.1
Region:												
South	36.7%	0.3	37.3%	0.3	36.9%	Z	37.1%	Z	36.1%	0.6	37.6%	0.6
Midwest	21.9%	0.2	21.6%	0.2	21.9%	Z	21.7%	Z	23.2%	0.6	21.8%	0.5
Northeast	19.2%	0.2	18.6%	0.3	18.8%	Z	18.6%	Z	18.2%	0.5	18.6%	0.4
West	22.2%	0.2	22.5%	0.3	22.4%	Z	22.6%	Z	22.5%	0.5	22.0%	0.5

1. Z indicates estimate rounds to 0.

Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative population parameters.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation, 2008 through 2014 American Community Survey 1-year files. 2008 through 2014 National Health Interview Survey. For more information on the ACS, visit https://www.census.gov/programs-surveys/acs/. For information on confidentiality protection, sampling error, non-sampling error and definitions, visit https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html.

Appendix Table 2: Detailed Characteristics from the 2008 and 2014 SIPP Panels for 2011 and 2013

Survey:	SIPP 2008 Wave		SIPP 2014 Wave 1	
Reference Period:	2011		2013	
Statistic:	Estimate	Standard Error	Estimate	Standard Error
Education:				
Less Than High School	11.1%	0.2	12.9%	0.2
High School	27.2%	0.2	30.8%	0.3
Some College	24.2%	0.2	17.3%	0.2
Bachelors Degree or Higher	37.4%	0.3	39.1%	0.3
Marital Status:				
Single Never Married	10.2%	0.2	10.1%	0.2
Married	63.0%	0.3	62.8%	0.3
Separated	2.0%	0.1	2.3%	0.1
Divorced	14.9%	0.2	15.5%	0.2
Widowed	9.8%	0.2	9.3%	0.2
Employment Status:				
Employed	56.6%	0.3	56.0%	0.3
Unemployed	3.4%	0.1	3.2%	0.1
Not In Labor Force	40.0%	0.3	40.8%	0.3
Subjective Health Status:				
Excellent	17.1%	0.2	18.1%	0.2
Very Good	33.7%	0.3	29.2%	0.3
Good	31.0%	0.3	30.5%	0.3
Fair	13.8%	0.2	15.4%	0.2
Poor	4.4%	0.1	6.9%	0.1
Health Care Utilization:				
Average Number of Doctor Visits in 2013	5.5	0.1	5.9	0.1
Average Number of Nights Hospitalized in 2013	0.8	0.0	1.1	0.0
Received Social Security Disability Income:	5.5%	0.1	5.5%	0.1
Household Poverty Status:				
Less than 100% of federal poverty level	10.4%	0.2	9.7%	0.2
Between 100%-149% of federal poverty level	9.2%	0.2	7.4%	0.2
Between 150%-199% of federal poverty level	9.4%	0.2	7.9%	0.2
Between 200%-399% of federal poverty level	32.4%	0.3	29.8%	0.3
Above 400% of federal poverty level	38.5%	0.3	45.2%	0.3

Estimates are presented using appropriate survey weights and can thus be interpreted as being estimates of nationally representative population parameters.

Source: U.S. Census Bureau, 2008 Survey of Income and Program Participation, 2014 Survey of Income and Program Participation.