Social Security Disability Insurance and Supplemental Security Income Beneficiaries with Multiple Impairments

by Elisa Walker and Emily Roessel*

We use data from the Social Security Administration's National Beneficiary Survey and agency administrative records to estimate the number and examine the characteristics of adult disability-program beneficiaries with multiple impairments. We find that most beneficiaries report conditions in more than one impairment category, and that beneficiaries with multiple impairments tend to have more activity limitations and poorer health than those reporting one impairment. Beneficiaries with multiple self-reported impairments also tend to be older and to have higher household incomes than those with one impairment, and are less likely to have work-related goals and expectations. Administrative data record fewer impairments per beneficiary and do not necessarily reflect the condition(s) that the beneficiary considers most limiting. Although the administrative data are complete for their purpose, we find that they may underrepresent the totality of disability that beneficiaries experience, and thus may be less predictive of employment and other outcomes than survey data.

Introduction

To receive Social Security Disability Insurance (DI) or Supplemental Security Income (SSI) benefits, applicants must prove that they have a significant and long-lasting disability that makes them unable to work. Using its own administrative data, the Social Security Administration (SSA) publishes statistics on beneficiaries' disabling impairments in several publications, including the *Annual Statistical Report on the Social Security Disability Insurance Program* and the *SSI Annual Statistical Report*. However, although many beneficiaries have multiple disabilities, the agency's administrative records capture information on no more than two impairments per beneficiary. Further, even when administrative records include both a primary and a secondary impairment, SSA's statistical publications typically report only the primary impairment.

By contrast, a survey of beneficiaries allows respondents to report any number of disabilities or conditions that limit the work they can do. Using data from SSA's National Beneficiary Survey (NBS), a nationally representative sample of adult DI and SSI beneficiaries, we estimate the number and explore the characteristics of beneficiaries with multiple impairments. We also examine the concurrence, or overlap, between the impairments reported in the survey and those recorded in administrative data. This analysis builds on an extensive literature on the prevalence of multiple chronic conditions (MCC) among the general population by examining a similar concept among SSA disability-program beneficiaries.

Selected Abbreviations

ADL	activity of daily living
DI	Disability Insurance
eCAT	Electronic Case Analysis Tool
HHS	Department of Health and Human Services
IADL	instrumental activity of daily living
MCC	multiple chronic conditions

* When this article was written, Elisa Walker was with the Office of Research, Demonstration, and Employment Support (ORDES), Office of Retirement and Disability Policy (ORDP), Social Security Administration (SSA). Emily Roessel is with ORDES, ORDP, SSA.

We find that most NBS respondents report more than one impairment, and that beneficiaries with multiple impairments tend to have more activity limitations and poorer health than those reporting one impairment (or none at all—a circumstance we explain later). They also tend to be older and to have higher household incomes, and they are less likely to have work-related goals and expectations. These results are consistent with the large body of literature finding that multiple impairments are associated with poorer health, employment, and economic outcomes. Because administrative data may provide an incomplete picture of beneficiaries' impairments, they may be less predictive of outcomes than are survey results.

Throughout this article, we use "conditions" to mean specific diagnoses or health conditions, and "impairment categories" to mean groupings of those conditions by body system or diagnosis type. For instance, depression and schizophrenia are specific conditions that both fall within the "mental disorder" impairment category. We use the term "beneficiaries" to refer to both DI beneficiaries and SSI recipients.

Literature Review

A brief review of the literature on multimorbidity (the simultaneous presence of multiple medical ailments in the same individual) and MCC provides context for this analysis. The definition of MCC may vary between studies. The Department of Health and Human Services (HHS) suggests a broadly applicable working definition of MCC as two or more conditions "that last a year or more and require ongoing medical attention and/or limit activities of daily living" (HHS 2010). Not all of these chronic conditions are severe enough or cause enough work limitation to lead to a benefit allowance under SSA's strict disability criteria. Many of the most common chronic conditions cited in the health literature—such as diabetes, obesity, chronic heart conditions, and arthritis—may be present for many years before causing functional or work limitations.

In the large and growing body of research on the prevalence and patterns of MCC, studies generally find that MCC affects a significant share of the U.S. population and drives a disproportionately large share of health care spending. As expected, multimorbidity and MCC are associated with poorer outcomes in health, disability, and employment. The few studies that focus on multimorbidity and MCC among SSA's disability-program beneficiaries find high prevalence of multimorbidity and mixed evidence about its effects on allowance rates.

Health-Related Research

Studies agree that living with MCC is common—the prevalence is generally estimated at around one-quarter to one-third of the U.S. population (HHS 2010; Ward and Schiller 2013; Gerteis and others 2014; Violan and others 2014). Using the 2010 Medical Expenditure Panel Survey, Gerteis and others (2014) found that nearly one-third of Americans (32 percent) had two or more chronic conditions, and 14 percent had four or more. The National Comorbidity Survey Replication found comorbidity to be "the norm for both mental and physical disorders," with three-quarters or more of respondents who have any given condition reporting at least one additional condition (Gadermann and others 2012). Because people with MCC require complex and costly health care, they are of interest to researchers in many health-related fields of study.

The prevalence of MCC increases significantly with age: It affects less than 7 percent of all children younger than 18, 18 percent of individuals aged 18–44, 49 percent of those aged 45–64, and 80 percent of those aged 65 or older (Gerteis and others 2014). Overall, the trend in prevalence appears to be increasing, partly because of the rising median age of the population (Ward and Schiller 2013; Gerteis and others 2014). Prevalence also tends to be higher for certain subpopulations with complex health needs, such as Medicare beneficiaries and those who are dually eligible for Medicare and Medicaid coverage (Centers for Medicare & Medicaid Services 2012, 2015).

People with MCC require far more health care than others do and, as a result, they account for a disproportionate amount of health care spending. The 32 percent of Americans with MCC account for 71 percent of health care spending, as well as 83 percent of prescriptions (Gerteis and others 2014). Similarly, in traditional (that is, fee-for-service) Medicare, the 15 percent of beneficiaries with six or more conditions accounted for 51 percent of fee-for-service spending and 77 percent of 30-day hospital readmissions (Centers for Medicare & Medicaid Services 2015). Lee and Anderson (2005) found that the presence of MCC was a strong indicator of sustained high Medicare costs.

MCC is associated with various types of poor health outcomes, such as mortality, nonresponse to treatment, and low health-related quality of life (Bair and others 2003; Arnow and others 2006; Charlson and others 1987; Lee and others 2007). HHS (2010) called for a "paradigm shift" in addressing MCC, with treatment changes such as holistic or person-centered care and better coordination across medical specialty areas.

Occupational Rehabilitation and Disability Research

Studies on occupational rehabilitation and disability tend to find that the presence of multiple conditions is associated with higher rates of functional or activity limitation and lower rates of employment or labor force participation.

In a seminal study, Verbrugge, Lepkowski, and Imanaka (1989) found that the prevalence of disability increased sharply as an individual's number of chronic diseases rose. More recent studies also found that certain combinations of conditions have stronger effects on work and disability than would be expected of simply adding the two conditions' effects. For example, Kessler and others (2001) used data from a nationally representative sample to examine how chronic conditions affect work impairment (measured in days of work loss or cutback) and found that certain comorbidities were "associated with higher impairments than expected on the basis of an additive model." In addition, a cross-national study using data from the World Mental Health Surveys found that physical and mental comorbidity had "modest synergistic effects" on the probability of experiencing severe disability (Scott and others 2009).

In a broad literature review, McAlpine and Warner (2002) found that people with both physical and mental disorders have "consistently lower employment rates" than those with only one type of condition (that is, either physical or mental). Specifically, they report that "across national surveys approximately 20% fewer of individuals with both physical and mental conditions report being employed than individuals with a physical condition." Using data on people with severe psychiatric conditions in a randomized supported employment trial, Cook (2016) and Cook and others (2007) found that the presence of co-occurring conditions negatively affects labor force participation. Having an additional condition, especially a mental one, was associated with poorer employment outcomes including lower earnings, fewer hours worked, and less likelihood of competitive employment.

Research on SSA Disability-Program Beneficiaries

Although relatively few studies have examined multiple disabling conditions among SSA disability-program beneficiaries, those few have revealed some recurring patterns. For instance, studies using different data sources have found similarly high rates of multimorbidity. Using administrative data from SSA, Meseguer (2018) found that 71 percent of applicants filing an initial DI claim in 2009 had a secondary impairment, an increase from 56 percent in 1997. Since at least 2007, periodic studies using NBS data have consistently found that more than 60 percent of beneficiaries report two or more limiting health conditions; the rate for 2015 was 67 percent (SSA 2018). The General Accounting Office (2003) studied administrative law judge (ALJ) award decisions during 1997–2000 and found that 36 percent of claimants had one or two impairments, 39 percent had three or four impairments, and 25 percent had five or more impairments. Further, 13 percent of claimants were found to have three or more "severe" impairments (that is, impairments considered to meet medical criteria contained in SSA's Listing of Impairments at step 3 of the five-step disability determination process).[1] In some studies, prevalence varied among certain beneficiary groups. For example, employed beneficiaries reported multiple conditions in the 2015 NBS at much lower rates than unemployed beneficiaries did, and rates differed slightly between SSI and DI beneficiaries (SSA 2018).

Evidence is mixed as to whether disability-benefit claims filed by people with multiple impairments are more likely to be allowed benefits, with some indications that results may differ by level of the disability determination process. Cook (2016) found that the presence of comorbidities among people with psychiatric disorders was not correlated with different rates of DI or SSI enrollment. However, Rupp (2012) found that the presence of a secondary impairment in SSA records had a small but statistically significant *negative* effect on initial-level allowance rates for adults.[2] Similarly, an unpublished internal SSA analysis found that initial-level DI claimants are more likely to be allowed with only a primary impairment; however, that pattern was reversed at the ALJ level. Godtland and others (2007) also found that claimants with multiple impairments, especially multiple severe impairments, are more likely to be allowed at the ALJ level. These results suggest that the presence of multiple impairments may affect determination outcomes

differently across decision levels. A relatively greater prevalence of allowances at the initial adjudication level for claimants with no recorded secondary diagnosis may indicate that primary diagnoses allowed at this level tend toward greater severity and reflect the absence of further case development (which stops as soon as a case can be allowed). For instance, higher percentages of cancers and certain other conditions may clearly meet or equal the medical criteria in SSA's Listing of Impairments. By contrast, for allowances at the ALJ level, the presence of multiple impairments may signal greater severity. Because cases allowed at this level were initially denied, the evidence for allowance is less likely to be straightforward. Moreover, enough time may have elapsed for the claimant's health to deteriorate further or for the claimant to reach an age threshold that affects his or her classification for purposes of disability determination. Thus, it may be more necessary to develop and document the claimant's full range of impairments.

In analyzing patterns in the primary and secondary impairments recorded in administrative data for DI disabled-worker claimants filing initial claims in 2009, Meseguer (2018) found that mental impairments tend to have a "positive correlation with related mental impairments," and that mental and musculoskeletal impairments are negatively correlated, perhaps partly because they peak at different ages.[3] Another study found that nearly one-third of beneficiaries with intellectual disability had a nonintellectual disability as a primary or secondary impairment—most often, a psychiatric condition (Livermore, Bardos, and Katz 2017).

In this article, we add to the current literature by using NBS data to comprehensively examine the numbers and types of multiple self-reported disabling impairments and the characteristics of the adult disability-program beneficiaries who report them. Using matched administrative data, we also estimate the extent to which the impairments recorded in the survey and administrative data concur. Our findings shed light on the relative advantages of each data source and suggest that the survey data allow a fuller understanding of the beneficiary's experience of living with disabilities.

Data and Methodology

In describing our data sources, we discuss the survey data first, then the administrative data. We then describe our study methodology, focusing on how we classify impairment types.

Survey Data

We used the 2015 NBS Restricted Access File to look at the self-reported disabling impairments and other characteristics of SSA disability-program beneficiaries.[4] The 2015 NBS collected data from 4,062 DI beneficiaries and SSI recipients aged 18 to full retirement age. Respondents included DI disabled-worker, disabled adult child, and disabled-widow(er) beneficiaries; and SSI recipients who were blind and/or disabled. The respondents represented beneficiaries from all 50 states and the District of Columbia who were in current-pay status as of June 2014. Data collection began in February 2015 and ended in October 2015. Statistics based on NBS results are weighted to represent the target population.

Each NBS respondent[5] was asked to list the primary and secondary physical or mental conditions that limited the type or amount of work or daily activities that he or she could perform. Specifically, respondents were first asked whether "a physical or mental condition limit[s] the kind or amount of work or other daily activities you can do," and if so, "What physical or mental condition is the main reason you are limited?" Approximately 87 percent of respondents listed a primary limiting condition in response to the latter question. Although the question referred to a singular "main" condition, many respondents listed more than one. (In compiling the survey results, administrators recorded all such multiple responses as primary conditions in the order in which the respondent listed them.) The next question asked the respondent to list "any other physical or mental conditions" that limited the type or amount of work or daily activities he or she could do.[6] Administrators recorded these responses as secondary conditions. In this analysis, we do not distinguish between conditions recorded as primary and those recorded as secondary, because many respondents listed multiple conditions in each of those groups. Respondents' answers to these open-ended questions were coded as particular diagnoses based on the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) coding scheme, using "the highest level of specificity possible" (Wright and others 2017). The ICD-9-CM codes were then arranged by diagnosis group.[7]

Administrative Data

The NBS data file includes some administrative records from SSA in addition to the survey results. We use that information to identify the primary and

secondary diagnoses that were recorded in the SSA data at the time of the survey sampling.

SSA diagnosis codes were recorded during the disability determination process or during a medical redetermination. They reflect the specific condition(s) for which each beneficiary was considered disabled under SSA's standards. The Social Security Disability Benefits Reform Act of 1984 requires SSA to consider "the combined effect of all of the individual's impairments" for both DI and SSI disability determinations, and SSA's policy instructions in the Program Operations Manual System (POMS) instruct disability examiners to "evaluate all of the medical evidence in the file" (SSA 2017b). However, no more than two diagnoses—one primary and one secondary—may be recorded in the applicant's file. The instructions specify that the primary diagnosis code should reflect "the basic condition that rendered the person disabled," and the secondary diagnosis code should reflect "the most significant diagnosis following the primary diagnosis in severity" (SSA 2017b).[8]

In practice, additional operational considerations may affect whether certain condition(s) are recorded as a beneficiary's primary or secondary diagnosis in the administrative data. As noted earlier, case development generally stops once there is sufficient evidence for a benefit allowance, so a secondary diagnosis may not be recorded if a case is allowed based on the primary diagnosis. Thus, the primary impairment recorded in the administrative data may be the one that is easiest to document as a condition that meets or equals medical criteria in SSA's Listing of Impairments—and the lack of a secondary diagnosis in the administrative data does not necessarily mean that the claimant had no other conditions. Particularly in a time of constrained agency resources, it may not be realistic to expect examiners to document additional limitations when one is sufficient to justify disability benefits. In addition, the coding of impairments as primary and secondary depends in part on the judgment of the individual disability examiner, and examiners' views on what constitutes the main disabling condition may differ (Hemmeter 2012). Further, case development depends heavily on the quality and quantity of the evidence provided by the applicant, and some individuals may not sufficiently document a condition that SSA might otherwise code into the record. Finally, disabled adult children typically did not have diagnoses recorded in the administrative data until 1984 (SSA 2017a), and many current beneficiaries were entitled before that date.

Impairment Categories

Although both the survey results and the administrative data designate beneficiaries' conditions as either primary or secondary, we chose to disregard that distinction and simply include all conditions that were present for each respondent. This was mainly because many survey respondents listed multiple conditions in each of those groups and because policy considerations and examiners' discretion may affect primary or secondary designations in the administrative data. Moreover, our goal in this analysis was to capture the totality of beneficiaries' multiple and overlapping disability burdens, recognizing that they may not be cleanly separable into a single "primary" and a single "secondary" condition. Including all conditions together offered the best avenue toward a holistic analysis.

As described above, the survey data and the administrative data each contain specific diagnoses, which we call *conditions*. For this analysis, we grouped the specific conditions into broad *impairment categories,* based on body system and diagnosis type—such as musculoskeletal disorders, mental disorders, circulatory system diseases, and neoplasms. Box 1 presents the list of impairment categories we use. Note that we consider intellectual disability a separate category rather than a subgroup of the mental disorders category, acknowledging the widespread recognition of its unique nature among the mental disorders.

To illustrate our distinction between specific conditions and broader impairment categories, consider an individual who reports schizophrenia and depression in the NBS, or whose administrative data show a primary impairment of schizophrenia and a secondary impairment of depression. We consider this person to have two conditions (schizophrenia and depression) within the single impairment category of mental disorders. Another person might also have two conditions, such as hearing loss and ischemic heart disease; however, those conditions would fall under two different impairment categories (sensory disorder and circulatory system disease, respectively).

Distinguishing between specific conditions and broader impairment categories serves several purposes. First, the broader impairment categories allow for a more meaningful analysis of the very large range of possible medical conditions, with clearer patterns observable among the more limited number of categories. Second, this distinction helps one to

Box 1.
Impairment categories used in this analysis

Blood or blood-forming organs disease
Circulatory system disease
Congenital anomaly
Digestive system disease
Endocrine or nutritional disorder

Genitourinary system disease
Infectious or parasitic disease
Injury or poisoning
Intellectual disability
Mental disorder

Musculoskeletal disorder
Neoplasm
Nervous system disease
Respiratory system disease
Sensory disorder
Skin or subcutaneous tissue disease
Other [a]

SOURCE: Authors' definitions based on Wright and others (2017).

a. Includes other and unspecified infectious and parasitic disease; alcohol dependence syndrome and drug dependence; learning disorders and developmental speech or language disorders; complications of pregnancy, childbirth, and the puerperium; conditions in the perinatal period; symptoms, signs, and ill-defined conditions; complications of medical care not elsewhere classified; and physical problems not elsewhere classified.

understand the implications of multiple impairments, as some of the literature suggests that outcomes may be associated with the presence of multiple conditions in ways that differ from the outcomes associated with multiple impairment categories. For instance, McAlpine and Warner (2002) noted consistently lower employment rates for people with both physical and mental disorders than those for people with only physical or only mental disorders. Finally, analyzing at a category level may increase the dependability of the survey data, given the challenges of coding very specific conditions from open-ended survey answers and the small sample sizes for certain individual conditions.

Results

In this section, we present the numbers and characteristics of beneficiaries with multiple impairments, based on NBS and administrative data. We also examine whether and how beneficiary characteristics vary by the number of impairment categories their reported limiting conditions represent.

Impairment Categories and Beneficiaries with Multiple Impairments

We first examine the frequency with which beneficiaries reported specific limiting conditions, shown in Table 1 at the broad impairment-category level. Because respondents could report multiple conditions, the percentages in Table 1 add to more than 100 percent.

The most commonly self-reported impairment categories were musculoskeletal disorders and mental disorders, reported by 42 percent and 35 percent of all beneficiaries, respectively. Circulatory and nervous system diseases and endocrine or nutritional disorders were also reported by more than 15 percent of all beneficiaries.

For more than half of the impairment categories, the differences in percentages across programs were statistically significant. DI-only beneficiaries were more likely to report musculoskeletal disorders (49 percent) than were recipients of concurrent benefits (about 39 percent) and SSI-only recipients (about 30 percent). By contrast, recipients of SSI (alone and concurrent with DI) were more likely to report mental disorders and intellectual disability. Forty-two percent of SSI-only recipients reported a mental disorder and almost 8 percent reported an intellectual disability, compared with 30 percent and 3 percent, respectively, for DI-only beneficiaries. This is consistent with the fact that DI-only beneficiaries tend to be older than SSI-only and concurrent DI/SSI beneficiaries, and that musculoskeletal disorders are more prevalent at older ages while mental impairments are more common among younger beneficiaries (SSA 2018).

Table 2 shows the distribution of beneficiaries by the number of impairment categories that appear in their administrative files and the NBS. Slightly more than half of all beneficiaries had a single impairment category recorded in the administrative data, meaning that nearly half had two impairment categories recorded.[9] Concurrent DI/SSI beneficiaries were less likely to have diagnoses in two impairment categories. In the survey data, the shares of beneficiaries with multiple impairment categories were substantially higher, as expected. About one-quarter of beneficiaries reported one or more conditions in one impairment category. Two-thirds of all beneficiaries reported conditions reflecting multiple impairment categories, including almost 15 percent who reported conditions in four or more impairment categories. On average, beneficiaries reported having conditions in slightly more than two impairment categories.

Table 1.

Disability-program beneficiaries reporting selected conditions in the NBS, by impairment category and program type, 2015 (in percent)

Impairment category	All beneficiaries	DI only	SSI only	Concurrent DI and SSI
Musculoskeletal disorder [a]	42.1	49.2	29.5	38.5
Mental disorder [a]	35.4	30.0	42.0	43.4
Circulatory system disease [a]	20.6	24.1	15.4	17.1
Nervous system disease [a]	17.0	19.1	13.0	16.3
Endocrine or nutritional disorder	15.8	15.8	14.7	18.3
Injury or poisoning [a]	14.9	16.6	11.4	14.9
Respiratory system disease	11.1	10.6	12.7	10.5
Sensory disorder	8.1	7.9	8.1	9.0
Infectious or parasitic disease	6.9	6.9	7.5	6.1
Digestive system disease	6.3	6.3	6.0	7.1
Neoplasm [a]	5.2	6.6	3.2	4.0
Intellectual disability [a]	5.2	2.6	7.5	10.7
Congenital anomaly [a]	3.6	2.7	4.8	4.5
Genitourinary system disease	3.1	2.8	2.8	4.8
Blood or blood-forming organs disease	1.4	1.2	1.4	2.3
Skin or subcutaneous tissue disease	0.9	1.0	0.9	0.6
Other [a]	16.8	14.5	19.3	20.6
Number				
Unweighted	4,062	1,666	1,563	833
Weighted	12,896,735	7,347,758	3,604,355	1,944,622

SOURCE: Authors' calculations based on 2015 NBS.

NOTE: Respondents can report multiple impairments.

a. Cross-program differences are statistically significant at the 5 percent level (chi-square test).

Notably, 8 percent of all beneficiaries reported no limiting conditions—that is, no physical or mental conditions that limit the type or amount of work or daily activities that they perform. This could indicate that their condition(s) had improved since benefit allowance or the latest medical redetermination, or that mental or other impairments were underreported in the survey (Bharadwaj, Pai, and Suziedelyte 2015). Moreover, some individuals with disabilities may consider society—and not their condition(s)—to be limiting or disabling (Oliver 2004; Goering 2015). In a short video produced by the British disability charity Scope, a participant declares, "I'm disabled by the world around me, and if the world was more accessible, I would be less disabled" (Scope 2014). Under this view, known as the social model of disability, individuals may attribute their work limitations not to their impairment, as the NBS question asks, but rather to society's lack of inclusiveness. Later, we will discuss what the administrative data show about the NBS respondents reporting no limitations.

In general, DI-only beneficiaries and concurrent DI/SSI beneficiaries were somewhat more likely to report conditions in multiple impairment categories (69 percent and 68 percent, respectively) than were SSI-only beneficiaries (61 percent). SSI-only and concurrent DI/SSI beneficiaries were also more likely to report having no conditions (13 percent and 10 percent, respectively) than were DI-only beneficiaries (6 percent), consistent with the relatively high prevalence of mental disorders and intellectual disability among the SSI-only and concurrent DI/SSI population.

Table 3 shows the percentage of NBS beneficiaries who reported multiple limiting conditions within each impairment category. For instance, a report of schizophrenia and depression would be counted here as two or more conditions within the mental disorder category, whether or not that person also reported any conditions in other impairment categories.

The highest rates of within-category multiple conditions occurred in musculoskeletal and mental

Table 2.
Number of impairment categories indicated in administrative and survey data for disability-program beneficiaries, by program type, 2015 (in percent)

Source and number	All beneficiaries	DI only	SSI only	Concurrent DI and SSI
Administrative data				
1	50.9	49.3	49.8	58.8
2	48.5	50.4	48.7	40.9
Diagnosis code(s) missing	0.7	0.3	1.5	0.3
Survey data				
0	8.2	5.5	12.9	9.7
1	25.3	25.6	26.4	21.9
2 or more	66.6	68.9	60.7	68.4
2	32.4	34.4	30.7	28.1
3	19.4	20.0	16.4	22.7
4 or more	14.8	14.6	13.7	17.6
Average	2.1	2.2	[a] 2.0	2.3

SOURCE: Authors' calculations based on 2015 NBS and matched administrative records from SSA.

NOTES: All cross-program differences in number of impairment categories are statistically significant at the 5 percent level (chi-square test).

Rounded components of percentage distributions do not necessarily sum to 100.0.

a. Difference from the value for DI-only beneficiaries is statistically significant at the 5 percent level (two-tailed test).

Table 3.
Disability-program beneficiaries reporting one or multiple conditions within each impairment category, 2015 (in percent)

Impairment category	Total	One condition	Multiple conditions
Musculoskeletal disorder	100.0	58.7	41.3
Mental disorder	100.0	61.8	38.2
Circulatory system disease	100.0	74.0	26.0
Injury or poisoning	100.0	76.5	23.5
Sensory disorder	100.0	78.3	21.7
Respiratory system disease	100.0	83.8	16.2
Endocrine or nutritional disorder	100.0	84.6	15.4
Nervous system disease	100.0	86.3	13.7
Digestive system disease	100.0	86.6	13.4
Neoplasm	100.0	91.1	8.9
Congenital anomaly	100.0	92.0	8.0
Infectious or parasitic disease	100.0	93.4	6.6
Genitourinary system disease	100.0	98.1	1.9
Intellectual disability	100.0	99.6	0.4
Blood or blood-forming organs disease	100.0	100.0	0.0
Other	100.0	82.7	17.3

SOURCE: Authors' calculations based on 2015 NBS.

NOTE: Skin or subcutaneous tissue disease is omitted because of small sample size.

disorders. Forty-one percent of beneficiaries with any musculoskeletal condition reported two or more such conditions; the corresponding rate for mental disorders was only slightly lower, at 38 percent. The rate varied widely among impairment categories; at the other extreme, no one reported multiple conditions within the category of blood or blood-forming organs disease.

Table 4 shows, for each impairment category, the percentages of beneficiaries who report one or more conditions within only that category and those who also report one or more conditions in at least one other category. For example, nearly everyone reporting an endocrine or nutritional disorder (98 percent) reported conditions representing two or more impairment categories; in other words, they also reported at least one other condition that fell outside the endocrine or nutritional disorder category. The percentages of beneficiaries reporting conditions in two or more impairment categories range from 78 percent to 98 percent, with most of the percentages exceeding 85 percent. This is consistent with the findings, noted earlier, of Gadermann and others (2012).

At first glance, this table might appear to contradict Table 2, which showed that 25 percent of beneficiaries reported one impairment category (and 8 percent reported no impairments). The difference is explained by how individual beneficiaries are represented in the tables' populations. In Table 2, the rows are mutually exclusive, and each person is represented once. In Table 4, the rows are not mutually exclusive because each row represents everyone who reported conditions in that category, and each person may be represented in multiple categories. For example, a person with one or more conditions within a single impairment category is represented only once in Table 4's percentages, in the row for that impairment category. However, people with conditions in multiple impairment categories can be represented from two to nine times in the percentages (no beneficiaries reported conditions reflecting more than nine impairment categories). This is why the percentages of beneficiaries reporting conditions within a single category in Table 4—*in each row*—are lower than the overall percentage of people who report one impairment category in Table 2. (Table 4 omits people who reported no limiting conditions.)

This type of analysis is most useful for examining particular impairment categories. For example, among beneficiaries with a musculoskeletal disorder, 14 percent reported only musculoskeletal conditions (but they could have reported multiple conditions, such as low back pain combined with osteoporosis). The other 86 percent of beneficiaries with a musculoskeletal disorder reported one or more musculoskeletal conditions *and* one or more conditions within at least

Table 4.
Disability-program beneficiaries reporting conditions in one or multiple impairment categories, by category of reference condition, 2015 (in percent)

Impairment category	Total	One category	Multiple categories
Endocrine or nutritional disorder	100.0	1.6	98.4
Genitourinary system disease	100.0	3.6	96.4
Infectious or parasitic disease	100.0	3.6	96.5
Digestive system disease	100.0	4.1	95.9
Blood or blood-forming organs disease	100.0	7.8	92.3
Sensory disorder	100.0	9.0	91.0
Respiratory system disease	100.0	10.0	90.0
Neoplasm	100.0	10.5	89.5
Circulatory system disease	100.0	11.2	88.8
Injury or poisoning	100.0	12.4	87.6
Musculoskeletal disorder	100.0	13.9	86.1
Nervous system disease	100.0	15.1	84.9
Mental disorder	100.0	19.2	80.8
Intellectual disability	100.0	19.8	80.2
Congenital anomaly	100.0	21.8	78.2
Other	100.0	4.4	95.6

SOURCE: Authors' calculations based on 2015 NBS.

NOTES: Skin or subcutaneous tissue disease is omitted because of small sample size.

Rounded components of percentage distributions do not necessarily sum to 100.0.

one other impairment category, such as a mental or a sensory disorder. Among beneficiaries with a mental disorder, 81 percent also reported at least one condition in another impairment category.

As we have seen, people reporting a condition within a particular impairment category can have multiple conditions within that category, as well as conditions in other impairment categories. Taken together, Tables 3 and 4 show that of all beneficiaries who reported at least one musculoskeletal condition, 41 percent reported two or more specific musculoskeletal conditions, and 86 percent reported at least one additional condition in a different impairment category. For beneficiaries reporting a mental disorder, 38 percent reported more than one mental condition and 81 percent reported having at least one additional condition in another impairment category. However, some impairment categories show markedly different patterns. For instance, nearly all beneficiaries reporting any intellectual disability reported only one condition in that category, yet 80 percent reported that they had at least one additional condition in another impairment category. Among beneficiaries with an endocrine or nutritional disorder, 15 percent reported more than one condition in that category and 98 percent reported at least one additional condition in a different category. These findings likely reflect differences in the nature of certain impairment categories. For instance, an intellectual disability is unlikely to coincide with another condition within that category, while some endocrine disorders such as diabetes may lead to complications that affect other body systems, resulting in high incidence of comorbid conditions in other impairment categories.

Comparing Administrative and Survey Data

We next examine the concurrence of data on beneficiaries' disabling conditions between the administrative records and the survey responses.[10] Administrative records and self-reported survey results may not match for a number of reasons. As noted earlier, the primary diagnosis recorded in the administrative data depends on SSA's use of the Listing of Impairments and other regulatory requirements, as well as practical considerations such as the ease of documenting different conditions. Thus, the primary diagnosis in the SSA records may not be the one the beneficiary considers to be his or her main condition, and a secondary diagnosis may not be recorded even when the beneficiary presents with multiple conditions.

By contrast, survey respondents can report an unlimited number of conditions. Moreover, a condition that is recorded in a beneficiary's administrative records may improve by the time of the survey interview, such that the respondent no longer considers it to be limiting. Conversely, the respondent may have developed new conditions, or a condition that was not considered disabling by SSA's standards may have worsened. In addition, beneficiaries may not perceive certain conditions to be limiting even though SSA considers them to be disabling. In particular, some types of mental disorders and intellectual disabilities are frequently underreported in surveys. Respondents may wish to avoid possible stigmatization; or, they may not think of themselves as having a disability (given the nature of certain mental disorders), or not understand the question or how to respond, or not report such conditions for other reasons (Bharadwaj, Pai, and Suziedelyte 2015). Finally, the survey data also depend on "the degree to which survey respondents were able to describe their health conditions accurately and the degree to which survey interviewers were able to interpret and code the responses appropriately" (Stapleton and others 2008).

Table 5 shows that conditions in all of the physical impairment categories appeared more frequently in the survey responses than in the administrative records. For example, 32 percent of beneficiaries had a musculoskeletal disorder in the administrative data, while 42 percent reported a musculoskeletal disorder in the survey. The reverse is true for mental impairments: The percentage of beneficiaries who had a mental disorder or intellectual disability recorded in the administrative data was substantially higher than the percentage reporting such conditions in the survey data. The overall concurrence rate, or the share of beneficiaries who had a primary or secondary diagnosis recorded in the administrative data that matched the impairment category of one of their self-reported conditions, was 72 percent. (We calculate concurrence at the impairment-category level, not for specific conditions.) However, the specific concurrence of administrative records with survey reports varied widely among individual categories; it was highest for musculoskeletal disorder, at 79 percent, and lowest for intellectual disability, at 29 percent. Other impairment categories with concurrence rates lower than 50 percent include skin or subcutaneous tissue disease, injury or poisoning, and digestive system disease. Respiratory system disease, neoplasm, and

Table 5.
Disability-program beneficiaries with disabling conditions recorded in the administrative and survey data, by impairment category, 2015 (in percent)

Impairment category	Administrative data		Survey data	
	Among all beneficiaries	With concurring survey data (con-currence rate) [a]	Among all beneficiaries	With concurring administrative data (reverse con-currence rate) [b]
Musculoskeletal disorder	31.8	78.6	42.1	59.5
Respiratory system disease	4.8	78.2	11.1	33.6
Neoplasm	2.7	74.9	5.2	38.3
Congenital anomaly	0.6	72.3	3.6	11.6
Blood or blood-forming organs disease	0.7	68.1	1.4	32.8
Circulatory system disease	11.0	65.7	20.6	35.1
Nervous system disease	8.1	63.0	17.0	30.0
Mental disorder	41.9	61.7	35.4	73.1
Genitourinary system disease	1.9	57.6	3.1	36.3
Infectious or parasitic disease	1.8	55.7	6.9	14.6
Sensory disorder	3.6	52.8	8.1	23.7
Endocrine or nutritional disorder	9.2	52.1	15.9	30.3
Skin or subcutaneous tissue disease	0.2	49.7	0.9	9.8
Injury or poisoning	4.7	46.9	14.9	14.7
Digestive system disease	2.0	43.2	6.3	13.4
Intellectual disability	11.2	28.8	5.2	62.4
Overall	. . .	71.8	. . .	71.8

SOURCE: Authors' calculations based on 2015 NBS and matched administrative records from SSA.

NOTES: Survey data include all self-reported conditions. Administrative data include only primary and (if any) secondary diagnoses.

"Other" impairment category omitted because of small sample sizes and diversity of individual conditions.

. . . = not applicable.

a. Percentage of beneficiaries with a primary or secondary diagnosis in the administrative data who reported a condition in the same impairment category in the survey.

b. Percentage of beneficiaries reporting a condition in the survey who had a primary or secondary diagnosis in the same impairment category in the administrative data.

congenital anomaly had high concurrence rates (more than 70 percent).

Table 5 also shows rates of concurrence of the survey results with administrative records—that is, the share of beneficiaries reporting conditions in the survey that matched the impairment category of their primary or secondary diagnosis. These "reverse concurrence" rates were generally far lower, as would be expected, because many respondents reported conditions in the survey that would not be present in their administrative records. Mental disorder and intellectual disability were notable exceptions, with reverse concurrence rates of 73 and 62 percent, respectively—higher than the corresponding rates of concurrence of their administrative records with their survey responses. Musculoskeletal disorder also had a high reverse concurrence rate (60 percent), indicating that

most people who reported this category of impairment also had it reflected in their administrative record. Skin or subcutaneous tissue disease had the lowest reverse concurrence rate, at 10 percent, indicating that the vast majority of people who report this impairment category have another impairment category or categories listed in their administrative records.

Table 6 expands the presentation of concurrence rates by directly comparing each of 13 impairment categories represented in the survey against each of the same categories represented in the administrative data. For beneficiaries reporting each impairment category in the NBS, it shows the distribution of impairment categories that are recorded in the administrative data as either primary or secondary. (The stepped figures in bold font match the reverse concurrence rates shown in Table 5.)

Table 6.

Concurrence of impairment categories recorded in the administrative data with categories of survey-reported conditions for disability-program beneficiaries in 2015 (in percent)

Survey-reported impairment category	Musculo-skeletal disorder	Mental disorder	Circulatory system disease	Endocrine or nutritional disease	Nervous system disease	Injury or poisoning	Respiratory system disease	Sensory disorder	Intellectual disability	Infectious or parasitic disease	Neo-plasm	Digestive system disease	Other	Un-known [a]
Musculoskeletal disorder	**59.5**	38.7	8.7	11.3	6.6	4.3	3.8	1.8	4.4	1.5	2.8	1.8	1.5	6.1
Mental disorder	27.4	**73.1**	4.4	4.5	3.2	2.7	2.3	1.2	8.9	1.0	0.4	1.1	3.1	7.2
Circulatory system disease	32.6	35.7	**35.1**	12.4	6.4	4.0	6.6	2.1	5.1	1.1	1.4	1.6	0.9	9.0
Endocrine or nutritional disorder	31.3	33.5	19.8	**30.3**	4.1	3.2	6.5	3.3	9.2	0.8	1.6	3.6	1.4	4.7
Nervous system disease	29.8	34.5	7.2	8.3	**30.0**	6.7	2.3	3.6	9.0	1.9	3.1	3.2	2.3	8.3
Injury or poisoning	46.6	44.4	6.2	8.5	6.7	**14.7**	2.2	2.1	4.4	0.7	2.0	1.0	2.3	7.6
Respiratory system disease	26.9	40.0	18.4	15.1	2.5	1.5	**33.6**	1.4	5.2	1.7	2.8	2.8	1.5	7.3
Sensory disorder	23.6	32.1	12.5	13.4	5.5	6.2	2.1	**23.7**	11.3	(X)	1.2	3.0	4.0	7.1
Intellectual disability	7.7	36.2	1.6	1.0	9.4	0.0	0.7	2.4	**62.4**	(X)	0.0	(X)	6.1	7.6
Infectious or parasitic disease	27.1	43.6	5.9	9.3	5.9	8.3	2.8	0.8	9.0	**14.6**	2.8	3.7	3.6	11.1
Neoplasm	27.6	22.5	6.3	10.0	6.7	(X)	6.2	3.5	5.6	3.2	**38.3**	3.3	0.6	12.3
Digestive system disease	24.7	46.7	7.4	11.9	7.6	2.8	5.2	2.1	5.8	2.8	(X)	**13.4**	2.7	15.3
Other	29.8	42.2	9.6	7.6	8.8	3.2	3.9	1.7	13.8	3.3	4.0	1.0	**3.1**	8.6
No limitation	10.8	40.0	6.2	6.4	4.7	4.4	1.1	10.4	26.1	2.0	0.8	0.7	4.9	13.3

SOURCE: Authors' calculations based on 2015 NBS and matched administrative records from SSA.

NOTES: Survey data include all self-reported conditions. Administrative data include only primary and (if any) secondary diagnoses.

Four impairment categories (congenital anomaly and diseases of the blood or blood-forming organs, genitourinary system, and skin or subcutaneous tissue) are omitted.

(X) = suppressed to avoid disclosing information about particular individuals.

a. Category consists of primary or secondary diagnosis codes that do not match any known impairment codes, possibly because of data entry errors.

Among survey respondents reporting a musculoskeletal disorder, for instance, the administrative record shows a primary or secondary impairment of that same category for the majority of beneficiaries (60 percent), and a primary or secondary mental disorder for 39 percent.

Table 6 includes the 8 percent of beneficiaries who reported no limiting impairments. In administrative data for that group, 40 percent had a mental disorder, 26 percent had an intellectual disability, and 13 percent had unknown impairments.[11] Notably, musculoskeletal and sensory disorders were also relatively prevalent in the administrative records for this group (11 percent and 10 percent, respectively).

Characteristics of Beneficiaries with Multiple Impairments

Table 7 highlights the characteristics of beneficiaries who reported conditions in multiple impairment categories. For simplicity, we call this group "beneficiaries with multiple impairments." The table presents the percentage distributions of beneficiaries by sex, age at interview, age at disability onset, race, ethnicity, education, marital status, and income relative to poverty level, all broken down by the number of impairment categories. As prior research has suggested, beneficiaries reporting more impairments tend to be older than those who report fewer impairments. One-third of beneficiaries reporting three or more impairments were aged 60 or older, compared with less than one-quarter of those reporting either zero or one impairment. Conversely, 12 percent of beneficiaries reporting no impairments were aged 18–24, while that age group accounted for only 2 percent of beneficiaries reporting three or more impairments.

Similar patterns emerge by age at disability onset: Beneficiaries reporting multiple impairments were more likely to have first experienced work or other daily activity limitations in their 40s and 50s. Conversely, 43 percent of beneficiaries reporting no limitations had disability onset before reaching age 18, consistent with the high rates of mental disorders and intellectual disabilities among that group.

Compared with beneficiaries reporting one impairment or no impairments, those reporting multiple impairments were more likely to be women and to have higher income, and were less likely to be African American and never-married. Differences by education were not statistically significant.

Disability and health, though often related, are separate concepts (HHS 2005; Centers for Disease Control and Prevention 2018). People who do not often feel sick or need acute medical attention are likely to regard themselves as in good health, independent of any long-lasting disabilities such as paralysis or intellectual disability (Goering 2015). Still, self-assessed health condition understandably varies by number of impairments, with beneficiaries who report multiple impairments also generally reporting poorer health (Table 8). Eighty-five percent of beneficiaries reporting three or more impairments rated their general health as fair or worse, compared with only 36 percent of people reporting no impairments and 59 percent of people reporting one impairment. Thirty-four percent of people reporting no impairments said their health is excellent or very good. Similar trends appear for respondents comparing their current health with that of the prior year. More than half of beneficiaries reporting three or more impairments, and only 12 percent of beneficiaries reporting no impairments, said their current health was worse than it had been in the previous year.

Many beneficiaries report difficulties with activities of daily living (ADLs), instrumental activities of daily living (IADLs), and other functional activities, and these limitations appear to relate strongly with reported number of impairments (Table 9). Among beneficiaries reporting three or more impairments, nearly two-thirds also reported at least two ADL or IADL difficulties. Among beneficiaries reporting no impairments, less than one-quarter reported two or more ADL or IADL difficulties, while 63 percent of them reported no such difficulties.

Table 10 presents indicators of the relationship between the number of self-reported impairments and beneficiaries' program-participation characteristics. Beneficiaries reporting no impairments generally had lower SSA program benefit amounts, which is consistent with members of that group generally being younger, having an earlier age of disability onset, and being more likely to receive SSI-only or concurrent benefits. Beneficiaries reporting no impairments also had been receiving disability-program benefits for a longer time since initial award—an average of 17 years, compared with 12 years for those reporting three or more impairments. Many of the no-impairments group had received SSI as children (35 percent), compared with 11 percent of beneficiaries reporting three or more impairments. Finally, the no-impairments group was also significantly more likely to have income from earnings in the month before the survey interview.

Table 7.

Selected sociodemographic characteristics of disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Characteristic	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Sex [a]					
Men	50.0	50.5	55.0	50.4	45.8
Women	50.0	49.5	45.0	49.6	54.2
Age at interview [a]					
18–24	4.7	12.3	6.6	4.1	2.2
25–29	4.7	11.5	6.8	3.7	2.3
30–34	4.9	9.4	6.2	3.8	3.8
35–39	5.6	7.4	7.5	5.1	4.3
40–44	6.2	4.4	7.5	6.4	5.5
45–49	9.5	8.7	9.4	9.5	9.9
50–54	15.0	11.1	14.1	14.8	16.8
55–59	20.3	11.3	19.5	21.8	21.6
60 or older	29.1	23.9	22.4	30.8	33.6
Average (years) [b]	50.6	44.7	48.2	51.6	53.0
Age at disability onset [a]					
Younger than 18	21.1	42.9	26.1	18.4	14.9
18–24	9.5	14.9	10.6	8.5	8.4
25–39	23.1	15.9	22.9	22.1	26.0
40–54	34.5	16.4	28.3	38.8	39.4
55 or older	11.7	9.8	12.2	12.1	11.3
Race [a]					
White only	69.0	57.9	66.7	71.3	71.1
Black or African American only	23.8	34.8	25.5	23.3	20.5
Other	7.2	7.3	7.7	5.4	8.4
Ethnicity					
Hispanic or Latino	9.8	15.4	9.4	8.5	10.0
Not Hispanic or Latino	90.2	84.6	90.6	91.5	90.0
Educational attainment					
Did not finish high school	28.3	29.7	27.6	29.4	27.4
High school or equivalent	42.6	51.5	44.3	43.2	38.9
Diploma	30.8	38.3	32.9	31.3	27.1
General Educational Development (GED) certificate	7.7	7.2	7.1	8.0	8.1
Special education certificate	4.1	6.0	4.3	3.9	3.7
Some college or postsecondary vocational education	13.7	6.7	12.2	13.5	16.7
Associate's or vocational degree	7.5	6.4	7.0	7.7	8.0
Bachelor's degree	4.9	3.8	5.6	3.6	6.0
Some graduate study or graduate or professional degree	2.9	2.0	3.3	2.7	3.0

(Continued)

Table 7.
Selected sociodemographic characteristics of disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)—*Continued*

Characteristic	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Marital status [a]					
Married	29.5	19.3	27.8	28.9	33.7
Divorced	24.2	14.0	20.6	27.9	25.8
Separated	5.1	6.5	3.0	4.3	7.1
Widowed	6.1	4.3	5.6	6.1	7.0
Never married	35.0	56.0	43.1	32.7	26.4
Household income relative to federal poverty level [a] (%)					
Less than 100	47.6	60.9	43.6	48.9	46.1
100–299	39.7	29.9	42.3	38.8	40.9
300 or more	12.8	9.2	14.1	12.3	13.0
Number					
Unweighted	4,062	479	1,199	1,242	1,142
Weighted	12,896,735	1,055,032	3,257,704	4,162,382	4,421,617
Weighted percentage distribution	100.0	8.2	25.3	32.3	34.3

SOURCE: Authors' calculations based on 2015 NBS.

NOTE: Rounded components of percentage distributions do not necessarily sum to 100.0.

a. Differences in percentages across number-of-impairment categories are statistically significant at the 5 percent level (chi-square test).

b. Difference between percentage of beneficiaries with 3 or more impairment categories and percentages of beneficiaries in other number-of-impairment categories is statistically significant at the 5 percent level (two-tailed test).

Table 8.
Selected health condition indicators of disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Indicator	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Those who—					
Died by the end of 2015	2.0	0.4	1.8	1.5	3.0
Reported drug or alcohol abuse in the past 12 months	7.0	4.1	8.3	6.1	7.4
Health condition—					
In general [a]					
Excellent	4.0	15.0	6.2	2.3	1.3
Very good	6.1	19.1	9.4	4.4	2.1
Good	17.7	29.9	25.2	15.3	11.6
Fair	31.8	22.7	31.8	34.6	31.4
Poor	28.6	8.9	19.9	31.5	37.0
Very poor	11.8	4.4	7.4	11.9	16.7
Compared with last year [a]					
Much better	4.2	16.4	5.3	2.5	2.2
Somewhat better	11.5	22.5	11.4	12.0	8.4
About the same	43.4	49.4	52.8	41.3	37.0
Somewhat worse	28.2	7.6	20.7	30.7	36.4
Much worse	12.7	4.1	9.9	13.6	16.0
Body mass index [a]					
Less than 18.5% (underweight)	2.3	1.4	3.2	2.0	2.0
18.5% to 24.9% (normal weight)	21.8	24.6	26.8	21.0	18.3
25.0% to 29.9% (overweight)	27.8	33.8	28.1	27.1	26.7
30.0% or more (obese)	48.1	40.2	41.9	49.9	52.9
Number					
Unweighted	4,062	479	1,199	1,242	1,142
Weighted	12,896,735	1,055,032	3,257,704	4,162,382	4,421,617
Weighted percentage distribution	100.0	8.2	25.3	32.3	34.3

SOURCE: Authors' calculations based on 2015 NBS and matched administrative records from SSA.

NOTE: Rounded components of percentage distributions do not necessarily sum to 100.0.

a. Differences in percentages across number-of-impairment categories are statistically significant at the 5 percent level (chi-square test).

https://www.ssa.gov/policy/docs/ssb/

Table 9.
Difficulty with selected activities among disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Activity	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
ADL					
Getting into or out of bed	35.7	10.9	25.6	36.9	47.9
Bathing or dressing	28.0	7.0	22.5	30.5	34.7
Getting around inside the house	20.7	4.4	10.8	23.9	28.9
Eating	14.8	2.3	13.9	13.7	19.6
None of the above	46.4	83.1	57.9	44.7	30.8
IADL					
Getting around outside of the home	52.3	22.9	49.3	52.9	61.0
Shopping for personal items	33.0	17.0	29.9	35.5	36.7
Preparing meals	35.0	16.6	33.1	38.4	37.6
None of the above	39.2	67.6	43.1	37.6	31.2
Functional activity					
Walking or climbing stairs, standing for 1 hour, stooping, crouching, and/or kneeling	83.7	49.1	70.7	90.5	95.2
Grasping, reaching, and/or lifting 10 pounds	71.4	34.4	55.2	78.3	85.9
Speaking, hearing, and/or seeing	45.6	36.1	39.1	45.2	52.9
Coping with stress	56.7	30.9	45.7	59.9	68.0
Concentrating	67.3	44.7	58.2	72.7	74.3
Getting along with others	29.3	22.6	23.7	29.6	34.6
Number of ADL or IADL difficulties reported					
0	24.5	63.3	30.9	21.9	13.1
1	21.1	12.0	22.2	20.6	23.0
2	16.2	13.2	16.2	16.2	16.9
3	12.3	6.1	10.1	14.2	13.6
4	11.0	3.0	10.2	10.2	14.3
5	6.4	(X)	4.6	8.2	7.1
6	6.0	(X)	3.8	6.5	8.3
7	2.5	0.0	1.9	2.2	3.8
Number					
Unweighted	4,062	479	1,199	1,242	1,142
Weighted	12,896,735	1,055,032	3,257,704	4,162,382	4,421,617
Weighted percentage distribution	100.0	8.2	25.3	32.3	34.3

SOURCE: Authors' calculations based on 2015 NBS.

NOTES: Respondents may report difficulty with multiple ADLs, IADLs, or functional activities.

Differences in percentages across number-of-impairment categories are all statistically significant at the 5 percent level (chi-square test).

(X) = suppressed to avoid disclosing information about particular individuals.

Table 10.
Selected program-participation characteristics of disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Characteristic	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Program type (at sampling time) [a]					
DI only	57.0	38.1	57.7	60.3	57.8
SSI only	27.9	44.0	29.2	26.6	24.5
Concurrent DI and SSI	15.1	17.9	13.1	13.1	17.8
Received SSI as a child (among those who ever received SSI) [a]					
Yes	17.0	35.4	20.4	15.0	10.5
No	83.0	64.6	79.6	85.0	89.5
SSA program benefit amount in month before interview [a]					
Less than $500	7.7	15.4	8.3	7.5	5.8
$500–$1,000	49.7	60.5	48.5	46.8	50.6
$1,001 or more	42.6	24.1	43.2	45.7	43.6
Average ($)	1,065.62	[b] 858.83	1,054.53	1,102.09	1,088.81
Receipt of income or assistance [c] in month before interview from—					
SSA disability program benefit [a]	95.4	91.9	94.8	97.2	95.0
Supplemental Nutrition Assistance Program	35.5	33.4	35.8	34.0	37.4
Earnings [a]	6.6	15.6	5.7	5.8	5.9
Pension	7.4	3.1	7.2	8.9	7.1
Veterans' benefits	3.4	1.3	2.0	3.5	4.7
Private disability insurance	3.0	2.2	4.3	1.6	3.5
Public cash assistance or welfare	2.1	2.7	2.2	2.1	2.0
Workers' compensation	0.9	0.6	1.1	0.9	0.8
Unemployment Insurance	0.2	0.8	0.2	(X)	(X)
Other	2.5	1.4	3.0	3.0	2.1
Non-SSA disability benefit income or assistance in month before interview [a]					
None	57.0	63.7	59.3	57.9	52.9
$1–$199	25.1	21.2	25.6	26.3	24.4
$200–$499	6.9	8.4	4.5	6.8	8.5
$500 or more	11.0	6.7	10.6	9.0	14.2
Average ($)	210.94	[b] 134.60	233.13	[b] 164.79	256.23
Months since initial SSA disability award [a]					
Fewer than 24	4.1	3.9	4.7	4.8	3.0
24–59	19.7	11.8	20.2	21.0	19.9
60–119	26.9	17.0	24.5	28.9	29.3
120 or more	49.0	67.2	50.2	45.2	47.2
Average (months)	150.3	[b] 204.0	153.6	140.3	144.3
Number					
Unweighted	4,062	479	1,199	1,242	1,142
Weighted	12,896,735	1,055,032	3,257,704	4,162,382	4,421,617
Weighted percentage distribution	100.0	8.2	25.3	32.3	34.3

SOURCE: Authors' calculations based on 2015 NBS and matched administrative records from SSA.

NOTE: (X) = suppressed to avoid disclosing information about particular individuals.

a. Differences in percentages across number-of-impairment categories are statistically significant at the 5 percent level (chi-square test).

b. Difference from the value for beneficiaries with 3 or more impairments is statistically significant at the 5 percent level (two-tailed test).

c. Respondents may report multiple income or assistance sources.

It is not surprising, then, that beneficiaries reporting no limitations were significantly more likely to be working at the time of interview (21 percent) than those reporting at least one impairment (about 7 percent for each category), and that similar patterns emerge for having worked in the past year and having looked for work recently (Table 11). Beneficiaries reporting no impairments were also more likely to be "work-oriented," as indicated by having personal goals that included getting a job, advancing in a job, or learning new job skills; or by seeing themselves working for pay within 2-year or 5-year horizons. Forty-five percent of all beneficiaries were work-oriented, and the percentages declined as the number of reported impairments increased. Among beneficiaries reporting no limitations, nearly two-thirds were work-oriented; that rate declined to 40 percent for beneficiaries reporting three or more impairments.

Nonworking beneficiaries cited multiple reasons for not working, primarily that their physical or mental condition prevented work (Table 12). As expected, beneficiaries who reported no impairments were less likely to say that their condition prevented work, and beneficiaries reporting multiple impairments were more likely to cite this reason. Patterns were similar (though less extreme) for reasons such as being discouraged by previous work attempts, others' perceptions, and workplace inaccessibility.

Table 11.

Selected employment-related behaviors of disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Behavior	All beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Employment					
Worked—					
At time of interview	8.3	20.8	7.3	7.1	7.0
Any time in 2014	10.6	21.1	10.4	9.0	9.9
Looked for work in last 4 weeks	5.7	11.7	6.7	4.4	4.8
Any of these	16.4	36.2	16.4	13.5	14.5
Employment support services					
Waiting to finish school or training program					
before working	2.8	3.2	3.6	2.5	2.5
Used a support service in 2014—					
Specific to employment	8.8	9.8	8.7	6.2	11.0
To get a job or increase income	2.9	5.3	3.6	1.9	2.8
Any of these	11.4	12.3	12.5	8.7	12.8
Work-oriented goals or expectations					
Get a job, new skills, or career advancement	37.2	55.7	42.1	34.0	32.3
Envisioning paid work in next—					
2 years	25.3	48.2	28.8	21.1	21.3
5 years	28.1	50.7	32.9	23.9	23.1
Envisioning work sufficient to discontinue					
disability benefits in next—					
2 years	11.2	31.6	12.5	8.3	7.9
5 years	16.7	32.3	20.7	14.3	12.4
Any of these	45.2	64.6	50.1	42.1	39.8
Any of all the items listed above	48.8	66.3	52.3	45.8	44.9
Number					
Unweighted	4,062	479	1,199	1,242	1,142
Weighted	12,896,735	1,055,032	3,257,704	4,162,382	4,421,617
Weighted percentage distribution	100.0	8.2	25.3	32.3	34.3

SOURCE: Authors' calculations based on 2015 NBS.

NOTE: Differences in percentages across number-of-impairment categories are all statistically significant at the 5 percent level (chi-square test).

Table 12.

Selected reasons for not working among disability-program beneficiaries, by number of self-reported impairment categories, 2015 (in percent)

Reason	All nonworking beneficiaries	Beneficiaries with self-reported impairments in—			
		0 categories	1 category	2 categories	3 or more categories
Physical or mental condition prevents work	90.0	64.4	88.5	93.2	93.4
Workplace inaccessibility	26.3	21.3	25.8	26.0	28.1
Discouraged by previous work attempts	26.0	19.5	25.1	26.5	27.6
Cannot find job for which I qualify	23.3	22.6	24.0	22.3	23.9
Others think I cannot work	23.2	19.7	22.1	23.0	25.0
No reliable transportation	17.0	18.0	16.9	19.2	14.9
Employer will not give me a chance	16.0	17.4	17.0	14.9	15.9
Fear of losing cash or health insurance benefits	12.5	19.8	13.2	12.7	10.2
Cannot find job I want	10.0	13.2	10.0	10.8	8.5
Caring for someone else	7.5	12.8	7.6	7.5	6.3
Waiting to finish school or training program	3.1	4.0	3.8	2.7	2.7
Other	5.3	2.9	3.2	6.9	5.7
Number					
Unweighted	3,617	374	1,065	1,121	1,057
Weighted	11,832,671	835,478	3,020,408	3,865,176	4,111,609
Weighted percentage	91.7	79.2	92.7	92.9	93.0

SOURCE: Authors' calculations based on 2015 NBS.

NOTES: Respondents may report multiple reasons for not working.

Differences in percentages across number-of-impairment categories are all statistically significant at the 5 percent level (chi-square test).

However, beneficiaries reporting more impairments were *less* likely to cite as reasons for not working caring for someone else, not wanting to lose benefits, inability to find a job they want, and waiting to finish educational programs.

Discussion and Conclusion

Survey results add depth and nuance to our understanding of beneficiaries' experiences of living with disability. In particular, beneficiaries' ability to report any number or type of limiting impairments presents a picture of disability rather different from the one we see based on only the primary and (sometimes) secondary diagnoses recorded by SSA's disability examiners. Although two-thirds of beneficiaries reported multiple impairments, 8 percent reported no limiting impairments.

This outlier group—beneficiaries reporting no limitations—is of potential interest to policymakers. These beneficiaries tend to be younger, often have mental disorders or intellectual disabilities, and are more likely to be SSI-only recipients. Compared with beneficiaries who report limitations, they are also less likely to be white, more likely to have been

diagnosed at a younger age, and more likely to report recent improvements in health. They are interested in work (nearly two-thirds are work-oriented), but are more afraid of losing benefits and health insurance than are other beneficiaries. In other words, many beneficiaries within this group want to work and some may be healthy enough to leave the benefit rolls for a longer time, if they have enough support. However, awareness of the Ticket to Work program and other SSA-sponsored work supports is relatively low, especially among SSI-only recipients (SSA 2018, Table 35). In addition, even within this group, 64 percent of those who are not working said their physical or mental condition prevented work—a surprising finding, given that these respondents had originally declined to list any "physical or mental conditions that limit the type or amount of work or daily activities that [they perform]." However, this is consistent with the perspective of the social model of disability, which considers society to be the limiting factor rather than the individual's medical condition(s). In sum, although the self-reported no-limitations group may be somewhat more likely than other beneficiaries to be able to work, they still have significant impairments that may prevent many of them from working.

Overall, the survey and administrative data presented in this article demonstrate the high prevalence of multiple impairments among SSA's disability-program beneficiaries, as well as the wide variation in beneficiary characteristics and impairment combinations. The majority of beneficiaries report conditions in multiple impairment categories, and often report multiple conditions within a category. Despite key conceptual differences between the impairment data in administrative records and in survey reports, we find a 72 percent concurrence of the impairment data in the two sources.

Beneficiaries who report multiple impairments tend to have more activity limitations and poorer health, although they are less likely to have household incomes below the federal poverty level than are beneficiaries reporting no impairments. Although beneficiaries with multiple impairments are also less likely to have work-related goals and expectations, a substantial proportion of them (40 percent) are work-oriented. These findings seem to be related at least in part to demographic differences, as older beneficiaries tend to have more impairments than younger ones and are more likely to receive DI benefits than SSI payments (SSA 2018). We hope these findings will inform policy discussions about SSA's disability programs by painting a more detailed picture of beneficiaries and their impairments.

This analysis has implications for both policy and research. Most importantly, researchers, policymakers, and practitioners should recognize that the administrative data on impairments have limitations. Even when both the primary and secondary diagnosis fields are coded in an individual's administrative record, they frequently do not represent all of the impairments that the beneficiary considers limiting, and may not align with what the beneficiary considers the most limiting condition(s). Because the purpose of the administrative record is to document the medical reason(s) for a benefit allowance decision, it tends to include the minimum information necessary to support a decision. The administrative data, although complete for that purpose, thus understate the presence of individual impairments as well as the total number and burden of beneficiaries' disabling impairments. The survey data, collected with the explicit purpose of studying beneficiaries, provide a fuller accounting of the totality of disability that they experience.

To provide comprehensive information on disability-program beneficiaries, SSA could include data on both the primary and the secondary diagnoses in its statistical reports. Similarly, SSA's disability demonstration studies often use the primary impairment categories for subgroup analysis and/or as control variables (for instance, Gubits and others 2018a, 2018b; and Fraker and others 2014); future studies could include both primary and secondary impairments. Additionally, demonstrations designed to target beneficiaries with a diagnosis in a specific impairment category may need to account for the many participants who will likely have multiple conditions that fall into multiple impairment categories.

Multiple impairments are generally associated with poorer outcomes in a number of areas, including functioning, work, and health. Thus, our results imply that the administrative data on impairments may be a somewhat weak—or at best, incomplete—predictor of outcomes. As a result, employment-support service providers such as vocational rehabilitation agencies and employment networks may find the administrative data to be of limited use because those data underreport impairments and may not identify the most salient limitations an individual faces. By supplementing the administrative data with beneficiary interviews, or perhaps making further use of data on alleged impairments in beneficiaries' disability-benefit applications, service providers may better understand the totality of a beneficiary's impairments and customize the supports they provide.

Future research on multiple impairments among SSA disability-program beneficiaries could build on this study by analyzing additional data sources, such as the applicant's claim documentation (noted above) and the Electronic Case Analysis Tool (eCAT), which disability examiners use to analyze and document claim decisions. Although SSA Form 831, the Disability Determination and Transmittal form, allows a maximum of two impairments per individual, examiners can document an unlimited number of impairments in eCAT.[12] Data from these sources could be compared with NBS results to track whether a beneficiary's impairments have changed since application.

In combination with additional future research, these findings on multiple impairments may inform SSA policies on disability adjudication and redetermination, work incentives, and employment supports. For instance, do particular combinations of impairments suggest medical severity equal to the criteria in the Listing? A better understanding of the reasons behind differences in the administrative and survey data on impairments might help examiners reviewing claimants' alleged impairments on disability applications.

Could impairment data from surveys, applications, or eCAT help predict who might be more likely to return to work, and thus help target employment supports more effectively?

All of this would require further analysis, including studies linking the number of impairments (or impairment categories) to outcomes such as work activity, employment-support service use, or mortality. For example, an association of higher numbers of conditions (or impairment categories) with higher rates of premature death would suggest that higher numbers of conditions (or categories) may be a proxy for more severe disabilities. Multivariate analysis examining benefit type (DI only, SSI only, or concurrent), age, and outcomes would also yield helpful information. In particular, it would be useful to explore which data types and sources are more accurate in predicting outcomes. Are administrative data more predictive than survey data for outcomes within program types and age groups? Can data on the number of individual conditions tell us more than data on the number of broad impairment categories?

In addition, future research might further explore the relationship between the number of self-reported impairments and allowance rates at different adjudicative levels or at different stages of the five-step disability determination process. Qualitative research, such as detailed beneficiary interviews, could probe reasons for the impairment-category differences between administrative and survey data (such as whether an impairment worsened over time or whether SSA simply considered a different impairment to be "primary"), how beneficiaries perceive their condition(s), and reasons why some respondents do not report any impairments. Data from applications and from eCAT may also be useful for exploring those questions, as well as for targeting employment supports. Future research could also explore changes in the number and characteristics of beneficiaries with multiple impairments, to better understand whether demographic patterns among beneficiaries remain consistent or change over time.

Notes

[1] For an explanation of the five-step disability determination process, see Wixon and Strand (2013).

[2] By contrast, the presence of a secondary impairment had a positive and significant effect on childhood SSI initial allowances. Among initial SSI determinations for children in 1993–2008, 38 percent had a secondary impairment (Rupp 2012).

[3] Despite the negative correlation, the share of cases with both a mental and a musculoskeletal impairment is relatively large because those impairment types are by far the most common.

[4] Each round of the NBS has a Restricted Access File, which contains the full set of survey data; and a Public Use File, which, to minimize the likelihood of identifying a sample member from the data, has undergone extensive masking and has fewer variables available. For more information about the NBS, including links to the documentation and Public Use File, see https://www.ssa.gov/disabilityresearch/nbs.html.

[5] Proxy respondents are used for individuals whose impairments prevent them from completing the survey for themselves. In the 2015 NBS, proxies provided 19 percent of the completed interviews (Wright and others 2017).

[6] Respondents who did not indicate that a physical or mental condition limited their ability to work or conduct daily activities were then asked for the "physical or mental condition [that] is the main reason" they either were currently or formerly eligible for benefits or were limited when they first started receiving disability benefits. We did not use these variables in the analysis.

[7] For a complete description of the health-condition survey questions and coding summarized here, see Wright and others (2017, Section V.C.1). For complete documentation and questions for the 2015 NBS, see https://www.ssa.gov/disabilityresearch/nbs_round_5.html.

[8] There are specific exceptions for drug addiction and alcoholism, statutory blindness, and symptomatic human immunodeficiency virus (HIV) infections; for each of those, the policy instructions prescribe whether it must be recorded as a primary or secondary impairment (SSA 2017b). Policy changes, such as revisions to the Listing of Impairments, can also affect primary and secondary designation. For instance, the 1999 removal of obesity as a separate listing in the endocrine disorders body system "shifted the recording of obesity from predominantly in the primary impairment field to the secondary impairment field, [and] shifted the body system category of applicants with obesity recorded as an impairment" (Stahl, Schimmel Hyde, and Singh 2016).

[9] These numbers differ from figures reported in Meseguer (2018) and O'Leary, Walker, and Roessel (2015) because in Table 2, we count the number of beneficiaries with more than one impairment category, not the number with any secondary diagnosis recorded. Looking at the specific primary and secondary diagnoses instead of broad impairment categories, we find that 69 percent of beneficiaries had a secondary diagnosis, 30 percent had a primary diagnosis only, and less than 1 percent had missing diagnosis data.

https://www.ssa.gov/policy/docs/ssb/

[10] This analysis updates and expands Stapleton and others (2008), which found similar results (see, in particular, that report's Table II.4).

[11] The "unknown" category consists of primary or secondary diagnosis codes that do not match any known impairment codes, possibly because of data entry errors.

[12] The primary and secondary impairments from eCAT propagate Form SSA-831. The use of eCAT has been mandatory for initial disability claims since 2013.

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