

Disability and Employment Status Among Older Workers

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Abstract

The chance of becoming disabled increases substantially in later life, from 3.1% for adults younger than 45 years old to 18.5% for those 55 to 64 years old. The statistics show that over 70% of Social Security Disability Insurance beneficiaries in 2001 were between the ages of 50 and 64. In addition, disability was the reason for paying 80% of Supplemental Security Income recipients. Due to the substantial growth in the number of individuals receiving Social Security benefits, there is an increasing economic concern that the Disability Trust Fund may be depleted sometime in the early twenty-first century.

The purpose of this study was three-fold: (a) to examine the characteristics of older working-age people with and without disabilities, (b) to examine the employment status among the same age group of individuals with disabilities, and (c) to examine the effect of type of disability on the probability of employment among the same age group of individuals while adjusting for socio-demographic factors.

This study used a retrospective and cross-sectional design. The target population was individuals with disabilities who were 45 to 64 years old and resided in the community. The data used in this study came from Wave 5 of the 1996 Survey of Income and Program Participation. Descriptive, bivariate, and multivariate logistic regression analyses were used.

Compared to people without disabilities, the group of people with disabilities was older and had a higher percentage of females, minorities, and high school graduates. Typically, the employment rate and average household income of these individuals were lower. In addition, most of them had mobility disabilities and worked in sales or services positions. Compared to non-employed people with disabilities, employed individuals

with disabilities were more likely to be younger, male, White, have a higher level of education, and perceive themselves to be in good health. People with a sensory or learning disability had a greater chance of being employed than did people with other types of disabilities. Similar characteristics were also found in comparing full-time versus part-time workers with disabilities.

Introduction

The chance of becoming disabled increases substantially in later life, from 3.1% for adults younger than 45 years old to 18.5% for those 55 to 64 years old (Kemp & Kleinplatz, 1985; McNeil, 1997). Compared to younger working-age individuals, the likelihood of working after acquiring a disability for older working-age individuals (i.e., between 45 and 64 years of age) is dramatically decreased (Kemp & Kleinplatz, 1985).

Older working-age individuals with disabilities are more likely than their younger counterparts to receive Social Security benefits. The number of workers with disabilities covered by Social Security benefits has increased over time. There were 455,000 disabled workers who received Social Security payments in 1960. In 2000, over five million disabled workers received Social Security payments (Social Security Administration [SSA], 2001). The statistics show that disability was the reason for paying 80% of Supplemental Security Income (SSI) recipients (SSA, 2002d). Further, over 70% of Social Security Disability Insurance (SSDI) beneficiaries were between the ages of 50 and 64 in 2001 (SSA, 2002c). Due to the substantial growth in the number of individuals receiving Social Security benefits, there is an increasing economic concern that the Disability Trust Fund may be depleted sometime in the early twenty-first century (Kemp & Kleinplatz, 1985; Marini, 2001).

Previous studies have examined the relationship between disability and employment status (Baldwin, 1999; Choi, 2000; Kaye, 2001; Loprest, Rupp, & Sandell, 1995; Santiago & Muschkin, 1996; Trupin, Sebesta, & Yelin, 2000; Yelin, Trupin, & Sebesta, 1998). Since the reasons of becoming disabled are very diverse, it is important to distinguish people with disabilities by the conditions associated with the disability

(Baldwin, 1999; Rubin & Roessler, 2001). Further, it is important to understand how different types of disabilities could affect the likelihood of an individual's employment, such as employed versus non-employed, full-time versus part-time, and those individuals who are more likely to actively look for a job.

The purpose of this study is three-fold: (a) to examine the characteristics of older working-age people with and without disabilities, (b) to examine the employment status among the same age group of people with disabilities, and (c) to examine the effect of type of disability on the probability of employment among the same age group of people while adjusting for socio-demographic factors. The following specific questions were addressed in the study:

1. What are the characteristics of older working-age individuals (between the ages of 45 and 64) with and without disabilities? How do these two groups of people differ on their characteristics?
2. What are the characteristics of employed versus non-employed older working-age individuals with disabilities? How do these two groups of people differ on their characteristics?
3. What are the characteristics of full-time versus part-time older workers with disabilities? How do these two groups of workers differ on their characteristics?
4. What are the characteristics of non-employed individuals with disabilities who are SSDI or SSI awardees and who actively seek a job?

5. How do different types of disabilities affect employment status (i.e., employed versus non-employed; full-time versus part-time) among older working-age individuals with disabilities?

Background

Relationship between socio-demographics and disabilities.

The prevalence of disability increases with age. Among people 45 to 54 years old, 23% had some form of disability, 14% had a severe disability and 4% needed personal assistance. For individuals 65 to 69 years old, the comparable estimates were 45%, 31%, and 8%, respectively (McNeil, 2001).

In addition to age, disability also varies by gender, race, ethnicity, education and income. Overall, women make up the majority of individuals with disabilities. This condition is also reflected in older working-age individuals. Among people 45 to 54 years old, the percentage with a disability was 24% for women and 21% for men; and among those 55 to 64 years old, the rates were 37% for women and 34% for men (McNeil, 2001).

The likelihood of having a disability varies by race. Minorities as a group report higher rates of disabilities than non-Hispanic Whites (McNeil, 2001; Trupin, et al., 2000). In particular, Blacks consistently have the highest prevalence of severe disability regardless of age (McNeil, 2001).

Disability status is inversely associated with educational attainment. In 1997, about 33% of people between the ages of 25 and 64 with a severe disability did not finish high school compared to 11% of those without a disability (McNeil, 1997).

People with severe disabilities have an increased likelihood of receiving welfare benefits, having low income, and being more likely to live in poverty (McNeil, 2001). Previous research (DeJong, Palsbo, Beatty, Jones, Kroll, & Neri, 2002; National Organization on Disability, 2000) also indicates that people with disabilities are nearly three times as likely to live in households with a combined annual income below \$15,000. As a result, there is a need for income support, such as income from SSI or SSDI.

Relationship between disabilities and employment.

The nature of the impairment is also associated with employment status. In recognizing the diversity of people with disabilities, Baldwin (1999) examined the effects of impairments on employment and wages among low-income older workers. Her findings show that persons with mental conditions (e.g., mental disorders, emotional problems, mental retardation, alcohol/drug problems, or learning disabilities) consistently have the poorest labor market outcomes. Their employment rates and wages were the lowest among all impairment groups and showed little change over time. In contrast, the employment rates for people with sensory and respiratory conditions declined over time. One possible explanation is that changes in the structure of the labor market may have made the functional limitations associated with sensory and respiratory conditions more restrictive. Although musculoskeletal conditions (e.g., arthritis, rheumatism, back or spine problems) were the most common impairments, people with these conditions had comparatively high average wages (Baldwin, 1999).

Inter-relationship among socio-demographics, disabilities, and employment.

The effects of marital status on employment differ for men and women. For men, being married is positively associated with the likelihood of working, whereas for women, being married is negatively correlated with the likelihood of working. Further, Blacks and other minority older workers typically are less likely to work in professions or jobs with high benefits. They have less education, fewer skilled jobs, lower salaries, and long periods of unemployment (Bacon, 1995).

Among older workers (45-64 years old), women are more likely to report a health-related limitation that hinders their work. Women with disabilities are also less likely to work and receive lower income than do men with disabilities (Santiago & Muschkin, 1996). Men with disabilities are less likely to be employed and more likely to have lower earnings than are men without disabilities (Santiago & Muschkin, 1996). In studying the determinants of work status among low-income older workers, Choi (2000) found that older aged individuals and those having permanent disabilities were less likely to work, regardless of gender.

Education also plays a significant role in different types of employment for people with disabilities. Persons with higher levels of educational attainment are found to be in white-collar employment sectors (Schechter, 1999). Poor self-rated health is inversely correlated with the likelihood of working. For Blacks, chronic illness or disability is the main reason for not working (Weismantle, 2001).

Earnings also vary among different race/ethnic groups with disabilities. Black women with disabilities earn only 75% of what Anglo women with disabilities earn and

Latinas with disabilities earn only 55% of what Anglo women with disabilities earn (Santiago & Muschkin, 1996).

Although previous studies have examined the relationship between disability and employment status and have shown a negative relationship between the two, little is known about the effect of type of disability on the probability of employment among older working-age individuals while controlling for socio-demographic factors. Further, individuals with learning disabilities were often grouped within a large category of mental disabilities (e.g., emotional problems, mental disorder, or mental retardation) (Baldwin, 1999). As a result, the effect of a learning disability on employment status could not be previously ascertained. Although older adults are prone to having a higher disability rate than other age groups, the effect of disability on employment status among older working-age people with disabilities has not been fully examined in previous research. Therefore, this paper seeks to address these gaps.

Policy Related Issues and Initiatives

In general, people with disabilities have a low employment rate. The U. S. Census Bureau and a National Organization on Disability (NOD)/Harris study reported that less than one-third (32%) of working-age individuals (age 18 – 64) with disabilities work either full-time or part-time, compared to 81% of people without disabilities (Hernandez, 2000; Wells, 2001). From 1992 through 1998, the overall employment rate for people with disabilities has fallen, while the employment rate for people without disabilities has increased over the 1990s (Wells, 2001). Other statistics show that only about one percent

of the people who receive Social Security and SSI disability benefits leave the rolls each year to go to work (SSA, 2002e).

The low employment rate among people with disabilities is due to several reasons. One of them is that many non-employed people with disabilities (approximately one-third of 4.2 million people) indicated their need for some type of accommodation(s) to work (U. S. Department of Labor, 2001). Some expressed that they lack experience, skills, and training to perform the tasks. Others chose to receive SSDI and SSI since few jobs offer employer-sponsored health insurance (Wells, 2001). In addition, many program participants with disabilities were often discouraged from seeking or accepting gainful employment because they feared that their new income status would deprive them of their health benefits under the Medicare and Medicaid programs (DeJong et al., 2002; Whitehouse, 2001). To solve the low employment rate among people with disabilities, several policies have been implemented in the past 12 years.

The Americans with Disabilities Act.

The Americans with Disabilities Act (ADA) was enacted in 1990 mainly to increase the employment rate of people with disabilities by making it illegal to practice discrimination against individuals who have a disability. In the past 12 years, the ADA has been helpful in providing access to jobs, especially in the small business sector, which has created two-thirds of all new jobs since the early 1970s (Whitehouse, 2001).

However, employment for people with disabilities continues to be a problem (Hernandez, 2000; McNeil, 1997). Most of the employers have shown acceptance of the ADA, but they are less likely to hire people with disabilities (Hernandez, 2000). Their

concerns about hiring people with disabilities include work-related skills, costs of accommodations, interference of accommodations with typical work schedules, workers' productivity, job restructuring and accommodations, and impact on workers' compensation claims (Hernandez, 2000).

Ticket to Work and Work Incentives Improvement Act.

In 1999, Congress passed the Ticket to Work and Work Incentives Improvement Act (TWWIA) in order to assist Social Security beneficiaries with disabilities to work without losing their health benefits after accepting gainful employment. TWWIA enables SSDI and SSI participants with disabilities to retain Medicare or Medicaid benefits for a longer period of time, which has substantially improved the work incentive provisions of the Social Security Act. TWWIA also provides people with disabilities with a return-to-work "ticket" or voucher that they can deposit with a service provider who is responsible for helping them obtain employment and the accommodations needed to remain employed (DeJong et al., 2002; SSA, 2000, 2002c).

Healthy People 2010 Objectives and the New Freedom Initiative.

Increasing employment of people with disabilities is also one of the objectives of Healthy People 2010 that addresses the importance of eliminating the disparities in health and employment for working-age adults (between the ages of 21 and 64) with disabilities. The overall employment goal for working-age adults with disabilities was 82%, a 58% improvement over the current baseline of 52%. This target goal reflects an attempt to achieve parity in employment with non-disabled working-age adults (U.S. Department of

Health and Human Services, 2000). In addition, different employment objectives were set for working-age adults with disabilities by race, ethnicity, education, and gender.

In 2001, President Bush launched the New Freedom Initiative (NFI) for Americans with disabilities to facilitate the full implementation of the ADA. This initiative emphasizes the participation of people with disabilities in all areas of life, i.e., education, employment, transportation, community involvement, technology and health care, voting and political participation, and religious life (Whitehouse, 2001). Thus far, the impact of the NFI on people with disabilities has not been evaluated.

The implementation of the above policies is especially important for older working-age individuals with disabilities since over 70% of SSDI beneficiaries are people with disabilities who are between the ages of 45 and 64. Further, increasing employment of this age group of people with disabilities will not only reduce the financial burden of SSA, but also will allow the same age group of people with disabilities to fully participate in society and increase self-esteem.

Methods

This study used a retrospective and cross-sectional design to examine the socio-demographic, health, and disability-related factors that explain the probability of employment. The target population was individuals with disabilities who were 45 to 64 years old and resided in the community.

Data Source

The data used in this study came from Wave 5 of the 1996 Survey of Income and Program Participation (SIPP). The SIPP, conducted by the U. S. Census Bureau, is a nationally representative household survey of the non-institutionalized resident population of the United States. It was designed to improve the measurement of the economic situation of persons, families and households in the United States and to provide a tool for managing and evaluating government transfer and service programs (U. S. Census Bureau, 2001).

Survey design.

The Census Bureau used a two-stage sample design (i.e., selection of primary sampling units [PSUs] and selection of address units within PSUs). The 1996 panel has a total of 322 PSUs, each consisting of a county or a group of contiguous counties. Within these PSUs, living quarters were systematically selected from lists of addresses prepared for the 1990 decennial census. To account for living quarters built within each of the sample areas after the 1990 census, a sample containing clusters of four living quarters was drawn from permits issued for construction of residential living quarters up until shortly before the beginning of the panel (U. S. Census Bureau, 2000).

The 1996 panel spans four years and consists of 12 Waves. Respondents were divided into rotation groups of approximately equal size. The respondents of each rotation group were interviewed each month. In each Wave, all rotation groups were interviewed over the course of four months and provided data for the full set of four months. For many survey items, the SIPP collected data for each of the four calendar

months preceding the interview month. Those four months together were called reference months, or the reference period (U. S. Census Bureau, 2001).

The interviewers used a laptop computer (computer-assisted interviewing [CAI]) to conduct personal interviews in Waves 1 and 2. After Wave 2, the field representatives used the CAI instrument in face-to-face interviews with approximately one-third of the respondents. For the remaining interviews, the field representatives used the CAI instrument but conducted telephone interviews from their homes (U. S. Census Bureau, 2001).

Survey response.

The 1996 Panel had an initial sample size of 40,188 households. The cumulative sample response rate was 75.4% for Wave 5 and by the end of the 12th (final) Wave, the cumulative sample response rate decreased to 64.5% (U. S. Census Bureau, 2001).

Survey content.

The SIPP includes extensive information on disability status, income, employment, health insurance coverage, and the receipt of program benefits. It also links disability with associated health conditions and provides information that usually is not available from other data sources. It is an important and current source of data on the number and characteristics of people with disabilities (McNeil & Binette, 2001).

The disability-related questions include limitations in functional activities (e.g., seeing, hearing, speaking, lifting, carrying, using stairs, and walking), activities of daily living (ADLs) and instrumental activities of daily living (IADLs). The SIPP also collects

information on the use of wheelchairs and crutches, canes or walkers, the presence of certain conditions related to mental functioning, the presence of a work disability, and the disability status of children.

Both Core and Topical Module data collected in the fourth reference month of Wave 5 were included in the analyses. Data selected from the Core data file include information such as labor force behavior, income, participation in public programs, and basic demographic characteristics. Data selected from the Topical Module data file include disability information (e.g., functional limitations and disability for adults).

Study Population

Wave 5 data were collected from August to November, 1997 (McNeil, 1997). A total of 82,829 individuals in approximately 32,000 households were interviewed in the fourth reference month. The data in the fourth reference month of Wave 5 include 5,426 cases representing an estimated 16,962,789 individuals with some type of disability between the ages of 45 and 64.

Study Variables

The study variables include socio-demographic characteristics, self-rated health, health conditions that cause difficulties with certain activities, type of disability, and employment status. A detailed description of the study variables is listed in Table 1.

Employment status (defined as actually employed vs. non-employed and full-time employment vs. part-time employment) was used as the dependent variable in the multivariate logistic regression analysis. The independent variables were individuals'

socio-demographic characteristics, self-rated health, health conditions, residency, and type of disability. Continuous variables, such as age and total household earned income, were re-coded into categorical variables.

Definitions of disability status.

The ADA defines disability as a physical or mental impairment that substantially limits one or more major life activities (McNeil, 2001). The SSA has a strict definition of disability. More specifically, the SSA defines disability as the inability to engage in substantial gainful activity (SGA) due to any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months (SSA, 2002b, 2002e). The rules of the Social Security program assume that working families have access to other resources to provide support during periods of short-term disabilities, including workers' compensation, insurance, savings, and investments. Therefore, people with partial disability or short-term disability are not qualified for any Social Security disability benefits. Further, if individuals cannot do the work that they performed in the past due to a medical condition, then age, education, and past work experience must be considered in determining whether the person can do other work. If the evidence shows that the person can do other work, even if it involves different skills or pays less than their previous work, they cannot be considered disabled for Social Security purposes.

In order to provide a sensitive estimate of disability prevalence in relation to employment status, a broader disability definition based on the SIPP disability questions was used. Therefore, SSDI beneficiaries with disabilities have certainly met the disability

criteria used in this study. The SIPP has an extensive set of disability questions and is a good source to examine disability issues (McNeil & Binette, 2001). The SIPP contains questions about the ability to perform a number of activities. If individuals report having difficulties performing a specific activity, a follow-up question usually determines if the level of difficulty is severe or not. The SIPP also links disability with associated health conditions that provides important information for programs that address disability prevention (McNeil & Binette, 2001).

For the purposes of this analysis, the following criteria were used to determine if the individual had a disability:

1. having difficulty performing a specific activity (e.g., an ADL, an IADL, seeing, etc.), using assistive aides, or having mental or learning disabilities;
2. having a long lasting physical or mental condition that has made it difficult to remain employed or to find a job;
3. having a physical, mental, or other health condition that has limited the kind or amount of work around the house; or
4. having applied for Social Security disability benefits for self in the last 12 months.

If individuals indicated that they needed help from another person with certain activities (such as ADLs OR IADLs), they were identified as having a severe physical or functional disability.

Statistical Analysis

For the analysis, the two Wave 5 data files (Core and Topical Module) of the fourth reference month were linked. The final personal weight was used in all the analyses in order to generalize the results to the national population (U.S. Census Bureau, 2001).

Descriptive analyses were performed to examine the characteristics of the study population by disability and employment status. Bivariate analyses (e.g., chi-square and t-tests) were used to compare disability and employment status. A forward stepwise logistic regression analysis (Hosmer & Lemeshow, 2000) was conducted to examine the relationship between disability and employment status while controlling for individuals' socio-demographic and health-related characteristics (e.g., age, educational attainment, marital status, gender, residence, physical and functional severity level, and health conditions). Data were weighted to produce national estimates. A variable with less than 100 cases was considered potentially too small to produce a reliable national estimate (e.g., 80 people may be representing 7,000,000 people). Therefore, study variables with less than 100 unweighted cases were excluded from the analyses.

Results

Overview of the Study Population

Table 2 provides a summary of socio-demographic characteristics, self-rated health, health insurance coverage, employment status, and type of disability of the SIPP survey respondents who were between 45 and 64 years old. The same information is summarized for people with and without disabilities.

Characteristics of study respondents with and without disabilities.

Compared to the respondents without disabilities, the respondents with disabilities were older (average age was 55 years old) and had a higher percentage of females (58%). While over half the respondents with disabilities were married (61%) and resided in metropolitan areas (57%), the percentages were lower than for people without disabilities. Like the respondents without disabilities, people with disabilities had a similar race distribution - that is, the majority were White. However, the percentage of minorities was somewhat higher among people with disabilities (17%) as compared to people without disabilities (13%). The data also show that people with disabilities had a higher percentage of high school graduates (52%) than people without disabilities (39%) but they had a lower percentage of college graduates (34%) than people without disabilities (44%). While people with disabilities had a lower employment rate (52%) than did people without disabilities (84%), most of the employed people in both groups worked for private, for-profit companies (28% vs. 48%).

Over 40% of the respondents with disabilities perceived their health to be poor or fair. This percentage is much higher than that of the respondents without disabilities (3.7%). Of the respondents with disabilities, the most commonly reported disability was mobility disability (85%), followed by sensory (26%) and physical/functional disabilities (24%). Approximately one-fifth of the respondents with disabilities reported that they had severe physical or functional disabilities and needed help from another person with daily living activities. Over one-fifth of the respondents with disabilities reported that

arthritis/rheumatism or back/spine-related problems caused difficulties with certain activities.

Compared to people without disabilities, people with disabilities were less likely to have health insurance (64%) and more likely to be enrolled in Medicaid (16%). Further, they had less average income (e.g., total household income and personal earned income) in the reference month, compared to older working-age people without disabilities. Over 10% of people with disabilities had SSDI, and about 10% received SSI.

Overview of Employment Status Among People with Disabilities

Employed versus non-employed people with disabilities.

Table 3 compares the socio-demographic characteristics of employed and non-employed respondents with disabilities. Compared to non-employed individuals, employed people were younger (average age was 53 years old) and had a higher percentage of males (44%), Whites (86%), metropolitan residents (65%), and college graduates (43%). The data also show that over half of the employed people worked for private, for-profit companies (55%) and almost one-fifth worked for government agencies (19%).

Unlike non-employed people, employed individuals were less likely to perceive themselves in poor (6%) or in fair (24%) health. They were also less likely to have severe physical or functional disabilities (6%). Further, the percentages of different types of disabilities and health conditions that caused difficulties in activities were lower in employed respondents than in non-employed respondents. The most typical type of

disability for both employed and non-employed respondents was mobility disability (80% for employed and 89% for non-employed respondents).

The average total household income of non-employed persons was about half of the total household income of employed persons.

Full-time versus part-time employment among people with disabilities.

Table 3 also compares the socio-demographic characteristics between full-time and part-time workers with disabilities. Compared to part-time workers, full-time workers were slightly younger (average age was 53 years old) and had a higher percentage of males (46%) and college graduates (44%). While most of the workers resided in the city, the percentage of metropolitan residents was higher in part-time workers than in full-time workers. Further, the majority of the full-time (56%) and part-time (51%) workers worked at private, for-profit companies.

The data show that the percentages of all disabilities, except for sensory disabilities, were higher in part-time workers than in full-time workers. In addition, the percentage of those reporting having a severe physical or functional disability was lower in full-time workers than in part-time workers. Part-time workers also had a higher percentage of arthritis or rheumatism that caused difficulties in activities than did full-time workers.

The average total household income of full-time workers was only \$300 more than that of part-time workers. However, full-time workers' earned income was twice as high as that of part-time workers with disabilities.

Non-employed people with disabilities who actively sought a job.

Of non-employed people with disabilities, only 2% actively sought a job in the reference month. Most of them were female (71%), White (79%), unmarried (68%), resided in metropolitan areas (57%), and over 40% were high school graduates.

Mobility disability (78%) was the most common disability among those who actively sought a job, followed by sensory (21%), physical or functional (17%), and mental disabilities (15%). Over 10% of these individuals had severe physical or functional disabilities. Their average total household income was less than \$2,000 in the reference month.

Less than four percent of non-employed people with disabilities who actively sought a job were SSI recipients. All of these SSI recipients were White, female, unmarried, perceived themselves in fair health, and had mobility and severe physical and functional disabilities. They had at least a high school education (45% high school and 55% college) and more than half of them (55%) resided in non-metropolitan areas. Over 40% of them had either arthritis/rheumatism (45%) or back/spine related problems (55%). None of the SSDI beneficiaries reported that they actively sought a job in the reference month.

Overview of the Impact of Disability on Employment Status

The impact of disabilities on employment.

Table 4 summarizes the odds of being employed among older working-age people with disabilities. The findings show that individuals who were younger, male, White, unmarried, resided in non-metropolitan areas, attained a higher education, and perceived

themselves in very good or excellent health had a greater chance of being employed than their counterparts without disabilities. After taking into account an individual's socio-demographic characteristics, people with a sensory or learning disability had a greater chance of being employed than did people with other types of disabilities. The data show that the odds of being employed for people with a sensory disability were 1.13 times higher than the odds for people with other types of disabilities. The odds of being employed for people with a learning disability were 1.8 times higher than the odds for people with other types of disabilities. One possible explanation of these findings is that older working-age people with vision, hearing, or learning disabilities may not have severe functional or mobility limitations that could prevent them from traveling to and from work.

The unweighted number of cases for people who were actively looking for a job and people with cerebral palsy and kidney problems was relatively small (less than 100 cases) and not large enough to generate reliable national estimates; therefore, these groups were excluded from the logistic regression analysis.

The impact of disabilities on full-time employment.

Table 4 also summarizes the odds of working full-time among employed persons with disabilities. The data show that employed persons, who were younger, male, White, college graduates, perceived themselves in excellent health, and had a household income between \$1,001 and \$4,000, had a greater chance of working full-time. After taking into account an individual's socio-demographic characteristics, employed persons with a sensory or mobility disability had a greater chance of working full-time than did

employed persons with other types of disabilities. The data show that the odds of full-time employment for employed persons with a sensory disability were 1.26 times higher than the odds for employed persons with other types of disabilities. In addition, the odds of full-time employment for employed persons with a mobility disability were slightly higher (3%) than the odds for employed persons with other types of disabilities. One possible explanation is that older workers with sensory or mobility disabilities may not have severe physical or functional limitations that may prevent them from working full-time (e.g., lack of physical ability and energy).

The unweighted number of cases was relatively small for communication disabilities, lung or respiratory problems, cerebral palsy, and kidney problems; therefore, these groups were excluded from the logistic regression analysis.

In summary, slightly more than half of older working-age individuals with disabilities worked during the reference month. The majority had mobility disabilities and worked in sales or services positions. Most non-employed individuals with disabilities who actively sought a job were female, White, unmarried, high school graduates, and resided in metropolitan areas. Less than four percent of them were SSI recipients.

Of employed older working-age people with disabilities, over half of them worked at private, for-profit companies. The impact of type of disability on employment status varies. Older working-age people with a sensory or learning disability had a greater chance of being employed than did people with other types of disabilities. Further, older working-age people with a sensory or mobility disability had a greater chance of working full-time than did people with other types of disabilities.

Discussion

Employment status among older working-age individuals varies by type of disability. The data show that people with sensory disabilities consistently have a greater chance of being employed and working full-time than people with other types of disabilities. This finding suggests that individuals with vision or hearing disabilities may possibly adjust to work-related barriers better or quicker than individuals with other types of disabilities. For instance, people with sensory disabilities may not have severe physical or functional limitations or energy considerations (i.e., fatigue) that may prevent them from traveling to and from work or working full-time. The amount of work-related accommodations and supervision for people with sensory disabilities may not be as extensive or constant as that for the same age group of people with other types of disabilities. Further, their sensory limitations may have been developed early in life or occurred gradually so that people with this type of disability may have already developed basic skills (e.g., sign language, Braille) that allow them to overcome work-related challenges over the years.

On the other hand, people with learning disabilities, such as dyslexia, have a greater chance of working part-time. The finding suggests that people with a learning disability may not have severe functional conditions that prevent them from traveling to work but they may have difficulties in keeping focused on their jobs for long hours.

The data also show that people with mobility disabilities have a slightly higher probability of working full-time than do people with other types of disabilities. This finding suggests that although mobility disabilities are very common among individuals with disabilities, people with this type of disability may have an occupation that is not

labor intensive or the disability is not so severe that some accommodations at work may help them work full time.

The findings show a small chance of being employed among people with mental, communication, physical or functional disabilities. One possible explanation is that their disabilities may be so severe that they may have special needs in getting or keeping a job through ongoing support and services, vocational rehabilitation, or work accommodations. However, ongoing support and services may be costly. In addition, vocational rehabilitation services in the community are often not well equipped to deal with the specific educational and occupational needs of people with disabilities (Bishop, 2000; May & Vieceli, 1983). Vocational counselors may lack knowledge about disability. They may approach all individuals with a particular condition uniformly, regardless of disability severity, type, prognosis, and individual abilities and skills (Bishop, 2000; May & Vieceli, 1983). For instance, people with mental disabilities are more likely to suffer deficiencies in employability behaviors, such as ability to work independently, ability to get along with co-workers, or work persistency (Hernandez, 2000).

In addition to ongoing support and services and vocational rehabilitation, work accommodations that promote return-to-work and retention are used to help workers with disabilities. Studies show that medical advances, improved accommodations in the workplace, and changes in the nature of work for workers with disabilities have allowed many of them to rejoin the workforce (Kennedy, 2000). In studying the first job after return to work among disability insurance beneficiaries, Schechter (1999) found that the two most helpful accommodations were getting someone to help the beneficiaries with their work and helping them to learn a new job skill. Modification of work schedules

(i.e., shortened work day, changed time of coming to and going from a job, and more breaks and rest periods) was an important factor in job retention. Special equipment was also an important factor to people who worked in the construction industry. However, Schechter (1999) noted that no more than one-fifth of all disability insurance beneficiaries were offered any particular form of accommodation by their first post-entitlement employer.

Another reason for low probability of being employed among older working-age adults with mental, communication, physical or functional disabilities may be related to employers' attitudes. In general, employers have different views about people with different types of disabilities. Previous research shows that employers often view workers with physical or sensory disabilities more positively than workers with intellectual, psychiatric, or communication disabilities (Greenwood & Johnson, 1987; Gilbride, 2000; Hernandez, 2000; May & Vieceli, 1983; Wells, 2001). There are several reasons for employers to have negative attitudes toward people with disabilities.

For instance, employers are concerned about costs for workplace adjustment, lost productivity due to higher absenteeism, lack of work-related skills, interference of accommodations with typical work schedules, and impact on workers' compensation claims. As a result, most employers are reluctant to restructure jobs to meet the needs of people with disabilities (Hernandez, 2000; Robinson, 1984; Wells, 2001).

However, previous research indicates that some employers have expressed positive attitudes toward workers with disabilities who are placed by vocational, employment, or supported-employment programs (Hernandez, 2000; Petty & Fussell, 1997). In particular, employers who received supported-employment services (e.g.,

workers obtain training and support from a job coach to adequately perform their jobs) are most satisfied with workers with intellectual (e.g., mental retardation) or psychiatric disabilities (e.g., emotional disorder). Therefore, it is possible to reduce the disparities of employment by providing vocational or supported-employment programs for older working-age people with disabilities.

The data indicate that most employed people with disabilities are more likely to work at private, for-profit companies and less likely to work at government agencies (e.g., local, state, or federal) or private, not-for-profit companies. A similar result was also found among people without disabilities. One possible explanation of this finding is that the job application processes for government agencies or private, not-for-profit companies may be more cumbersome than the processes for private, for-profit companies, thus, serving as a potential barrier to employment.

The data also show that the majority of non-employed people with disabilities do not actively seek a job. Most of them are in their mid-fifties, female, White, married, high school graduates, and reside in metropolitan areas. Since almost 40% of them have severe physical or functional limitations that require the help of another person, they may need ongoing support and services and high cost accommodations in order to get or keep a job. With limited wages or partial cash benefits, they may not find an Employment Network that is willing or able to take their “ticket” under the existing financial incentives of the Ticket to Work and Self-Sufficiency program (SSA, 2002a, 2002e). To solve this issue, Congress has mandated the Adequacy of Incentives Study to evaluate how the Ticket to Work program can be used to increase employment among those with severe disabilities. The SSA will then identify and implement a payment system that would allow this

population to participate in the Ticket to Work program and recommend methods of adjusting payment rates to Employment Networks to ensure equitable participation for individuals with significant disabilities (SSA, 2002a, 2002e).

The findings also show that non-employed persons with disabilities who actively seek a job are in their early fifties, female, White, unmarried, high school graduates, and reside in metropolitan areas. Eleven percent of them have severe physical or functional limitations that require the help of another person. Although there is a very small percentage of non-employed people with disabilities who actively seek a job, it is important to identify their needs (e.g., work-related accommodations, job training, etc.) in order to assist them with finding a job.

Conclusions

In conclusion, the effect of type of disability on employment status suggests that older, working-age people with different types of disabilities have different needs in obtaining a job and remaining in a job. SSA should address the needs of this age group of people with mobility, communication, mental, and functional disabilities by working with employers to make work-related accommodations available and by providing different means (vocational rehabilitation services, assistive technology, education, and training) to help this high-risk population work.

In addition to type of disability, this study identifies risk factors that are associated with the probability of unemployment. They include socio-demographic factors (i.e., older age, female, non-White, married, and metropolitan resident), monthly household income, health conditions (e.g., poor health, back or spine problems) and

presence of severe physical or functional disability. Therefore, these risk factors should be considered as important criteria in determining older working-age people's capacity to engage in substantial gainful activity.

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Table 1. Study Variables

Study variable	Categories	Definitions
Independent variables		
Age (in year)	(1) 45-49; (2) 50-54; (3) 55-59; (4) 60-64	
Gender	(1) male (2) female	
Race	(1) White (2) non-White	
Marital status	(1) married (2) unmarried	
Education	(1) 6 th grade or less (2) high school (3) college (4) graduate	
Residence	(1) metropolitan (2) non metropolitan	
Self-perceived health	(1) poor (2) fair (3) good (4) very good (5) excellent	
Total household earned income in reference month	(1) ≤ \$1,000 (2) \$2,001 - \$3,000 (3) \$3,001-\$4,000 (5) ≥ \$4,001	
Health conditions that caused difficulties with certain activities	(1) yes (2) no	arthritis or rheumatism; back or spine, heat trouble; cerebral palsy; kidney problem; lung or respiratory problem
Type of disability		
Sensory	(1) yes (2) no	difficulties in hearing or seeing
Mobility	(1) yes (2) no	difficulties in lifting, carrying, pushing, pulling, standing, sitting, stooping, crouching, kneeling, reaching over head, using hands/fingers, walking up a flight of stairs, and walking a quarter of a mile. Using a cane, crutches or walker for 6 months or longer, using wheelchair or an electric scooter

Table 1. (continued)

Study variable	Categories		Definitions
Communication	(1) yes	(2) no	difficulties in having speech understood
Learning	(1) yes	(2) no	learning disability
Mental	(1) yes	(2) no	mental retardation, developmental disability, Alzheimer's disease, other mental or emotional condition
Physical/functional	(1) yes	(2) no	difficulties in ADLs or IADLs
Severity	(1) yes	(2) no	need help in ADLs or IADLs
Employment	(1) yes	(2) no	employed vs. non-employed; full-time vs. part-time
Actively sought a job	(1) yes	(2) no	no job all month, on layoff or looking for work all weeks; no job, at least one but not all weeks on layoff or looking for work

Table 2. Socio-demographics of Study Respondents Between Age 45 and 64

Variables	All ^a	With Disabilities ^b	Without Disabilities ^c	Significance (p)
Average age (Years)	53.1	54.5	52.5	< 0.001 ^d
Gender (%)				< 0.001 ^e
Male	48.5	42.4	51.2	
Female	51.5	57.6	48.8	
Race (%)				
White	85.6	82.6	87.0	< 0.001 ^e
Black	10.5	13.7	9.0	< 0.001 ^e
American Indian, Aleut, Eskimo	0.8	1.0	0.7	< 0.001 ^e
Asian or Pacific Islander	3.1	2.7	3.3	< 0.001 ^e
Highest Education (%)				
6 th grade or less	5.0	7.6	3.9	< 0.001 ^e
High school	43.1	52.3	39.1	< 0.001 ^e
College	41.1	34.1	44.2	< 0.001 ^e
Graduate school	10.7	6.0	12.8	< 0.001 ^e
Married (%)	70.9	61.4	75.1	< 0.001 ^e
Metropolitan residence (%)	61.0	56.7	62.9	< 0.001 ^e
Employment in reference month (%)				
Full-time	66.0	42.6	76.2	< 0.001 ^e
Part-time	8.2	8.6	8.1	< 0.001 ^{e, g}
Not employed	25.8	48.8	15.7	< 0.001 ^e
People without a job (%)				< 0.001 ^e
Actively seeking for a job	4.0	3.0	6.2	
Not actively seeking for a job	96.0	97.0	93.8	

Table 2. (continued)

Variables	All ^a	With Disabilities ^b	Without Disabilities ^c	Significance (p)
Class of worker (%)				
Private, for-profit employee	42.2	28.2	48.3	< 0.001 ^e
Private, not-for-profit employee	5.7	4.0	6.4	< 0.001 ^e
Government worker (local, state, or federal)	14.4	9.7	16.3	< 0.001 ^e
Others ^f	37.7	58.1	29.0	< 0.001 ^e
Previous or current occupation (%)				
Mechanical, construction, farming ^h	23.3	26.8	21.8	< 0.001 ^e
Sales, Clerical, administrative support or services	30.8	30.9	30.8	< 0.001 ^{e, g}
Managerial, professional or technical support	26.3	18.5	29.7	< 0.001 ^e
Others	19.6	23.8	17.7	< 0.001 ^e
Perceived personal health (%)				
Poor	5.8	18.6	0.2	< 0.001 ^e
Fair	11.2	28.5	3.5	< 0.001 ^e
Good	28.1	30.8	26.9	< 0.001 ^e
Very good	33.3	16.5	40.8	< 0.001 ^e
Excellent	21.6	5.6	28.6	< 0.001 ^e
Disabilities (%) ⁱ				
Sensory (hearing or vision)	8.0	26.2	-	-
Mobility	25.9	84.5	-	-
Communication	0.9	3.0	-	-
Learning	1.4	4.5	-	-
Mental	2.8	9.1	-	-
Physical & functional activities	7.5	24.4	-	-
Severe physical & functional disability (%)	6.5	21.2	-	-

Table 2. (continued)

Variables	All ^a	With Disabilities ^b	Without Disabilities ^c	Significance (p)
Health conditions that caused difficulties in activities (%)				
Arthritis or rheumatism	7.2	23.6	-	-
Back or spine problems	8.4	27.2	-	-
Heart trouble	2.9	9.5	-	-
Kidney problem	0.4	1.4	-	-
Cerebral palsy	0.1	0.2	-	-
Lung or respiratory problems	1.7	5.7	-	-
Medicaid coverage	5.9	16.2	1.3	< 0.001 ^e
Health insurance coverage	78.9	64.3	85.4	< 0.001 ^e
Social Security benefits for self (%)	11.3	24.9	5.3 ^j	< 0.001 ^e
Disability Insurance for self (%) ^k	4.0	12.2	0.3 ^l	< 0.001 ^e
Supplemental Security Income for self (%)	3.2	9.8	0.3	< 0.001 ^e
Average income in reference month (\$)				
Total household income	4,953	3,674	5,520	< 0.001 ^d
Total household earned income	4,173	2,665	4,843	< 0.001 ^d
Total person's earned income	2,130	1,137	2,570	< 0.001 ^d

Note. ^a n = 55,211,157. ^b n = 16,962,789. ^c n = 38,248,368.

^d t test. ^e χ^2 . ^f Including people who were in business, contingent workers, or family workers without pay. ^g Not statistically significant at .05 level in unweighted analysis. ^h Occupation includes mechanical, repairing, construction, machine operation, farming, forestry, fishing or armed services. ⁱ The total percentage is greater than 100 because some people had more than one disability. ^j Including survivors. ^k Information was obtained from the Wave 1 1996 core data file. ^l DI beneficiaries in Wave 1 but not in Wave 5.

Table 3. Socio-demographics of Study Respondents with Disabilities by Employment Status

Variable		Employed ^a (%)	Non-employed ^b (%)	Significance (p)	Employed Full-time ^c (%)	Employed Part-time ^d (%)	Significance (p)
Gender	Male/Female	43.9/56.1	40.8/59.2	< 0.001 ^e	46.1/53.9	32.9/67.1	< 0.001 ^e
Race	White/Others	86.4/13.6	78.7/21.3	< 0.001 ^e	86.6/13.4	85.1/14.9	< 0.001 ^{e, k}
Marital status	Married/Not married	54.2/45.8	57.7/42.3	< 0.001 ^e	65.0/35.0	64.5/35.5	< 0.001 ^{e, k}
Education	6 th grade or less	3.8	11.7	< 0.001 ^e	3.4	5.8	< 0.001 ^e
	High School	44.7	60.3	< 0.001 ^e	43.2	51.8	< 0.001 ^e
	College	42.5	25.2	< 0.001 ^e	44.1	35.2	< 0.001 ^e
	Graduate	9.0	2.9	< 0.001 ^e	9.3	7.2	< 0.001 ^{e, k}
Metropolitan/Non-metropolitan residence		64.9/36.1	56.5/43.5	< 0.001 ^{e, k}	56.5	58.4	< 0.001 ^{e, k}
Employment status	Full-time/Part-time	83.2/16.8	-		100.0	100.0	
Current or previous occupation	Mechanical, construction, etc. ^h	26.1	27.6	< 0.001 ^{e, k}	26.8	22.6	< 0.001 ^{e, k}
	Sales, Clerical, admin. svc. ⁱ	34.9	26.7	< 0.001 ^e	33.0	44.3	< 0.001 ^e
	Managerial, professional or Technical support	25.5	11.2	< 0.001 ^e	27.3	16.9	< 0.001 ^e
	Others	13.5	34.5	< 0.001 ^e	13.0	16.2	< 0.001 ^{e, k}

Table 3. (continued)

Variable	Employed ^a (%)	Non-employed ^b (%)	Significance (p)	Employed Full-time ^c (%)	Employed Part-time ^d (%)	Significance (p)
Class of worker						
Private, for-profit employee	55.1	-	-	55.9	51.4	< 0.001 ^{e, k}
Private, not-for-profit employee	7.9	-	-	7.8	8.6	< 0.001 ^{e, k}
Government worker	19.1	-	-	20.3	12.5	< 0.001 ^e
Others ^j	17.9	-	-	16.0	27.5	< 0.001 ^e
Perceived personal health						
Poor	6.3	31.5	< 0.001 ^e	5.5	10.1	< 0.001 ^e
Fair	23.5	33.8	< 0.001 ^e	22.5	28.5	< 0.001 ^e
Good	37.9	23.4	< 0.001 ^e	38.3	35.5	< 0.001 ^{e, k}
Very good	24.0	8.5	< 0.001 ^e	24.7	20.6	< 0.001 ^e
Excellent	8.3	2.8	< 0.001 ^e	8.9	5.3	< 0.001 ^e
Type of Disabilities						
Sensory	25.6	26.8	< 0.001 ^{e, k}	26.4	21.4	< 0.001 ^e
Mobility	79.7	89.4	< 0.001 ^e	79.2	82.5	< 0.001 ^e
Communication	1.7	4.4	< 0.001 ^e	1.5	2.6	- ^g
Learning	4.5	4.5	< 0.001 ^{e, k}	4.1	6.8	< 0.001 ^{e, k}
Mental health	4.3	14.2	< 0.001 ^e	3.1	10.2	< 0.001 ^e
Physical/functional	12.2	37.2	< 0.001 ^e	11.0	18.2	< 0.001 ^e

Table 3. (continued)

Variable	Employed ^a (%)	Non-employed ^b (%)	Significance (p)	Employed Full-time ^c (%)	Employed Part-time ^d (%)	Significance (p)
Severe physical/functional disability	5.9	37.2	< 0.001 ^e	5.1	10.3	< 0.001 ^e
Health conditions caused difficulties in activities						
Arthritis or rheumatism	22.5	24.6	< 0.001 ^{e, k}	21.5	27.8	< 0.001 ^e
Back or spine problems	26.4	28.1	< 0.001 ^e	26.3	26.6	< 0.001 ^{e, k}
Heart trouble	5.8	13.3	< 0.001 ^e	5.6	6.9	< 0.001 ^{e, k}
Kidney problems	0.6	2.3	- ^g	0.4	1.2	- ^g
Cerebral palsy	0.2	0.3	- ^g	0.2	0.2	- ^g
Lung or respiratory problems	3.6	7.8	< 0.001 ^e	3.5	4.2	- ^g
Average age (year)	53.2	55.8	< 0.001 ^f	53.0	54.8	< 0.001 ^f
Average Income in reference month (\$)						
Total household income	4,712	2,581	< 0.001 ^f	4,765	4,452	< 0.001 ^{f, k}
Total household earned income	4,029	1,231	< 0.001 ^f	4,169	3,332	< 0.001 ^f
Total person's earned income	2,217	0	< 0.001 ^f	2,455	1,041	< 0.001 ^f

Note. ^a n = 8,693,275. ^b n = 8,269,514. ^c n = 1,456,502. ^d n = 7,236,773.

^e χ^2 . ^f t test. ^g Unweighted sample size < 100. ^h Occupation includes mechanical, repairing, construction, machine operation, farming, forestry, fishing or armed services. ⁱ Occupation includes sales, clerical, administrative support or services. ^j People who were in business, contingent workers, or family workers without pay. ^k not statistically significant at .05 level in unweighted analysis.

Table 4. Multivariate Logistic Regression Results by Employment Status

Variable	<u>Employed vs. Non-employed</u> Adjusted Odds Ratio (95% CI)		<u>Employed Full-time vs. Employed Part-time</u> Adjusted Odds Ratio (95% CI)	
Age				
45-49	2.201	(2.192, 2.209)	2.177	(2.164, 2.189)
50-54	1.987	(1.980, 1.994)	1.849	(1.839, 1.859)
55-59	1.617	(1.612, 1.623)	1.688	(1.679, 1.698)
60-64	1.000	(reference)	1.000	(reference)
Male	1.527	(1.523, 1.531)	1.933	(1.925, 1.942)
Race – White	1.375	(1.371, 1.380)	1.158	(1.151, 1.164)
Married	0.540	(0.539, 0.542)	0.730	(0.727, 0.733)
Household earned income				
≤ \$1,000	0.101	(0.100, 0.101)	0.329	(0.327, 0.331)
\$1,001-\$2,000	0.465	(0.463, 0.467)	1.178	(1.170, 1.185)
\$2,001-\$3,000	0.626	(0.623, 0.629)	1.323	(1.314, 1.331)
\$3,001-\$4,000	0.977	(0.972, 0.982)	1.244	(1.236, 1.252)
≥ \$4,001	1.000	(reference)	1.000	(reference)
Metropolitan residence	0.793	(0.791, 0.795)	0.827	(0.824, 0.830)
Perceived personal health				
Poor	0.220	(0.218, 0.221)	0.530	(0.524, 0.536)
Fair	0.497	(0.494, 0.500)	0.627	(0.621, 0.633)
Good	0.819	(0.814, 0.824)	0.808	(0.801, 0.815)
Very good	1.153	(1.145, 1.160)	0.825	(0.818, 0.832)
Excellent	1.000	(reference)	1.000	(reference)

Table 4. (continued)

Variable	<u>Employed vs. Non-employed</u> Adjusted Odds Ratio (95% CI)		<u>Employed Full-time vs. Employed Part-time</u> Adjusted Odds Ratio (95% CI)	
Education				
6 th grade or less	0.331	(0.329, 0.334)	0.668	(0.660, 0.675)
High school	0.542	(0.539, 0.545)	0.803	(0.797, 0.809)
College	0.803	(0.798, 0.808)	1.042	(1.034, 1.050)
Graduate school	1.000		1.000	
Disabilities				
Sensory	1.134	(1.130, 1.137)	1.263	(1.256, 1.269)
Mobility	0.810	(0.807, 0.814)	1.029	(1.023, 1.036)
Communication	0.910	(0.903, 0.918)	_a	
Learning	1.804	(1.792, 1.817)	0.632	(0.626, 0.638)
Mental	0.436	(0.434, 0.439)	0.344	(0.341, 0.346)
Physical/functional	0.993	(0.989, 0.998)	0.832	(0.825, 0.838)
Severe physical/functional	0.224	(0.222, 0.225)	0.736	(0.729, 0.744)
Health conditions				
Arthritis or rheumatism	1.093	(1.090, 1.096)	0.822	(0.818, 0.826)
Back or spine problems	0.853	(0.851, 0.856)	0.888	(0.884, 0.892)
Heart trouble	0.705	(0.702, 0.708)	0.845	(0.838, 0.851)
Lung or respiratory problems	0.671	(0.667, 0.674)	_a	

Note. ^a Items on communication disability, cerebral palsy, lung/respiratory, or kidney problems were excluded from the analysis if the unweighted sample size was less than 100.