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Prevalence and causes of work disability among working-age U.S. adults, 2011–2013, NHIS

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ABSTRACT

Background: Chronic conditions are among the major causes of work disability (WD), which is associated with lower employment, less economic activity, and greater dependence on social programs, while limiting access to the benefits of employment participation.
Objective/Hypothesis: We estimated the overall prevalence of WD among working-age (18–64 years) U.S. adults and the most common causes of WD overall and by sex. Next, we estimated the prevalence and most common causes of WD among adults with 12 common chronic conditions by sex and age. We hypothesized that musculoskeletal conditions would be among the most common causes of WD overall and for individuals with other diagnosed chronic conditions.
Methods: Data were obtained from years 2011, 2012, and 2013 of the National Health Interview Survey. WD was defined by a "yes" response to one or both of: "Does a physical, mental, or emotional problem NOW keep you from working at a job or business?" and "Are you limited in the kind OR amount of work you can do because of a physical, mental or emotional problem?"
Results: Overall, 20.1 million adults (10.4% (95% CI = 10.1–10.8) of the working-age population) reported WD. The top three most commonly reported causes of WD were back/neck problems 30.3% (95% CI = 29.1–31.5), depression/anxiety/emotional problems 21.0% (19.9–22.0), and arthritis/rheumatism 18.6 (17.6–19.6). Musculoskeletal conditions were among the three most common causes of WD overall and by age- and sex-specific respondents across diagnosed chronic conditions.
Conclusions: Quantifying the prevalence and causes of work disability by age and sex can help prioritize interventions.

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Introduction

Work disability is associated with lower employment, less economic activity, and greater dependence on social programs.[1] Employment participation provides important opportunities to contribute to society and remain financially independent[2,3] and is often considered "central to identity, social roles, and social status."[4] Conversely, there is growing evidence that being outside the labor force may have a negative impact on a person's health.[2,5]

There are additional important societal consequences of work disability, particularly in terms of economic losses; cost of disability benefits in some countries equal 4–5% of gross domestic product (GDP).[6] In the U.S., calendar year 2013 federal expenditures for cash payments made to enrollees in the Supplemental Security Income Program, which provides income supplements to qualifying people with disabilities and those who are aged or blind, were $53.4 billion, and these payments are projected to increase (in dollars adjusted to 2014 levels) by 0.5% per year over the next 25 years.[7] Importantly, despite misperceptions and continued stigma, decades of data indicate that most people with work disability want to work.[3,8,9] Work has deep and important meanings to most adults, including those with work disability, which can be motivating for returning to work and is associated with self-esteem and improvements in physical and mental health in appropriate jobs.[3]

Chronic conditions are among the major causes of work disability.[10,11] For example, reduced employment among people with musculoskeletal (MSK) conditions of working-age (18–64 years) has been estimated to represent 10% points lower employment and an earnings gap of US$98.2 billion compared with those

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without MSK conditions.[12] Also, MSK conditions are the most common causes of sick leave and health-related early retirement in Europe,[13] and the 2010 Global Burden of Disease Study reported that, taking death and disability into account, MSK conditions are the fourth (third in developed countries) greatest burden on the health of the world's population representing 6.7% of global disability-adjusted life years and responsible for 21% of global disability as measured in years lived with a disability.[14] In addition, findings from a population-based study indicate that approximately 1/3 of working-age (18–64 years) U.S adults with arthritis report arthritis-attributable work limitation (5% of the total working-age population).[15] However, while there is substantial evidence that arthritis and other MSK conditions account for an extensive proportion of work disability among adults, other prevalent conditions (e.g., heart disease) and less prevalent but more acutely disabling conditions (e.g., stroke) contribute considerably to work disability.[10]

Considering that half of U.S. adults have one or more chronic conditions,[16] quantifying the prevalence and proportion of work limitation among U.S. adults, particularly by identifying reported causes, will establish the current magnitude of the problem and help to identify target groups for intervention. Because chronic conditions are so often the cause of work disability, it is useful to know which and to what extent these conditions do actually result in work disability since the presence of most conditions does not, in itself, equate with work disability.[11] Existing interventions that can decrease, delay, or mitigate work limitations may be most effective when directed to specific groups.

In terms of patterns of chronic condition prevalence, there are important differences between men and women, overall and, in some cases, by age.[16] For example, the presence of multiple chronic conditions is higher in women and increases with age, including in the 18–44 and 45–64 year old age groups.[17] There are also known traditional and contemporary differences in male and female occupations and labor force trajectories (e.g., time away for child-rearing) and participation by sex.[18] According to the Bureau of Labor Statistics, 57.7% of women were in the labor force in 2012 compared with 70.5% of men.[18] Given the established differences in chronic disease prevalence and labor force attachment between men and women, we felt it was important to examine causes of work disability stratified by sex.

We undertook to answer two sets of research questions. In Part 1 (overall prevalence and causes), we estimated the overall prevalence of work disability among working-age (18–64 years) U.S. adults and the most common causes of work disability overall and by sex. In Part 2 (causes among people with a chronic condition and work disability), we estimated the prevalence and most common causes of work disability among adults with 12 common chronic conditions by sex and two age groups.

We hypothesized that, due to their prevalent and disabling features, MSK conditions would be among the most common causes of work disability overall and for individuals with other diagnosed chronic conditions.

Methods

Data were obtained from years 2011, 2012, and 2013 of the National Health Interview Survey (NHIS), an ongoing in-person survey nationally representative of the civilian, non-institutionalized U.S. population, linking the Person File to the Sample Adult Core for each year (n = 33,014; 34,525; and 34,557; response rate = 66.3%, 61.2%, and 61.2%, respectively). For the purposes of this study, work disability was defined by a "yes" response to one or both of: "Does a physical, mental, or emotional problem NOW keep you from working at a job or business?" and "Are you limited in the kind OR amount of work you can do because of a physical, mental or emotional problem?" and reflects both short- and long-term disability. Respondents who said "yes" to either were also asked the question "What conditions or health problems cause your limitations?" and identified all health problems causing their limitations from a 19-item flash card, including an "other" category. Answers to this question allowed the respondent to attribute their problems to all condition(s) that caused their work disability. Causes were not mutually exclusive or ranked by respondents. On average respondents reported 1.9 causes of work disability; men in the younger and older age groups (1.1 and 1.9, respectively) reported slightly fewer causes on average than women (1.5 and 2.2, respectively). The median and mode for number of reported causes was 1.0 overall and for each age and sex group. While we reported them separately, we considered "back or neck problem" or "arthritis/rheumatism" to be MSK conditions for discussing results of this study. The "musculoskeletal/connective tissue problem" category in the figures and tables represents NCHS-provided recodes of "other" cause nominations from respondents. Due to uncertainty about what this group represents, it is not included in our study definition of the MSK group.

All respondents were separately asked about the presence of chronic health conditions independent of work disability. We selected 12 of these based on existing literature documenting the prevalence, burden, and potential amenability to intervention of these conditions.[10,19,20] Arthritis was identified by "yes" to "Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?" The same question wording was used for cancer (excluding non-melanoma skin cancer), diabetes (non-gestational), hypertension, heart conditions (coronary heart disease, angina, heart attack, and any other kind of heart condition or disease), and stroke. The symptom or diagnosis period was "still have asthma" for current asthma, past 12 months for chronic bronchitis, and past 3 months for low back and/or neck pain (these last two were queried separately but combined for analysis). Serious psychological distress (SPD) was calculated using the Kessler-6 (K6) scale, with a recall period of 30 days. The K6 was developed to identify and monitor prevalence and trends in nonspecific SPD at the population-level using a six-question scale with items rated from 0 (none of the time) to 4 (all of the time) for feeling sad, worthless, nervous, restless, hopeless, and that everything was an effort. Reported values were summed to create a total score, and scores of $\geq$13 identified respondents with SPD.[21] Obesity was calculated from self-reported height and weight and classified as a body mass index (weight in kg/height in m^2) of $\geq$30.0. Vision trouble was identified by self-reported "trouble seeing, even when wearing glasses or contact lenses."

Statistical analyses

Data from years 2011, 2012, and 2013 of the NHIS were combined to create an analytic dataset for annualized estimates. Analyses for Part 1 (overall prevalence and causes) aims proceeded in two steps. To address our first aim we generated estimates of the prevalence of work disability among working-age U.S. adults with weighted proportions and 95% confidence intervals (CIs). We next calculated estimates of the frequency of reported causes of work disability, overall and by age and sex. In Part 1 analyses, the denominator was working-age adults, and we were able to estimate work disability by four subsets of the working-age population (18–24; 25–44; 45–54; and 55–64) as well as by sex.

To address our Part 2 (causes among people with a chronic condition and work disability) aims, we performed 12 separate analyses restricted to respondents with work disability who

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