Disability and Health Journal 10 (2017) 58–64

Disability and Health Journal

www.disabilityandhealthjnl.com

Research Paper

Receipt of recommended services among patients with selected disabling conditions and diabetes

Kevin J. Bennett, Ph.D.[a,*], Suzanne McDermott, Ph.D.[b], Joshua R. Mann, M.D.[a], and James Hardin, Ph.D.[b]

[a]*University of South Carolina, School of Medicine, Department of Family & Preventive Medicine, Columbia SC, USA*
[b]*University of South Carolina, Arnold School of Public Health, Department of Epidemiology & Biostatistics, Columbia SC, USA*

Abstract

Background: Receiving recommended services for patients with diabetes is associated with improved outcomes and reduced morbidity. People with diabetes who also have a condition associated with disability represent one group that is at risk for health disparities.

Objective: To examine service utilization among persons with selected disabling conditions and diabetes, compared to those without.

Methods: 2007–2012 Medical Expenditure Panel Survey Full-Year Consolidated files, medical conditions files, and the 1996–2012 pooled linkage files were merged for this analysis. This analysis focused on five selected conditions that are associated with disability: Visual impairment and blindness, spinal cord injury, intellectual disability, multiple sclerosis, and muscular dystrophy. Unadjusted and adjusted rates of receipt estimated using various multivariable regression techniques.

Results: The proportion with diabetes was higher among those with a selected condition (12.1%) than without (7.1%). Respondents with a selected condition were more likely to have a foot exam; for all other services, the rate of receipt across the two groups was similar. Controlling for other factors, having a selected condition was only a significant factor for foot exams (AOR 1.49, 1.07–2.07). Different factors, but not having a selected condition, were associated with the receipt of each additional service.

Conclusions: In general, individuals received the full complement of recommended diabetes management services at a low rate, whether or not they had one of the selected disabling conditions. The comparison results indicated few disparities in diabetes management services among those with selected conditions compared those without these conditions, excepting foot exams, which were more common in the group with a disabling condition.

Keywords: Disability; Diabetes; Primary prevention

Disabilities, which include categories such as cognitive, physical, visual, hearing, self-care, and independent living, affect more than 12% of the US population. This proportion increases with age, up to more than 50% among those over the age of 75. The proportion also differs by race/ethnicity, with Native Americans and African Americans having a higher proportion than whites. There are hundreds of conditions that are associated with disability, and the prevalence varies by type, with the most common being ambulatory, independent living, or cognitive.[1] Researchers have primarily examined health disparities by classifying people with disability into broad domains (such as physical or intellectual) rather than specific medical conditions. This approach can be useful, yet it can yield findings that are difficult to interpret due to the broad nature of the classification. By identifying conditions more specifically by clinical diagnoses there is a greater ability to understand the needs and experiences of affected individuals. Since the degree of disability is impacted by functional and social dimensions in addition to medical conditions, it is worthwhile to explore differences in health outcomes by all of these dimensions.[2]

Individuals with potentially disabling conditions often have a variety of concurrent health problems, such as diabetes. Diabetes mellitus (DM) is one of the most common chronic diseases among adults in the United States, and has been increasing in prevalence in recent decades,[3–7] largely in tandem with increases in obesity prevalence.[8,9] This is a

This work was conducted with funding from the Centers for Disease Control and Prevention, under grant # 1U01DD001007-02, Coordinating Center for Research and Training to Promote the Health of People with Developmental and Other Disabilities. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

The authors have no conflicts of interest to declare.

* Corresponding author. Fax: +1 803 434 8374.

E-mail address: kevin.bennett@sc.edu or http://familymedicine.med.sc.edu/kbennett.asp (K.J. Bennett).

1936-6574/$ - see front matter
http://dx.doi.org/10.1016/j.dhjo.2016.09.001

troubling trend, as DM is an important risk factor for both "macrovascular" (coronary artery disease, stroke, peripheral vascular disease) and "microvascular" diseases (diabetic nephropathy, retinopathy, and neuropathy).[10–12] Sequelae of diabetic complications include blindness, renal failure, amputations, and death.[5] Having such a concurrent disease, particularly among those with selected disabling conditions, will have substantial long-term health care and outcome implications for these individuals.

Medical management of individuals with DM should include a range of services designed to prevent or delay the occurrence of complications such as those listed above. Recommended services include the following[13–15]:

- Annual dilated eye examination
- Monitoring of blood glucose control (glycosylated hemoglobin) at least every 6 months
- Monitoring and intensive control of blood cholesterol levels
- Thorough foot examination at least annually
- Annual influenza immunization

Receiving recommended services, at the proper intervals, is associated with improved glycemic control, improved outcomes, reduced morbidity and comorbidity, and reduced adverse effects.[15,16] These services are not always provided, due to patient preferences and knowledge, provider practice patterns, financial concerns, access barriers, or other barriers.[17,18]

People with a disabling condition represent a group that is at risk for health disparities, due to a range of factors that include barriers to the receipt of health care, direct effects of the disabling condition on health, inadequate training of providers on the unique health needs of people with particular disabilities, and perhaps others.[19] National and international reports have emphasized the importance of addressing health disparities for people with disability, such as the Institute of Medicine (IOM) reports "The Future of Disability in America" and "Unequal Treatment," the World Health Organization's (WHO) International Classification of Functioning, Disability and Health (ICF), and the 2004 American Public Health Association (APHA) policy "Reducing health disparities in people with disabilities through improved environmental programmatic and service access."[20–23] These documents urge research support, standardized disability related identifiers on surveys, training of professions about the health promotion needs of people with disabilities and enforcement of Americans with Disabilities Act requirements. The Healthy People 2020 goals includes a second goal that is "Achieve health equity, eliminate disparities and improve health of all groups".[22,24] This goal clearly includes people with disabilities as evidenced by the template that will be used to evaluate all the objectives included in the new dynamic document.

Because preventing complications from DM requires well-coordinated health care, it stands to reason that barriers to receiving appropriate care for people with a disabling condition may increase the risk of receiving inadequate DM management. The primary goal of this study was to examine service utilization among persons with selected disabling conditions who have diabetes versus those without diabetes. The following are the research questions addressed in this analysis:

- What is the prevalence of diabetes in a sample of persons with selected conditions (visual impairment and blindness, spinal cord injury, intellectual disability, multiple sclerosis, and muscular dystrophy)?
- Of those with diabetes, what proportion receives recommended care?
- How does utilization of diabetes management services differ for diabetics with a selected condition versus those without?

Methods

This analysis utilized the 2007–2012 Medical Expenditure Panel Survey (MEPS) Full-Year Consolidated files. The MEPS sample is derived from the National Health Interview Survey (NHIS), which is the primary survey that collects information regarding the health of the US civilian, non-institutionalized population. The NHIS collects detailed information regarding respondents' health, health behaviors, service utilization, conditions, and demographics. Both the NHIS and MEPS exclude individuals in long-term care facilities, active-duty military personnel, incarcerated individuals, and residents living in foreign countries. The MEPS consolidated files contain information from the Household and Medical Provider component MEPS files, combined into one file.

MEPS respondents are followed for two years (panels), and overlap with subsequent panels on six-month intervals. MEPS data are weighted using individual level weights derived from the probability of selection as well as non-response rates within NHIS, to be reflective of the national population of non-institutionalized adults in the United States.[c] The analysis used the Consolidated Full-Year files as well as the medical conditions files (event-level files that are transposed to the person level, and merged according to unique individual identifiers) for each year; these year-specific files were then appended to create a single data file for analysis. Finally, the 1996–2012 pooled linkage file was utilized to estimate a variance structure that accounts for the pooling of the years. The individual weight was divided by the number of years (i.e. 6) to ensure a total sample representative of the US, in accordance with MEPS estimation guidelines.[d] Exclusions were made if respondents were missing data for any of the analytic variables;

[c] *Medical Expenditure Panel Survey.* Accessed July 2015: http://meps.ahrq.gov/.

[d] http://meps.ahrq.gov/mepsweb/data_stats/download_data/pufs/h36/h36u12doc.pdf.