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Multiple Chronic Conditions and Health Disparities Among People with Disabilities Compared to People without Disabilities

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Introduction

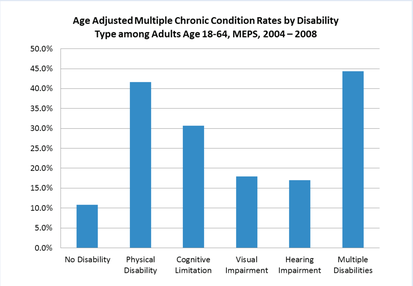
- Recent research shows that people with disabilities have a greater prevalence (1) and more complex mix of comorbidities and multiple chronic conditions (MCCs) (2) than people without disabilities. Yet, little is understood about the epidemiology of common comorbidities among people with disabilities.
- An important next step in disability surveillance research (3) and MCC research (4) is to disaggregate data into disability subgroups to better identify risk factors for targeted interventions and outcomes. Additionally, disaggregating data is important to better understanding the relationship between those with MCC and disparities in access to health care (4), and resulting health status.
- For this presentation we : (a) Describe the predictors of comorbidity of chronic diseases in the disability subgroups, (b) describe common combinations of chronic disease across disability subgroups, and (c) compare and contrast these findings to those with no disability with MCC.

Methods

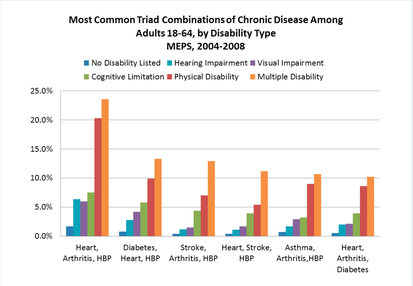
- We used the Medical Expenditures Panel Survey (MEPS) data for this project. This nationally representative panel survey includes thorough demographic, health care expenditure and utilization information on individuals and families, as well as their health care providers, employers and types of health care coverage for non-institutionalized people (5).
- For sufficient disability subgroups sample size we pooled five years of data for years 2004 – 2008.
- We identified adults aged 18-64, resulting in an unweighted total sample of 98,013 (weighted sample = 929,377,370).
- We constructed six mutually exclusive groups from our sample: physical disability, cognitive limitations, hearing impairment, visual impairment, multiple disabilities, and no disability.
  - Cognitive limitation = responding "yes" at two points in time to experiencing confusion or memory loss, having problems making decisions, or requiring supervision for their own safety.
  - Physical disability = responding "yes" at two points in time to walking limitations, using assistive device, or needing assistance with activities of daily living.
  - Hearing impairments = responding "yes" to: even with hearing aids 'moderate impairment,' 'major impairment' or 'deaf.'
  - Visual impairments = responding "yes" to: even with glasses/contacts "impaired near, but not far,' 'impaired both near and far,' or 'blind.'
  - Multiple disabilities = those who screened "yes" to any two or more of the above four disabilities categories (cognitive limitation, physical disability, hearing impairment, visual impairment)
  - No disability = those not reporting any type of disability
- Multiple chronic conditions = having two or more of the following chronic conditions: high blood pressure, stroke, emphysema, high cholesterol, diabetes, arthritis, or asthma.
- We ran descriptive analyses across subgroups to compute raw prevalence percentages and confidence intervals for all measured factors. Additionally we used weighted logistic regression analyses to assess associations between disability type and multiple chronic conditions, with adjustment for socio-demographic variables and health status.

Results

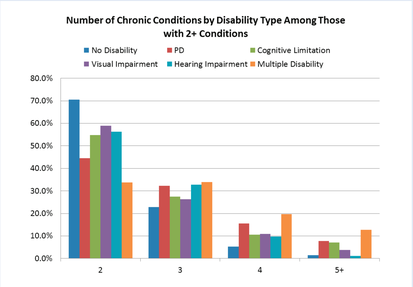
- When standardized for age, working age adults with no disability had a much smaller rate of MCC compared to all five disability groups (Figures 1).



- Regardless of the triad combination of chronic diseases, those with multiple disabilities had the highest rates of MCCby a substantial margin (Figure 2).



- More than 54% of those with cognitive limitations, visual impairments and hearing impairments reported only 2 chronic conditions, while only 44% of the physical disabilities group and one-third of the multiple disabilities group reported only two. The greatest number of chronic conditions appeared among people with multiple disabilities or physical disabilities, with nearly 33% and 23% having four or more chronic conditions. The rates of four or more chronic conditions were substantially lower among those with visual or hearing impairments and those with no disability.



Demographic Characteristics of Those With Multiple Chronic Conditions

Age

- Among those with MCC, **age** differed little across groups, with a mean age of 51 years, overall.

Sex

- With the exception of the visual impairments group, all disability groups were comprised of more **women** than **men** overall, and to a greater extent than those with no disability. All disability groups had a fewer number who were married than those without disabilities.

Race

- All disability groups except those with hearing impairments had a greater proportion of Blacks, and the highest prevalence of Hispanics was among people with cognitive limitations or visual impairments.

Employment

- With the exception of hearing impairments, all disability groups were less likely to be employed at any age. However**, employment** varied widely across the disability groups but increased with age in every group. Those with cognitive limitation, multiple disabilities, or physical disability experienced the greatest unemployment and the hearing impairment group experienced the least.

Education

- Variation existed within **education**. Although a moderate percentage (range: 19.2% to 31.4%) of the sample had not graduated high school, regardless of disability type, a greater proportion of adults with MCC and hearing impairments (30.2%) than other disability groups had attained more education, and a greater proportion of adults with physical disabilities had graduated high school. All disability groups had lower educational attainment than the no disability group.

Income

- Although the majority of people in the sample had an **income** above the poverty level in all disability groups, a greater proportion reported a "poor/negative" income than those without a disability. Poverty rates for some disability groups were more than three times higher than those without disability, with people in the cognitive limitations or multiple disabilities group having the largest proportion of low income: 36.4% and 38.1%, respectively.

Usual source of care and Weight

- A greater proportion of those with cognitive limitations, physical disabilities or multiple disabilities had a **usual source of care**, and a greater proportion was **obese**.

Health Status

- Substantially more people with physical disabilities, cognitive limitations or multiple disabilities reported fair/poor **health status** compared to those with no disabilities. Notably, among those with multiple disabilities 80.9% reported fair/poor health status, a rate 3.4 times higher than those with no disabilities.

Mental Health Status

- Substantially more people with physical disabilities, cognitive limitations or multiple disabilities also reported having fair/poor ***mental* health** compared to those with no disabilities. Notably, among those with cognitive limitations 65.2% reported fair/poor *mental* health status, a rate 6.8 times higher than those with no disabilities.

Cost of Care

- People with MCC and no disability reported average yearly medical expenditures lower than all disability groups. Those with physical disabilities or multiple disabilities had average yearly medical expenditures 1.9 and 2.5 times higher, respectively, than those with no disability.

Factors Associated with Chronic Conditions

- Those with no disability and MCC were all significantly more likely to have 2+ chronic conditions, if they were older, unemployed, unmarried, had a high school diploma or less, lived in the Midwest or South (compared to the West), lived in rural areas, reported "fair/poor" health, had an unhealthy weight (BMI $\leq$ 18.5 or > 30), or were black (vs. other), (Table 2). On the other hand, among those with no disability and MCC, Hispanics and those without a usual source of care were less likely to have multiple chronic conditions.
- For all disability groups, older age predicted whether a person had two or more chronic conditions, and in every disability group except hearing impairments, those who reported their health as fair/poor, and those who had an unhealthy weight (BMI $\leq$ 18.5 or > 30) were more likely to have two or more chronic conditions.
- Among those with cognitive limitations or physical disabilities, living in the Midwest was predictive of a greater likelihood of having two or more chronic conditions, but being male was predictive of having less than two chronic conditions.
- For those with physical disability, visual impairment or multiple disabilities, having a usual source of care was predictive of having MCC.
- In addition to the relationships already noted, those with a physical disability living in the Northeast predicted greater likelihood of having more than two chronic conditions. Among those with cognitive limitations, being white (vs. other) predicted having few chronic conditions. For those with visual or hearing impairments, having less than a high school education predicted having MCC. And, for those with visual impairment being Hispanic was predictive of having fewer than two chronic conditions.

Limitations

Like all data, MEPS data have important limitations:

- Responses are self-reported, creating potential for recall errors.
- Responses for those with cognitive limitations may be more likely to have given by proxy, creating potential for bias or greater inaccuracy for that group. proxy responses.
- In addition, the questions used to identify and define cognitive limitations are broad, thereby including a wide range of disability from intellectual disability to dementia.
- MEPS does not employ oversampling for disability; thus some uncommon disabilities may be underrepresented.

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Discussion

- Disability subgroups of working age adults experience multiple chronic conditions at higher rates than those with no disabilities, with highest rates among those with physical disability (41.7%) or multiple disabilities (44.3%). Moreover, a substantially greater proportion within each of the disability subgroups with MCC had a larger number of chronic conditions than those with no disability.
- Confirming previous work, older age (6), unhealthy weight and access to usual source of care (7) were all predictive of MCC regardless of disability status. However, people with disabilities and MCC were more likely to report fair/poor status for both physical and mental health, and to have unhealthy weight. Additionally, there are important differences in specific disability subgroups that have implications for health care policy and practice.
- This study adds to the literature on multiple chronic conditions (2)(6) by subdividing the population into five disability subgroups, comparing and contrasting each of these with those with no disabilities to provide empirical evidence that can help lead to more focused approaches to address the unique health care needs of each disability group.
- This study also adds to the health disparities literature that demonstrates that people with disabilities have chronic disease prevalence rates that are substantially higher than for those without disability (1, 8, 9) by providing empirical evidence that people with disabilities also have higher rates of comorbid chronic conditions.

References

1. Reichard A, Stolzle H, Fox MH. Health disparities among adults with physical disabilities or cognitive limitations compared to individuals with no disabilities in the United States. Disability and Health Journal. 2011;4(2):59-67.
2. Kronick R, Bella M, Gilmer T, Somers S. The faces of Medicaid II: Recognizing the care needs of people with multiple chronic conditions. . 2007.
3. Krahn G. WHO World Report on Disability: A review. Disabil Health J. 2011;4:141-2.
4. U. S. Department of Health & Human Services. Multiple chronic conditions: A strategic framework. U. S. Department of Health & Human Services; 2010.
5. Agency for Healthcare Research and Quality. MEPS: Medical Expenditure Panel Survey. n.d. [June 2, 2009]; Available from: http://www.meps.ahrq.gov/mepsweb/.
6. Naessens JM, Stroebel RJ, Finnie DM, Shah ND, Wagie AE, Litchy WJ, et al. Effect of Multiple Chronic Conditions Among Working-Age Adults. American Jounal of Managed Care. 2011;17(2):118-22.
7. Reichard A, Fox MH. Using Population-Based Data to Examine the Relationship between Disability and Health among Dually Eligible (Medicare/Medicaid) Adults. 2012 Academy Health Research Meeting, Disability Interest Group Meeting; 2012; Orlando, Florida.
8. Park J, Lee J, Gwack J, Park J, Kim Y, et al. Disparities between persons with and without disabilities in their participation rates in mass screening. The European Journal of Public Health. 2009;19(1):85-90.
9. Drum CE, Krahn G, Culley C, Hammond L. Recognizing and responding to the health disparities of people with disabilities. California Journal of Health Promotion. 2005;3(3):29-42.