

Health Literacy and Health Status of Older Adults

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Older adults are the fastest growing segment of the U.S. population. Older adults 65 years or older numbered 41.4 million in 2011, and they represented 13.3% of the U.S. population. By 2030, there will be nearly 72.1 million older Americans, representing 19% of the U.S. population (Administration on Aging, 2013). A substantial proportion of the older population has one or more chronic conditions (Wolff, Starfield, & Anderson, 2002). The complexities associated with managing comorbidities and the cognitive and sensory deterioration associated with aging pose challenges for this subpopulation. Lower levels of health literacy, defined as an individual's limited ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Institute of Medicine, 2004), further complicates management of chronic conditions. Low health literacy among the older adults is associated with adverse health outcomes and higher hospitalization (Baker et al., 2007; Gazmarian Williams, Peel, & Baker, 2003; Sudore et al., 2006).

According to Grossman (1972), individuals produce health by seeking medical care and other inputs such as healthy lifestyle and proper management of overall health. Theoretically, health literacy can be viewed as an input in production of health and low health literacy will lead to inefficiencies in health production. This study examined the relationship between health literacy and health status in individuals age 55 and over using data from the 2010 Health and Retirement Study (HRS). Specifically, this study examined the effect of health literacy on health status and healthcare utilization, controlling for demographic and socioeconomic factors, health insurance coverage, and health behavior.

The 2010 HRS included an experimental health literacy module to assess health literacy of respondents. Several instruments have been developed to measure health literacy. The HRS health literacy module included a subset of questions primarily from two existing measures of health literacy, including the Short Test of Functional Health Literacy in Adults (S-TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (REALM). Specifically, four numeracy questions—taking medication every 6 hours, identifying whether blood sugar reading is normal, understanding day and time information on appointment slip, and taking medication on an empty stomach with reference to lunch time, were drawn from S-TOFHLA. For this study, a numeracy score was created as the sum of correct responses to the four questions. Respondents with a score of three or higher were classified as having an adequate numeracy score. A word recognition test, REAL_R, with 11 words from the original REALM, was also included in the module. The respondents were classified as not-at-risk of low literacy if their scores exceeded six. One question assessed the ability of the respondents to fill medical forms. Those who reported being extremely or quite confident in filling medical forms were classified as having adequate confidence in filling forms.

The dependent variables in this study were measures of health status and health care utilization. Self-reported health was measured as a categorical variable with four categories: excellent, very good, good, and fair/poor health. Number of chronic conditions was measured based on self-reports of eight diagnosed chronic conditions including high blood pressure, diabetes, cancer, lung disease, heart disease, stroke, psychiatric problems, and arthritis. Measures of health care utilization were any hospital visits and out-of-pocket expenditures during the past 12 months. A binary variable measured whether the respondent felt depressed during the past 12 months.

Descriptive, bivariate, and multivariate statistics were used. Ordinal logistic regression models were estimated to examine the link between health literacy and health status as measured by self-reported health. Ordinary Least Squares regression models were estimated to investigate the relationship

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of health literacy with number of chronic conditions and out-of-pocket healthcare expenditures. Nearly 60% of the sample was extremely or quite confident in filling medical forms, 71% had adequate numeracy skills, and about 20% were at risk of low literacy based on the word recognition test.

Preliminary findings suggested that there was an association between health literacy, and health status and healthcare utilization. Generally, based on bivariate analyses, higher level of health literacy was associated with improved health status and lower healthcare utilization. Controlling for demographic and socioeconomic factors, health insurance coverage, and health behaviors, confidence in filling medical forms was positively associated with self-reported health and negatively associated with number of chronic conditions. Other measures of health literacy were not associated with health status. Also, there was no statistically significant association between health literacy and healthcare utilization among older adults. Other factors including gender, education, income, race, region of residence, and health insurance coverage were significant predictors of health and healthcare utilization. Based on these findings, we recommend that healthcare providers carefully screen and identify patients for limited health literacy as these individuals may have difficulty understanding health care information. Future research should assess the validity and reliability of health literacy measure in the HRS 2010 and whether cognitive abilities modify the relationship between health literacy and health outcomes.

References

- Administration on Aging. (2013). *A profile of older Americans: 2012*. Retrieved from http://www.aoa.gov/AoARoot/Aging_Statistics/Profile/2012/index.aspx
- Baker, D. W., Wolf, M. S., Feinglass, J., Thompson, J. A., Gazmararian, J. A., & Huang, J. (2007). Health literacy and mortality among elderly persons. *Archives of Internal Medicine, 167*(14), 1503-1509. doi:10.1001/archinte.167.14.1503
- Gazmarian, J. A., Williams, M. V., Peel, J., & Baker, D. W. (2003). Health literacy and knowledge of chronic disease. *Patient Education and Counseling, 51*, 267-275. doi:http://dx.doi.org/10.1016/S0738-3991(02)00239-2
- Grossman, M. (1972). The concept of health capital and the demand for health. *Journal of Political Economy, 80*, 223-255. doi:10.1086/259880
- Institute of Medicine. (2004). *Health literacy: A prescription to end confusion*. Washington, DC: National Academies Press.
- Sudore, R. L., Yaffe, K., Satterfield, S., Harris, T., Mehta, K. M., Simonsick, E. M., Newman, A. B., Rosano, C., Rooks, R., Rubin, S. M., Ayonayon, H. N., & Schillinger, D. (2006). Limited literacy and mortality in the elderly: The health, aging, and body composition study. *Journal of General Internal Medicine, 21*, 806-812. doi:10.1111/j.1525-1497.2006.00539.x
- Wolff, J.L., Starfield, B., & Anderson, G. (2002). Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Archives of Internal Medicine, 162*(20), 2269-2276. doi:10.1001/archinte.162.20.2269