

Health Literacy and Medicare Recipients' Knowledge of Health Insurance Options

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Abstract: Health literacy is a major problem for the aging population (Parker, Ratzan, & Lurie, 2003). The purpose of this study was to examine the relationship between health literacy and knowledge of Medicare.

A key ingredient to healthcare outcomes is health literacy. Health literacy involves determining how capable one is to process healthcare information to reach desired healthcare outcomes (Sudore et al., 2006). Health literacy is a major problem for the aging population; this population is less likely to understand written and verbal information, to follow directions, or navigate the healthcare system (Boyle et al., 2013; Parker et al., 2003). Navigating the healthcare system does not only involve processing healthcare information like prescriptions to improve health outcomes, but also involves comprehension of health insurance policies, which could improve the financial health of the Medicare beneficiary and society as a whole. Medicare beneficiaries are confused about their benefits (Dallek & Edwards, 2001; Kessler & DuGoff, 2005). Harris-Kojetin, McCormack, Jael, and Lissy (2001) emphasized “a need to develop effective ways to inform, assist, and educate beneficiaries about their Medicare plan choices” (p. 21).

Background of the Study

Health insurance is a part of the external environment of the healthcare delivery system. It is an arm or extension of the economic forces that aid in driving healthcare costs up. According to Shortell and Kaluzny (2000), *external environment* is “defined as all of the political, economic, social and regulatory forces that exert influence on the organization” (p. 14). External environments are constantly changing and may not be the same from one healthcare organization to another.

The United States' Department of Health and Human Services (n.d.) listed the determinants of health as an individual's behavior and biology and how he/she interacts with the physical and social environment, policies and interventions, and access to quality healthcare. Kickbusch (2001) included education, literacy, income, employment, and working conditions to the determinants of health. According to Toofany (2007), literacy involves three levels: functional literacy, which involves basic skills to handle everyday situations; interactive literacy, which is the ability to gather information, interpret it and apply it to changing situations; and critical literacy, which is a step further than interactive literacy because it involves analyzing and evaluating information that ultimately influences life events. Kickbusch believed that health literacy must be added to the list of skills needed for adults to function successfully in society. The Institute of Medicine (as cited in Sudore et al., 2006) defined *health literacy* as the “degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (p. 770). One of Healthy People 2020's Health Communication and Health Information Objective is to increase health literacy of the population. Health literacy involves understanding insurance-related terms and comprehending the rules of health insurance. This is achievable through reading health

insurance scenarios. Consumers must understand their health insurance policies in order to communicate better with physicians, staff, and insurance companies about health decisions.

Research has been done showing a relationship between literacy and health outcomes (Baker, Parker, Williams, Clark, & Nurss, 1997; Howard, Sentell, & Gazmararian, 2006; Paasche-Orlow & Wolf, 2007). Research in health literacy also has been directed toward the education of patients so that they may understand diseases and how to maintain their health (Seligman et al., 2007; Tappe & Galer-Unti, 2001).

Statement of the Problem

Health literacy is a major problem in the United States (Evans, 2013). Senior citizens, who often have chronic diseases, are living longer, and utilize a large portion of healthcare services (Cutilli, 2007), are more inclined to have low health literacy skills (Boyle et al., 2013). Health literacy is related to cost (Baker et al., 1998; Weiss & Palmer, 2004). Studies have concluded that people with inadequate literacy/health literacy have higher hospital charges or higher risks of hospital admissions (Baker et al., 1998; Baker et al., 2002; Weiss & Palmer, 2004). Developing a better understanding of health literacy and Medicare beneficiaries' knowledge may have a positive impact on the containment of healthcare costs.

Adult Learning Theory

Many theorists are associated with Adult Learning; perhaps the most well-known is Knowles. Adult learning theory originates from Knowles' concept of andragogy (Merriam, 2001). Andragogy is the study of how adults learn (Baumgartner, Lee, Birden, & Flowers, 2003). Five tenets of andragogy include an adult learner having a deep sense of autonomy, rich life experiences, and needs that correlate with desired life roles; the adult learner is persistent in solving problems, and internally motivated to learn (Merriam, 2001).

Rudd (2007) suggested partnerships between the health industry and adult education industry are necessary to accomplish an increase in health literacy rates. Golbeck et al.'s (2005) recommendations include developing a better assessment tool to measure health literacy, establishing a set of health literacy competencies, and developing curricula to use in adult education programs. These are important recommendations, but adult education programs will not encompass all individuals who have low levels of literacy such as non-English speaking adults; therefore, other ways to educate should be undertaken.

Health Literacy/Literacy

Literacy is a major problem for the United States. An estimated 40 to 44 million people do not have basic English reading skills (Cutilli, 2005). It is ironic that this number and the number of uninsured are closely related. Another 50 million read but without good understanding (Cutilli, 2005). These statistics mean that about 90 million people in the United States do not possess critical skills to navigate the healthcare system or any other system (Boyle, 2013; Cutilli, 2005; Speros, 2005).

Health literacy is important to the consumer because it impacts health outcomes, health costs and quality of care. Health literacy has been measured using the Test of Functional Health Literacy in Adults (TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (Greenberg, 2001).

Paasche-Orlow and Wolf (2007) researched reading abilities as it relates to understanding patient education material to increase health outcomes. Baker et al. (2002) found a correlation between literacy and longer hospital stays with higher cost. Williams et al. (1995) found that the majority of patients waiting in the emergency room were marginally health literate. In a study of

Medicare patients, Baker et al. (1998) found adults with low literacy levels reported poorer health than those with higher literacy levels.

Understanding of healthcare information is a national problem affecting all age groups, not just Medicare beneficiaries. These problems have received nationwide attention. Rudd (2007) explained that numerous studies confirm healthcare information is written past a college education reading level; this stifles communication. Health literacy involves determining how capable one is to process healthcare information to reach desired health outcomes (Sudore et al., 2006). Health literacy involves not only reading and understanding physicians' instructions but also reading and understanding health insurance policies such as Medicare.

Medicare Recipients' Knowledge

Since the addition of Medicare Part C (also known as Medicare Advantage), many recipients have been confused about the services offered by Medicare (Dallek & Edwards, 2001; Hibbard et al., 1998; Kessler & DuGoff, 2005; Morgan et al., 2008). Hibbard et al. (1998) studied older people ages 65 to 80 and their knowledge and comprehension of Medicare and managed care. Important findings include that Medicare Advantage recipients learned about Medicare differently from Original Medicare recipients; 30% of the 1,673 respondents did not know anything about HMOs; Original Medicare recipients were better able to distinguish a HMO plan from a traditional plan; and Medicare Advantage recipients thought that HMO and the traditional Medicare plan were the same (Hibbard et al., 1998). Therefore, Hibbard et al.'s study supports the notion that health literacy has been a problem for Medicare recipients as it relates to health insurance for a number of years.

Kessler and DuGoff (2005) with help from the Medicare Rights Center and the Consumer Action Board concluded that the beneficiaries need guidance with Medicare options. The Consumer Action Board reported Medicare recipients did not understand their benefits. One reason for this confusion is the lack of knowledge about health insurance options. Recipients did not know basic differences between a managed care plan and a traditional plan. After the Balanced Budget Act of 1997, Medicare recipients had to choose between the original Medicare and Medicare Advantage (originally called Medicare + Choice). Medicare Advantage includes different health plans like health maintenance organizations and preferred provider plans that are managed by private organizations. Morgan et al. (2008) explains Medicare recipients find it difficult to choose a health plan. Dallek and Edwards (2001) explained that Medicare beneficiaries could not cope with sorting out the different plans that are included with Medicare Advantage. The Medicare handbook identifies five plans in Medicare Advantage: Preferred Provider Organization (PPO) Plan, HMO Plan, Private Fee-for Service Plan, Medical Savings Account Plan, and Special Needs Plan. These plans usually include Part A and B along with a prescription drug option; they may differ by cost, thus having different premiums, deductibles, co-payments, or coinsurance for services offered.

Study Variables

The independent (predictor) variable in this study was health literacy (defined as knowledge of insurance-related terminology and reading comprehension). The independent variable of health literacy was measured by the Health Literacy survey. The dependent variable in this study was knowledge of original Medicare and Medicare Advantage; the dependent variable was measured by the Medicare Knowledge survey.

Research Question

Research question: Is there a relationship between health literacy rates (knowledge of insurance-related terminology and reading comprehension) and knowledge of one's health insurance options among Medicare recipients in a southwest Georgia community?

- A. Null Hypothesis: There is no significant relationship between health literacy defined as insurance-related terminology and reading comprehension and knowledge of original Medicare and Medicare Advantage among Medicare recipients in a southwest Georgia community.
- B. Alternative Hypothesis: There is a significant positive relationship between health literacy defined as insurance-related terminology and reading comprehension and knowledge of original Medicare and Medicare Advantage among Medicare recipients in a southwest Georgia community.

Method

Approximately 100 senior citizens residing in supervised public housing in a Southwest Georgia community represented the target population of this study. The total number of participants was 66 Medicare recipients. Permission from Capella University Institutional Review Board and the local senior Property Managers of a Southwest Georgia community was granted, and the participants signed consent forms to participate in the study; lobby based and door-to-door surveys were collected.

The cross sectional quantitative surveys investigated the relationship between the independent variable of health literacy and the dependent variable knowledge of original Medicare and Medicare Advantage. Medicare knowledge and health literacy surveys, developed by Bann and McCormack RTI International (2005), were utilized for this study. A correlation study was used to examine the relationship between health literacy, and knowledge of original Medicare and Medicare Advantage. The Health Literacy and Medicare knowledge surveys were administered to senior citizens in the buildings where they live. Each survey had 11 questions. One survey measured health literacy with 7 questions about reading comprehension and 4 questions about terminology. The other survey measured knowledge of original Medicare and Medicare Advantage with five questions about original Medicare, and six questions about Medicare Advantage. All questions were either true/false, yes/no, or multiple-choice. Reliability and validity estimates were obtained by McCormack et al. (2009). According to McCormack et al. (2009), the alpha values for both surveys were .85; therefore, the reliability for these surveys was good. The Statistical Package for Social Science (SPSS) software was used to analyze the data collected from surveys.

Sixty-six residents volunteered to take the Medicare knowledge and Health Literacy surveys. Descriptive statistics were obtained on the demographic variables including age, education, and race. Some participants did not complete all questions. The typical respondent was African American, between the ages of 66-70, and had a high school diploma. Thirty-two (57%) of the respondents had high school diplomas; twenty-four (43%) had 2 years or more of college. The ages of the participants ranged from 60 to over 81, but the majority of participants (17, or 32%) were between 66 and 70 years old; 60-65 (28%); 71 to 75 (17%); 76-80 (8%); and 81 and above (15%).

Results

The Pearson Product Moment correlation coefficient was used to measure the association between health literacy and knowledge of Original Medicare (see Table 1). The correlation statistic r was .39 ($p < .001$) for the independent variable of health literacy (reading comprehension score). The correlation is significant at the 0.01 level.

Table 1. *Pearson Correlation Coefficient Between Health Literacy and Knowledge of Original Medicare*

| Score | <i>N</i> | <i>r</i> | <i>p</i> |
|-----------------------|----------|----------|----------|
| Terminology | 66 | -.039 | .758 |
| Reading Comprehension | 66 | .386* | .001 |

Note. *Correlation is significant at $p < .05$.

Seven multiple-choice or yes/no questions measured reading comprehension on the Health Literacy survey. Some participants left some questions blank.

1. Participants did not have any major problems answering Health Literacy Question 5 (regarding Medicare information being available in Spanish); 45 (68%) participants chose the correction answer, and 21 (39%) chose the wrong answer or left it blank.
2. Forty-seven (71%) participants chose the right answer for Health Literacy Question 6 (regarding losing a Medicare card), and 19 (29%) chose the wrong answer or left it blank.
3. Thirty-seven (56%) participants chose the right answer for Health Literacy Question 7 (regarding speaking to a Medicare representative), and 29 (44%) chose the wrong answer or left it blank.
4. Nineteen (28%) participants chose the right answer for Health Literacy Question 8 (regarding plans that cover vision services), and 47 (71%) chose the wrong answer or left it blank.
5. Twenty-four (36%) participants chose the right answer for Health Literacy Question 9 (regarding plans that cover routine physical exams), and 42 (64%) chose the wrong answer or left it blank.
6. Thirty (45%) participants chose the right answer for Health Literacy Question 10 (regarding plans that have the lowest monthly premium), and 36 (55%) chose the wrong answer or left it blank.
7. Twenty-four (36%) participants chose the right answer for Health Literacy Question 11 (regarding plans that cover prescription drugs), and 42 (64%) chose the wrong answer or left it blank.

Please note that of the seven reading comprehension questions, the majority of the participants answered three of the seven correctly. The correlation statistic r was $-.04$ ($p = .758$) for the independent variable, health literacy (terminology score). The correlation is not significant ($p = .758$). The null hypothesis was not rejected.

Four multiple-choice questions in the Health Literacy section of the survey measured terminology.

1. Thirty-eight (58%) participants chose the right answer for Health Literacy Question 1 (regarding the term appeal).
2. Forty-two (64%) participants chose the right answer for Health Literacy Question 2 (regarding the term assignment).
3. Forty-eight (73%) participants chose the right answer for Health Literacy Question 3 (regarding the term preventive care).
4. Thirty-five (53%) participants chose the right answer for Health Literacy Question 4 (regarding the term provider network).

The Pearson Product Moment correlation coefficient was used to measure the association between health literacy and knowledge of Medicare Advantage. The correlation statistic r was

.47 ($p < .001$) for the independent variable of health literacy (reading comprehension score). This correlation is significant at the 0.01 level. The correlation statistic r was .12 ($p = .359$) for the independent variable of health literacy (terminology score). This correlation is not significant. Therefore, the null hypothesis was not rejected. In summary, health literacy (reading comprehension score) was significant for knowledge of Medicare Advantage, but health literacy (terminology score) was not significant for knowledge of Medicare Advantage (see Table 2).

Table 2. *Pearson Correlation Coefficient Between Health Literacy and Knowledge of Medicare Advantage*

| Score | <i>N</i> | <i>r</i> | <i>p</i> |
|-----------------------|----------|----------|----------|
| Terminology | 66 | .115 | .359 |
| Reading Comprehension | 66 | .474* | .001 |

Note. *Correlation significant at $p < .05$.

Discussion

This research examined the relationship between health literacy rates (knowledge of insurance-related terminology and reading comprehension) and knowledge of health insurance options among Medicare recipients in a Southwest Georgia community. In summary, the reading comprehension score of health literacy has a significant positive relationship with knowledge of Original Medicare and Medicare Advantage but the terminology score of health literacy was not significant, and therefore it did not have a significant relationship with knowledge of Original Medicare or Medicare Advantage. Harris-Kojetin et al. (2001) posited that because Americans are living longer with chronic diseases, it is essential that older Americans with chronic diseases understand their health terminology and be able to read with comprehension. Apparently, knowledge of the terms is not an issue with the participants of this study but understanding the terms with application is an issue. This echoes Cutilli's (2005) finding that 50 million people read but without good understanding.

Medicare has existed since 1965, and therefore individuals may be more familiar with Medicare terminology. The complexity of Medicare has increased over time and now it is not enough to be familiar with the terminology but Medicare recipients need to apply their knowledge to the type of plan needed to fit their lifestyle.

Participants may not have been forthcoming about issues on the survey that they did not feel confident addressing. Perhaps due to trust issues and not knowing how this information would affect the individual's Medicare, respondents did not always answer all of the questions. The sample may not be representative of the general senior citizen population, and therefore lacks external validity and the ability to generalize to other populations.

The more one reads about Medicare, the more knowledgeable one becomes about making Medicare health insurance decisions. Hibbard et al. (1998) found that Original Medicare beneficiaries learned about Medicare from reading news articles. Medicare is not learned through formal educational channels. Area Council on Aging Center representatives raise awareness of Medicare issues by visiting senior functions. Information is on the Internet and in the Medicare handbook, but many senior citizens do not know how to use the computer and if their reading skills are poor, they will not benefit from the handbook. Therefore, Medicare beneficiaries may be familiar with terms and hear information from speakers, but reading is still the key to increasing their comprehension of Medicare policies and procedures.

Conclusion

Medicare recipients in this Southwest Georgia community are familiar with terms of Medicare. Health literacy in terms of reading comprehension score has a significant relationship with knowledge of Original Medicare and Medicare Advantage. This study supports the recommendation made earlier by Rudd (2007) that the health industry and adult education industry need to partner to increase health literacy rates. This would create a generation that is more prepared to make healthcare decisions as they get older and encounter Medicare concerns (e.g. what plan to enroll in) and problems (e.g. how and when to change plans).

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