

Low Health Literacy in the Elderly:
Analysis of a Nursing Practice Problem and Theory Application
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Abstract

Low health literacy is a problem that affects nearly 90% of the U.S. population's 50 million older adults. Poor health literacy contributes to mismanagement of chronic illness, difficulty accessing and understanding information and healthcare providers, and poor decision-making in the elderly. Major risk factors include socio-demographics, education, language, economics, minority status, and having multiple chronic illnesses. These problems are costly in finances, disability, and healthcare resources, and are reflected in lower usage of preventive services and higher rates of hospitalization, longer lengths of stay, and higher rates of disability. This problem has been addressed by many professional healthcare, aging, and medical/nursing entities. Low health literacy can be difficult for the healthcare provider to detect in an elderly patient. The Theory of Self-Efficacy by Bandura has been utilized to improve health literacy and health-maintenance behaviors among older adults. A nursing-based approach involves the application of performance modifiers, vicarious experiences, verbal persuasions, and physiologic feedback tailored to the older adult. Low health literacy continues to be a problem requiring a multi-faceted approach to improving communication, education, medical personnel shortages, and provider-patient relations.

Keywords: health literacy, numeracy, elderly, older adult, aged, Theory of Self-Efficacy (Bandura)

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Background

Low health literacy is a problem that affects over 90 million adults in the United States, negatively impacting the ability to seek, access, and use necessary health resources (the National Library of Medicine [NLM], 2016). Older adults (ages 65 and over) comprise nearly 15% (50 million) of the U.S. population, and this number is expected to reach 23.5% (98 million) by 2060; furthermore, over 60% of these individuals manage two or more chronic diseases (the Office of Disease Prevention and Health Promotion [ODPHP], 2017). According to the Office of Disease Prevention and Health Promotion (ODPHP, 2002), health literacy is the ability of a person to acquire, process, and comprehend basic health information, services, and instructions needed to maintain well-being and make health-related decisions. Limited health literacy in the elderly causes misunderstandings about how behaviors, environmental factors, and lifestyles contribute to disease and life-limiting disabilities (Cutilli, 2007; the U.S. Department of Health and Human Services [HHS], 2006). The problem of poor health literacy encompasses the application of numeracy, or math skills, to calculating medication dosages, reading and understanding labels for food and prescriptions, recording, reporting, and comprehending numbers associated with laboratory values, blood pressure, and blood glucose levels, and understanding health insurance coverage, costs, and medical bills (Martin, Kripalani, & Durapau, 2012; HHS, 2006).

People with low health literacy are less likely to have insurance coverage, and are more likely to report themselves as having poor health (Mullen, 2013; Skinner, 2015). They are more likely to be hospitalized and use emergency services at a higher rate, and use preventive services

less frequently, costing a higher overall percentage of U.S. health-related dollars spent (Skinner, 2015; HHS, 2006). It is imperative that healthcare providers recognize older adults with inadequate health literacy, approach the subject with sensitivity, and respond appropriately with tools and techniques to alleviate the burdens caused by this epidemic. There are over 3 million nurses in the U.S. healthcare workforce, comprising the greatest proportion of forefront health workers while delivering most of the direct patient care, managing hospitals and clinics, and educating patients and other health professionals (the Institute of Medicine [IOM], 2009). The burden of health illiteracy falls to nurses to mitigate and remedy; this gives nursing professionals a key advantage, and a great responsibility, to contend with an enormous and multi-faceted problem.

Problem Statement

Low functional health literacy in the elderly substantially contributes to poor medical management of comorbid conditions and polypharmacy, poor health-related critical thinking and decision-making skills, and difficulty accessing and understanding health-related information.

Significance

In the last 10 years, over 60% of U.S. adults ages 65 and older were assessed as having basic or below basic health literacy, and only 12% of older adults were assessed to be proficient in this vital skill (the Federal Interagency Forum on Aging-Related Statistics, 2008; HHS, 2010). Health literacy is different than reading literacy, and is a complex combination of reading competency, knowledge, comprehension, skills application, critical thinking, memory, and expectations of a patient (Cutilli, 2007; HHS, 2010). Low health literacy affects older adults' abilities to communicate with their healthcare providers, to maintain a healthy lifestyle, to

manage illnesses, and to know when and how to utilize health care resources and facilities (NLM, 2016).

Risk factors for low health literacy include being an older adult, being of an ethnic or racial minority, obtaining less than a high-school education, being low income, having an inability to read, write, or speak English, and having multiple chronic health conditions (Cutilli, 2007; Egbert & Nanna, 2009; Mullen, 2013). Cognitive changes that occur during aging affect the ability to utilize resources and technology, causing older adults further risk for poor outcomes and elder abuse (the Centers for Disease Control and Prevention [CDC], 2009). Elements that contribute to health literacy include education quality and level, reading and math skills, cognitive ability, prior knowledge, psychosocial influences and self-efficacy, language, socio-economics, lifestyle and beliefs, culture, and the communication skills of healthcare professionals (CDC, 2009; Goggins, Wallston, Mion, Cawthon, & Kripalani, 2016; Mullen, 2013; Nutbeam, 2000). These influences are grouped into modifiable or fixed attributes for tackling the problem (Nutbeam, 2000). Other obstacles to consider include advancements in technology and the ability to utilize digital resources, differences between the provider and the patient which do not foster trust, and the time constraints placed on the caregiver due to medical personnel shortages (Egbert & Nanna, 2009).

The ill effects of low health literacy are far-reaching. It contributes to low usage of preventive services and primary care visits, including vaccinations, annual examinations, injury prevention teaching, screenings for cancer, preventive bloodwork, tobacco or illicit substance use screening, elder abuse screening, and annual dental hygiene and oral examinations (CDC, 2009; ODPHP, 2017; HHS, 2006). Reduced preventive service usage contributes to a body of people

who are sicker at the initial intervention, who cost more in finances and provider time to remedy, and who become disabled sooner than their health-literate counterparts (HHS, 2006).

Health literacy affects decision-making to a large degree, which involves seeking help when sick or injured, determining what information to access and rely upon, making chronic illness management resolutions, and adjudicating end-of-life wishes with family members (CDC, 2009). Major life decisions depend on the health literacy of the individual, and the health provider's respect for patients' rights to autonomy by providing information to make best-outcome choices (CDC, 2009). Health-related information is complex and multi-faceted, and major life decisions are unique to every individual and situation; even those with proficient health literacy require the healthcare provider's finesse and consideration of the patient's condition when providing education (Gynn, 2013; ODPHP, 2002). Despite the availability of massive amounts of quality and accurate information via many sources, nine out of 10 adults in the United States continue to have trouble utilizing this data to make decisions (HHS, 2010).

Errors in medication management are another serious consequence of low health literacy. According to the National Council on Patient Information and Education (NCPIE, 2013), 37% of Americans ages 60 and over take five or more medications, a phenomenon known as polypharmacy. Medication errors result from a misunderstanding of provider instruction, misreading labels, cognitive difficulties in calculating dosages or the number of pills to reach a correct dose, and poor eyesight (Cutilli, 2007; Martin et al., 2012). Many medications require specific timing for administration in relationship to bedtime or meals, or to avoid interactions with other drugs; managing the timing of medications is a critical thinking and a planning skill that requires rationale comprehension, self-efficacy to manage, and knowing how to read time (Martin et al., 2012). According to Mullen (2013), the challenge has been so daunting that many

older adults have stopped taking their prescribed medications. According to the NCPIE (2013), up to 30% of prescriptions are never filled (some due to cost), and up to 60% of Americans do not take chronic-disease managing medications correctly (Cutilli, 2007). Davis et al. (2006) suggested using concise labels, easily recognizable warning pictures, and larger reading fonts to help older adults identify warning labels on prescriptions and to improve safe use. Cutilli (2007) recommended composing all patient education, including prescription drug advice and instructions, at a fifth-grade reading level to account for the reduced literacy of many U.S. adults. The NCPIE (2013) stated that low health literacy had significantly impacted unintentional nonadherence to medication regimens in older adults, and that in the past, many elderly adults have hidden their literacy problems from caregivers to preserve dignity and minimize shame (Egbert & Nanna, 2009; Goggins et al., 2016; HHS, 2006). As a result, nurses and other providers have often over-estimated older adults' health literacy abilities (Goggins et al., 2016).

Much of existing health-related print information continues to be provided at a tenth-grade reading level, and written information, such as consent forms, insurance documents, and end-of-life legal paperwork is verbose and complicated even for those with proficient health literacy in times of stress and illness (ODPHP, 2002). Although elderly adults will represent nearly 20% of the U.S. population by 2020, they have already accounted today for 50% of its annual healthcare costs (Skinner, 2015). Due to the magnitude of this problem, multiple agencies have made it a priority to address this issue, including the World Health Organization (WHO), the U.S. Department of Health and Human Services (HHS), the National Institute on Aging (NIA), the Centers for Disease Control and Prevention (CDC), the American Nurses Association (ANA), and the American Medical Association (AMA). For the last two publications of Healthy People, years 2010 and 2020, the goals addressing health literacy were

paramount and suggested an action plan based on two principles: the rights of all people to have unrestricted access to information needed to make health-related decisions, and the useful, intelligible delivery of health services and information which improve the quality of life, health, and a person's lifespan (HHS, 2010).

To help providers recognize those at risk, several tools have been developed to assess the health literacy of adult patients. These include the Test of Functional Health Literacy in Adults (TOFHLA), the Rapid Estimate of Adult Literacy in Medicine (REALM), and the Short Assessment of Health Literacy (SAHL), along with various shortened or Spanish versions of these tests (the Agency for Healthcare Research and Quality [AHRQ], 2016; Cutilli, 2007). The shortened form of REALM was the quickest test to give a patient, requiring 10 minutes to administer (Cutilli, 2007). While the education level was positively correlated with health literacy, a person's reading level was nearly three to four grade levels lower than the highest grade completed; therefore, healthcare providers should assess the educational level in patients, but keep this limitation in mind (Cutilli, 2007). Techniques that nurses can use are to create a shortened, simplified medication card to teach patients to record medication symptoms, questions, and appointments in a specific place, and to take these to each provider's appointment (Gynn, 2013). Nurses should use simplified language without acronyms or jargon, they should advocate for facilities to provide appropriately formatted education at a fifth-grade reading level, and they should practice effective teaching skills by not providing too much education at one time, which is difficult to absorb and process (Cutilli, 2007; Gynn, 2013).

Nutbeam (2000) created a health outcome model, the Model of Health Literacy, in response to previous failed attempts of educational programs to rectify the growing problem of health literacy, and further identified the subcategories of functional, interactive, and critical

health literacy. According to Nutbeam (2000), functional health literacy related to the knowledge of health risks, services, and an alliance with medical advice and teaching. Interactive health literacy related to provider communication and the health services environment which promoted the autonomous independent activities that demonstrated understanding, and reflected the social-behavioral relationship between provider and patient. Critical health literacy was defined as the actions or skills (usually by providers, but they can be individual) used to make social, political, and cultural changes that affected community health; other factors involved were economic and environmental. Combined, these standards of health literacy could be applied to the individual, the caregiver, and the general population, and each offered concepts, tools, and assessments which providers used to gauge, modify, and improve health literacy and intended outcomes.

Aims

Increasing health literacy is within the cognitive domain, which can be influenced by improving the self-efficacy of the aged learner. There are multiple domains of teaching and self-efficacy promotion that nurses and other health professionals can employ in the process of fostering self-efficacy for improved health literacy (Resnick, 2014). Colbert, Sereika, and Erlen (2013) and Nokes et al. (2012) showed that when caregivers utilized self-efficacy principles, patient learners from vulnerable populations, including the elderly, improved their self-care, medication management, chronic disease maintenance, and appointment-making and appointment-keeping. By utilizing the Theory of Self-Efficacy (TSE) by Bandura, nurses can assess for obstacles to learning, which may include discouraging failures in the past, to determine the best approach to individualized teaching (McEwan & Wills, 2014; Resnick, 2014). Communication which is empathetic, professional, and encouraging, from a trusted source, is

vital to increasing self-efficacy for learning and practicing change based in realms of health (Resnick, 2014).

Theory

Resnick (2014) described Bandura's TSE as a cognitive change agent which affects the participants' expectations and thus, actions and results based on four components, or theoretical propositions. These components are the person's past self-performances in a specific domain, visualizing others doing a behavior or thinking vicariously ("how would it look if I performed that action?"), receiving verbal persuasion from others, and physiologic conditioning and feedback received while performing a new behavior (Bandura, 1977). The basic concepts of this middle-range theory are self-efficacy expectations, and self-efficacy outcomes (Bandura, 1977; Resnick, 2014). Self-efficacy is the interpersonal belief that a person has in his or her ability to learn, change, grow, practice new behaviors or modify old ones, and make choices to influence health positively (Resnick, 2014). Through self-reflection and evaluation, motivation and self-confidence can be built and fostered, which affects learning capabilities and efforts, improving functional actions for disease management. The usage of this theory is direct and hands-on, and through literature has been shown to be useful in a variety of situations. Oberg, Bradley, Allen, and McCrory (2011) utilized the TSE to improve diabetes self-care among adults and older adults, and taught them in a 12-hour divided course about macronutrients, cooking guidelines for diabetic diets, and diabetes care of the feet, and saw results in improved HbA1c, food choices, activity levels, and overall self-management of type 2 diabetes. Utilizing a collaborative approach, Börsbo, Gerdle, and Peolsson (2010) reduced disability and perceived pain by acknowledging the psychological impact of self-efficacy on life quality, and reduced pain, depression levels, anxiety, and catastrophizing (the irrational belief that something is worse than

it is) to improve mental states in adults. The TSE has been useful in increasing exercise and activity levels among older adults and through its use, providers promoted various pain control therapies to increase participation in strengthening exercises and rehabilitation while reducing older adults' fears of falling (Chase, 2011; Grim, Hertz, & Petosa, 2011). It was shown that increased self-efficacy, within the realm of older-adult activity performance, improved rates of carrying out prescribed activity levels, and improved adherence to new, more active lifestyles. By increasing patient's health literacy about specific topics through improved self-efficacy to learn and carry out prescribed actions, better health behaviors led to reduced morbidity and disability. Bandura (1977) discovered that increased self-efficacy promoted learning and productivity among patients, leading to overall improved health function. The implication for nurses is that to promote self-efficacy among older adults, independence and confidence must be fostered instead of acceptance and endorsement of dependent behaviors and negativity (McEwan & Wills, 2014).

Information useful to the provider helping the older adult achieve increased health literacy includes knowledge that setting too high of a goal can negatively impact his or her performance when results are not seen quickly enough. A false sense of over self-confidence can cause people to put forth less than necessary effort. How people view their abilities, the difficulty of a prescribed action, unique circumstances, and past and future benefits and detriments of actions impact current self-efficacy to learn and use learning to make changes (Jones, Harris, Waller, & Coggins, 2005; Resnick, 2014; Vancouver, Thompson, & Williams, 2001). Nurses can use creativity while presenting information, while checking the pace and timing of the teaching to minimize frustration or failure on the patient's part (McEwan & Wills, 2014). According to McEwan and Wills (2014), nurses should encourage patients to seek out

information with the resources available to them at home or by public libraries, and promote responsibility for self-learning, which in turn builds self-confidence and more self-efficacy to learn. This has been shown to increase health-seeking behaviors and reduce errors in health maintenance.

Theory Application

In older adults, enactive attainment has been shown to be the most effective approach to improving self-efficacy, which is defined as the older adult repeating a behavior to improve self-efficacy and self-belief in the ability to perform the activity better and more often (Estabrooks, Fox, Doerksen, Bradshaw, & King, 2005). This has been shown to be effective in motivating older adults to increase physical activity and rehabilitation exercises. One of the best courses of action to improve self-efficacy for an older patient is to practice a new behavior with him or her, which will increase the likelihood of a repeated action and increased confidence. A function-focused approach for older adults has four steps, and includes assessment and modification of environment, education of the older adult and staff providing education, care, and support, establishment of mutual goals, and reinforcement of positive behaviors, with resetting goals as needed for a realistic outcome (Resnick, 2014). With increased access to the World Wide Web from home, older adults are proving capable of learning how to utilize computers and technology to access health information. Nurses have employed the TSE to improve computer-use-related anxiety, to improve technology utilization and self-confidence in usage, and to increase self-efficacy in learning via computers and the Internet for adults aged 65 and older (Chu & Mastel-Smith, 2010). When education was structured and spread out to allow for absorption time, patience was practiced, early mistakes were identified and corrected until performance maximized, supplemental exercises and encouragement were provided, live modeling with

instructors was implemented, and ample time for follow-up questions was allowed, the older adults in the study reported less apprehension and practiced motivated health-seeking behaviors and self-learning. The participants improved their health literacy and health-related outcomes resulting from focused, long-term nursing intervention. Persuasive suggestions of ability, exhortation and authentic praise, and social interaction between participants improved questions from subjects and rates of return demonstration with increased skill and mastery (Chu & Mastel-Smith, 2010). Nokes et al. (2012) found that self-efficacy was a predictor for adherence to medication prescriptions among patients with human immunodeficiency virus (HIV), which is a concept that can be applied to the older adult and adherence to prescription regimens for chronic disease management.

To apply the TSE to health literacy in older adults, the health care provider or nurse should build a rapport with the older adult and set small, attainable, mutual goals (Resnick, 2014). To foster vicarious experiences among older adults, a multitude of materials can be utilized, including video, computers, and testimonials and anecdotal stories from others of similar sociocultural or ethnic backgrounds to the older adult, which improves relatability (Jones et al., 2005; Resnick, 2014). Completely new approaches and solutions should be suggested, which has a greater impact than revitalized exposures and modifications of past attempts (Resnick, 2014). Persuasion meant to intensify the patient's verbalized attempts to change, encouragement from credible sources, and counseling are the verbal tools providers and nurses should use. To address physiologic feedback, the nurse can utilize cold or heat therapy, analgesic pharmaceuticals as prescribed, physical therapy, biofeedback, massage, and promote the older adults' use of personal cultural or spiritual practices when appropriate and safe (Bandura, 1977; Resnick, 2014). The nurse should be mindful of the older adult's physiology,

reduced sensitivity to stimuli which risks burns or hypothermia, reduced organ function in aging, and mobility limitations to reduce harm (Lewis, Dirksen, Heitkemper, & Bucher, 2014).

Summary and Conclusion

Low health literacy is a serious problem that affects most older adults. The impact is extensive and hastens the loss of independent function; this is reflected in higher rates of hospitalization, longer hospital stays, more frequent visits to healthcare providers, and significant costs for the older adult. In addressing and remedying low health literacy, the goals are to refine the creation and dissemination of health-related information into easily digestible forms, to improve provider communication and patient-caregiver relationships, to create more cost-effective education and health management processes, to promote equity and justice in healthcare delivery, and to improve safety and health outcomes for older adults. Employing the Theory of Self-Efficacy to remedy this problem for older adults has proven effective in learning domains for the maintenance of diabetes, adherence to rehabilitation and physical activity prescriptions, and improvements in and self-confidence for technology usage to find and utilize health information to self-educate. This has required a long-term approach to teaching, with patience and attentive care by nursing staff who are dedicated to the job of fostering self-efficacy and self-reliance. The solution will involve all healthcare providers, and further changes need to be made to the formats and delivery of educational materials, in improvements in patient-provider communication and relationships, and by bolstering the healthcare provider shortage crisis in the United States.

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