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Integrating Health Literacy And Ethnogeriatric Training For Anesthesia Providers To Improve Perioperative Care Of The Geriatric Patient

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INTEGRATING HEALTH LITERACY AND ETHNOGERIATRIC TRAINING FOR ANESTHESIA PROVIDERS
TO IMPROVE PERIOPERATIVE CARE OF THE GERIATRIC PATIENT

Submitted to the Faculty
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

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This DNP project is accepted in partial fulfillment of the requirements for the degree
Doctor of Nursing Practice.

Lois A. Sadler

Lois Sadler, PhD, PNP-BC, FAAN

April 13, 2018

Date

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A handwritten signature in black ink, appearing to read 'Autumn D. Spence', written over a light gray rectangular background.

Signed: _____

Autumn D. Spence, MSN, ANP-BC

April 13, 2018

Integrating Health Literacy and Ethnogeriatric Training for Anesthesia Providers to Improve
Perioperative Care of the Geriatric Patient

By

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Doctor of Nursing Practice

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AHRQ Health Literacy Universal Precaution Toolkit, Second Edition

Brega, A., Barnard, J., Mabach, N., Weiss, B., DeWalt, D., Brach, C., . . . West, D. (2015). *Health literacy universal precaution toolkit* (2nd ed.). Retrieved from <http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthlittoolkit2.html>

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Stanford Geriatric Education Center Curriculum in Ethnogeriatrics, Second Edition

Yeon, K., Choi, E., Enslein, J., Hagan, J., Hendrix, L., Skemp-Kelley, L., . . . Yeo, G. (2001). *Curriculum in ethnogeriatrics: Second edition*. Retrieved from <https://web.stanford.edu/group/ethnoger/index.html>

“Each of the five modules is designed so that it can be used individually if needed, although the authors highly recommend that all the modules be included in health care training programs in geriatrics if at all possible.”

“It is important for faculty who use the modules to adapt them to make them as useful as possible for your own students and situations. We hope you will add to, cut from, combine with, or generally reconstruct the modules so that they fit your own needs.”

Abstract

The healthcare system requires consumers to be active participants in their care by making decisions in conjunction with their provider; managing complex medication regimens and scheduling appropriate medical visits in a timely fashion. Health literacy for racial and ethnic minority elders, is an often ignored national problem that must be addressed through research-driven initiatives that are tied to metrics that measure improvement across providers, health plans, and healthcare organizations. To address this problem, the authors implemented an adaptation of two evidenced-based educational interventions into a practice improvement project. The intervention format included a self-guided training on health literacy and ethnogeriatrics for anesthesia providers in clinical practice that was initially reviewed and evaluated by an expert panel. A pilot training was conducted with a convenience sample of 26 anesthesia providers who care for geriatric patients from ethnic and racial minority backgrounds. The educational intervention resulted in an increase in knowledge-based test scores, and an increase in a health literacy oriented attitude. However, anesthesia providers were less likely to use the teach-back or show-me method with low literate patients. Recommendations for future work include revisions to the education intervention and testing with a larger sample, providing an in-person training course, and disbursing the training to other clinicians.

Keywords: health literacy, ethnogeriatrics, anesthesia, training

Introduction

The World Health Organization (2016), defines health literacy as “the cognitive and social skills which that influence the motivation and ability of individuals to gain access to, understand and use information in ways which that promote and maintain good health” (para. 1). In 2003, the National Assessment of Adult Literacy (NAAL) survey, using an individual’s ability to calculate an employee’s share of annual health insurance cost as a proxy for gauging health literacy proficiency, found that only 3% of the nation’s geriatric population (65 and older) could use a table to calculate an employee’s share of annual health insurance cost, which was indicative of proficient health literacy skills (U.S. Department of Education, 2003). Low health literacy (LHL) has been linked to health care disparities, poor health outcomes, increased misuse of health services, and health care safety issues such as medication errors (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010).

The health literacy deficiency costs the United States economy an estimated \$106 billion annually through hospital re-admissions, unnecessary emergency room visits, fragmented care due to limited access, and prolonged hospital stays (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). The demand to address LHL and its burden on the health care system has been widely acknowledged by multiple organizations including the Joint Commission, the Agency for Healthcare Research and Quality, the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention, and the American Medical Association (American Geriatrics Society Ethnogeriatric Committee, 2016; Institute of Medicine, 2004). In response to these concerns the following practice improvement project was developed specifically targeted for anesthesia providers

(Anesthesiologist, Certified Registered Nurse Anesthetist, Certified Anesthesia Assistants) in an acute care setting.

Demographic Transformation

Over the last five decades the United States has undergone a shift in the distribution of the population. In 1960, people 65 and older made up 9 percent of the population, and that group has now increased to 14 percent or 46 million Americans (Mather, Jacobsen, & Pollard, 2015). This trend is partially related to the aging of the baby-boom generation, those born between 1946-1964 (Colby & Ortman, 2014). This population will grow to an estimated 70 million people by 2030 and 83.7 million by 2050 (Ethnogeriatrics-Committee, 2016). Population projections reveal that the 85 and older group will grow from 14 percent to approximately 21 percent by 2050 (Colby & Ortman, 2014).

The aging population is also becoming more ethnically and racially diverse. The United States population is projected to rise from 319 million to 417 million people by 2060, when nearly one in five people is expected to be foreign-born (Colby & Ortman, 2014). Although the diversity will be concentrated in the youngest age groups, the country will witness an increase in three subgroups. Asian, Native Hawaiian and other Pacific Islander populations will have significant growth in their older population (Ethnogeriatrics-Committee, 2016). The changes in size, age structure, and ethnicity of the U.S. population will present some unique challenges for policy makers, and healthcare institutions. The accelerated growth of these groups of culturally diverse elders necessitates action by healthcare organizations to attend to the unique needs of this expanding population. Geriatric adults are often faced with age-related cognitive decline, impaired sensorium, multiple comorbidities, complex medical regimens, and limited health literacy (American Geriatrics Society Ethnogeriatric Committee, 2016; Evans, Bereckneyei, Yeo,

Hikoyeda, Tzuang, & Braddock, 2014). Limited understanding often affects how the geriatric patient processes health-related information, navigates the complex healthcare environment and makes critical health care decisions. All of these factors place elders at risk for inadequate functional understanding of basic health concepts and medical vocabulary (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010).

Cultural Safety Within Delivery of Care

The restricted capabilities of geriatric health care consumers with LHL can also be further compounded by their culture. The American Geriatrics Society (2016), envisions that all clinicians, regardless of practice setting, will be self-aware of biases and perceptions, have interpersonal skills that transcend these barriers, and can effectively deliver care to patients from cultures other than their own. Acknowledgement and awareness by the health care provider is the first step to delivering culturally competent care to ethnically diverse elders. “Culture is defined as integrated beliefs, attitudes and behaviors shared among a group and includes a person’s communication style, thoughts, values, personal interactions, and practices” (Betancourt, Green, & Carrillo, 2002, p. 1). An individual’s perspective on health status, medical care, diagnosis, treatment adherence, and interactions with the Western health care system can be influenced by multiple factors including culture, gender, age, spirituality, and socioeconomic status. An individual’s native language also plays an integral role in health-related communication by influencing how the patient expresses health concerns. Language barriers and differences in underlying cultural or social concepts can result in misinterpretations in the understanding of health care advice and/or directions being offered by the health care provider. For example, pain is a universal human experience, however; the perception, expression and management of pain is often culturally specific (Free, 2002).

Since health literacy is comprised of cultural and conceptual knowledge, oral, written and numerical skills in which proficiency must be obtained for successful health outcomes (Baker, 2006), individuals must have the capacity to act on health information, decode, interpret and assimilate health messages following every clinical encounter. Elders with LHL from ethnic and racial minority communities may be confused or misinformed about health care services, the correct use of medications, disease prevention practices and treatment plans (Kreps & Sparks, 2008).

Health literacy and culture are both addressed in the Culturally and Linguistically Appropriate Services (CLAS) standards (See Appendix A). These guidelines support the implementation of high-quality health care and health equity for diverse communities. With these guidelines providers have the ability to create a culturally safe environment by being responsive to patient needs, preferences, perspectives, and by acquiring knowledge of cultures and skills to achieve cultural competency (Institute of Medicine, 2004). Providers who utilize cross-cultural communication skills and familiarize themselves with diverse cultural practices gain awareness of patients' fundamental health-related values and aide in bridging cultural differences that may lead to miscommunication. Providers can also use this approach when assessing a patient's problem-solving strategy, before developing a treatment plan or assessing treatment adherence. This tailored approach is an intervention that addresses the literacy gap and focuses on health disparity reduction.

Vulnerable Elders and Ethnogeriatrics

The Centers for Disease Control and Prevention (CDC) (2014), defines vulnerable populations as “people who are economically disadvantaged, who belong to racial and ethnic minority groups, who are geriatric, and individuals who are uninsured” (Centers for Disease

Control and Prevention, 2014, para. 1). The geriatric population is vulnerable due to their increased risk of health deterioration, cognitive decline, limited access to care, and a need for health care that exceeds the average. This health disparity often results in poor health outcomes and increased mortality.

To make an impact on healthcare disparities the Stanford Geriatric Education Center (SGEC) embarked on a mission to educate health care professionals about health and social issues of the geriatric population (Stanford Geriatric Education Center, 2017). They focused on the needs of ethnic minority elders with hopes of improving their quality of health care as well as their quality of life. SGEC created the term ethnogeriatrics to describe culturally competent care for ethnic and racially diverse older adults (Evans et al., 2014). This broad term encompasses health disparities, LHL, quality of care for ethnically diverse elders, and patient/provider communications (Evans et al., 2014). In 2007, the SGEC developed a health literacy and ethnogeriatric curriculum in an attempt to reduce deficiencies in health care professionals education programs (Evans et al., 2014). In a 2014 study, researchers administered the training to 34 participants from diverse healthcare backgrounds including medicine, nursing, social work and pharmacy to assess the impact of health literacy and ethnogeriatric training (Evans et al., 2014). There was a positive impact on the participants' knowledge, skills, and attitudes about health literacy education; and participants reported the information gained was useful, with 57% of the content being new to them (Evans et al., 2014). Patient-provider communication is central to health literate care and the course-identified ways the provider could elicit information from elders of any ethnic background to improve communication.

Health Literacy

Low health literacy can be addressed at the individual or systems level. Health care organizations looking to create a health literate culture can adopt the Health Literate Care Model (HLCM) (Koh, Brach, Harris, & Parchman, 2013). The HLCM is a system-based approach to enhancing patient engagement in prevention, decision-making and self-management activities (Koh et al., 2013). The HLCM conceptual framework applies the universal precaution approach and treating all patients as if they are at risk for experiencing LHL. This allows the provider to acknowledge the difficulty in identifying who is at risk, understand that proficient individuals may still be at risk, be aware that health literacy can be situational and affected by external factors; and acknowledge that everyone can benefit from clear, actionable information (Koh et al., 2013). The HLCM employs strategies for the health literate organization to increase productive interactions between patients and providers. A productive interaction involves the patient and provider aligning their understanding of medical terms, health problems, prevention and treatment options, care plans and outcome goals (Koh et al., 2013). Establishing a health literacy program, assessing how well patients' health literacy needs are being met, and soliciting patient feedback are the steps to foster patient engagement and deliver high quality care. Strategies to accomplish these goals are linked to specific tools in the Health Literacy Universal Precaution Tool Kit, 2nd edition (Brega et al., 2015).

The Health Literacy Universal Precautions Toolkit was developed and tested by the University of North Carolina at Chapel Hill (Brega et al., 2015). Implementation at the clinical practice level is focused on simplifying communication and confirming comprehension of the patient to minimize the risk of miscommunication. The toolkit was designed to assess a health care practice and foster the initiation of changes that would affect patients of all literacy levels

(Brega et al., 2015). Multidisciplinary staff at all levels in primary care settings are the intended audience for the toolkit, however, some tools are applicable to other settings (Brega et al., 2015). Evidence-based guidelines presented in 21 tools within the toolkit assist individual clinicians and health care organizations in reducing the complexity of health care, improving patient understanding of health information and creating an environment that is supportive of patients from all literacy levels (Brega et al., 2015).

Health Literacy in the Perioperative Setting

The role that health literacy plays among surgical patients is not well studied although there is some literature describing the importance of perioperative patients' understanding of health information being provided and having sufficient skills to participate in clinical decision making. In one study, researchers observed health literacy and post-operative outcomes in 1,239 patients undergoing abdominal surgery using the Brief Health Literacy Screen (BHLS) (Wright et al., 2017). Researchers found that low BHLS scores were associated with increasing age, lower level of education, higher American Society of Anesthesiologist (ASA) classification status, procedure type, longer intensive care unit length of stay (LOS), and hospital LOS (Wright et al., 2017). Although the study was specific to major abdominal surgical patients, the authors were able to recommend that elderly surgical patients who exhibit LHL require additional time and resources for discharge teaching, establishing home health support, and managing anxiety. Identifying elderly patients with LHL pre-operatively would provide an opportunity for efficient and early discharge planning.

For example, during the perioperative process patients should be given patient friendly medication instruction and anesthesia providers must consider religious and cultural considerations like fasting practices. If an insulin dependent diabetic Muslim patient is having

surgery during the holy month of Ramadan the anesthesiologist needs to be aware of the implications this extended fast will have on the patient prior to surgery. This patient would need to be instructed to monitor blood sugar more often throughout the day, titrate insulin dose, or even be scheduled for surgery at a more appropriate time, when religious dietary restrictions would not be as much of a factor. Lack of proper preoperative instructions could result in the patient taking their regular insulin dose and resulting in hypoglycemia prior to anesthesia administration. Anesthesia providers can also employ practical strategies such as slow down, use eye contact and repeat key points during patient interactions.

Patients must be able to understand perioperative instructions, general consent forms, prescription labels, and appointment schedules. These essential elements of perioperative care can be addressed through patient education delivered during multiple interactions that take place prior to surgery as described in the Perioperative Surgical Home Model (Kain et al., 2014). The “Perioperative Surgical Home Model is a patient-centric, team-based model of care created by leaders within the American Society of Anesthesiologist to help meet the demands of a rapidly approaching health care paradigm that will emphasize value, patient satisfaction and reduced cost” (American Society of Anesthesiologist, 2017).

Project Design

This practice improvement project is comprised of an adapted training course aimed at increasing anesthesia providers’ health literacy knowledge to improve their ability to identify and communicate with patients that are elderly, ethnic minorities, and LHL. The project incorporates an evidence-based curriculum from the Stanford Geriatric Education Center (SGEC) and material from the Agency for Healthcare Research and Quality (AHRQ). Training modules developed by SGEC were accessible to the public at no cost with the goal of supporting

dissemination of the training. The SGEC ask that any user complete their evaluation survey to track dissemination of the curriculum. Training modules were adapted and incorporated into a PowerPoint presentation with a pre-recorded voice-over. The run-time of the training course is approximately 45-minutes, and an additional 15-minutes is allotted for completion of the pre-survey, post-survey and evaluation. Items for the electronic health literacy toolkit were chosen based on their usefulness in an acute care setting. Appendix B outlines the key concepts covered in the health literacy and ethnogeriatric training course. The case study consists of a fictional patient case created by the researcher. The curriculum was revised through an expert panel review process (Lazenby, Dixon, Coviello, & McCorkle, 2014). The consultation of 4 expert clinicians provided ratings regarding the content of the training and the evaluation measures with respect to importance and relevance (See Table 1). The experts were identified by the number of years in clinical practice and their past work with geriatric perioperative patients. Revisions were made to the training course based on comments and recommendations of the clinical experts. For example detailed information about 2 health literacy assessment tools was removed. Comments included “great concise information” and “the REALM-S and SAHLSA have no utility in everyday use”.

Intervention

The practice improvement project was submitted to the Yale University Human Subjects Committee and was not deemed as research. The health literacy and ethnogeriatric educational intervention took place at a physician led practice that provides acute care management and staffing solutions across the United States. Patients are cared for across the acute care continuum with practice lines in emergency medicine, urgent care, anesthesiology, hospital medicine, acute psychiatry, telehealth medicine and post-acute care. All employees have access to voluntary

learning modules inclusive of clinical and professional development topics. Modules are delivered by pre-recorded or live webinars using the Webex and Zoom platforms. There are over 100 modules in the company's learning catalog; however, the organization is lacking educational modules on health literacy or ethnogeriatrics.

During informal surveying of the current anesthesia providers prior to the practice improvement project implementation, they reported medication adherence, correct medication reporting by patients, and patients navigating the perioperative process as processes that would potentially benefit from clinician training in adequate health literacy. The anesthesia team supported acquiring the necessary health literacy tools to assist them with patient interactions. These interactions are limited in time and need to be meaningful. Through this training intervention the anesthesia team eventually expects to see an improvement in operational efficiencies, a decrease in resource utilization, and a decrease in complications during the perioperative period.

A pre-post study design for a single group was used to evaluate the pilot training program. The pre-test consisted of a 28-item survey that assessed knowledge, skills and attitudes of the anesthesia provider. Example questions are displayed in Appendix C. The post-test consisted of the same 28 items and additional evaluation questions to assess the feasibility and practicality of the training (See Table 5). The training course and surveys were disbursed via email and the anesthesia providers were able to complete it on their own time. Surveys were created using the Survey Monkey platform with the anonymity option activated.

Eligibility Criteria

The eligibility criteria for participants in this pilot practice improvement project were (a) clinicians formally trained in anesthesia, (b) currently practicing anesthesia in a hospital-based

setting, (c) held the title of Anesthesiologist, Certified Registered Nurse Anesthetist (CRNA), or Certified Anesthesia Assistant. See Table 2 for characteristics of participants.

Evaluation Criteria

The participants received a pre- and post-survey evaluating their knowledge of health literacy and ethnogeriatrics; their current skill set to identify LHL patients, and their attitudes toward working with LHL patients prior to the intervention (educational session) and following the intervention. Participants' satisfaction with the program and any suggestions to improve or change the program, were assessed on the post-survey questionnaire administered after the intervention.

Results

Of the 40 anesthesia providers who were offered participation in the training, 26 chose to participate (65%). All 26 participants completed pre-survey, post-survey, and training. Demographic data indicated that participating anesthesia providers' age, gender, work experience and race varied (Table 2).

Knowledge-Based Assessment

Results of the health literacy and ethnogeriatric knowledge-based assessment indicated that anesthesia providers' average test scores increased after participation in the health literacy and ethnogeriatric training course. Based on a paired *t*-test analysis, there was a significant difference in anesthesia providers' pretest knowledge-based test scores (mean = 12.54, SD = 2.18) and anesthesia providers' posttest knowledge-based test scores (mean = 14.65, SD = 1.72, t [25] = -3.42, $p < .05$).

Attitude-Based Assessment

Results of the attitude-based assessment are reported in Table 3. Anesthesia providers' attitudes toward working with geriatric patients with low health literacy were assessed through use of a 5-point Likert scale. Anesthesia providers were asked about their aptitude to identify, communicate with, and provide literacy related resources to their patients with LHL. Results indicated that anesthesia providers felt more confident and comfortable working with geriatric patients with LHL after participating in the training course and that the changes in their attitudes were statistically significant (See Table 3).

Skills-Based Assessment

Results of the skill-based assessment are reported in Table 4. Anesthesia providers' likelihood of using specific skills when interacting with geriatric patients with low health literacy was assessed through use of a 5-point Likert scale. Anesthesia providers were asked about their likelihood of using plain language, giving limited information, speaking slowly, creating a shame free environment, teach back and show-me techniques with LHL patients. Results indicated that anesthesia providers frequently create a shame free environment, however, they were less inclined to use the teach back and show-me techniques after participating in the training course most likely since they did not yet have the opportunity to employ these new techniques.

Course Evaluation

Results from the course evaluation questions are reported in Table 5. Anesthesia providers were asked to evaluate the course using a 5-point Likert scale. Of the anesthesia providers surveyed, all agreed or strongly agreed that the course provided helpful strategies to identify and implement methods to improve communication with geriatric patients with LHL.

Discussion and Implications for Future Interventions

Results from this pilot practice improvement project indicated that providing anesthesia providers with training appeared to enhance their broad knowledge base regarding health literacy and ethnogeriatrics. Creating this foundation of knowledge and clinical application, suggested that providers in the sample displayed improved knowledge, skills and awareness for future patient interactions. In addition to the training, supplying clinicians with an evidence-based toolkit provides them with strategies to guide interactions with culturally diverse older patients with low health literacy that are undergoing surgery. The results of the pilot testing revealed that anesthesia providers in the sample were able to demonstrate significant increases in average test scores on health literacy and ethnogeriatrics after participation in a 45-minute training course. Although further testing and intervention refinement is indicated, it appears that engaging anesthesia providers in a training model may provide direct benefits by increasing health literacy knowledge. Long-term effects of the training could include positive health outcomes, increased patient satisfaction, increased perioperative instruction adherence, and improved patient-provider communication, and these are areas for further testing and evaluation.

This training platform reflects a hybrid of two fields and embraces tenets in cultural competence and health literacy (Lie, Carter-Pokras, Braun, & Coleman, 2012) and may help health care providers to examine deficiencies in their understanding of culture, beliefs, use of jargon, assumptions and strategies. This cross disciplinary approach holds great promise for improving patient-centered outcomes, however this will require longer term follow-up of learners from training to practice (Lie et al., 2012).

This project had several strengths and limitations. The strength of the practice improvement project was the evidence-based educational programs and tool kits that were

applied and adapted to the perioperative setting (Brega et al., 2015; Evans et al., 2014) The small number of anesthesia providers who participated in the pilot training and evaluation was a limitation, however given the busy schedules and competing demands of busy clinicians, the findings did support the feasibility and acceptability of the program. For future project implementation, we recommend options, such as giving the training in person or offering continuing education credit to increase participation. The course will be reviewed and submitted for Continuing Medical Education (CME) accreditation. The course will then be offered to all service lines in the healthcare organization.

Conclusion

Low health literacy in multicultural geriatric populations has been shown to have negative consequences on patients' health outcomes and increased overall health care cost (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, n.d.). Anesthesia providers may lack knowledge about health literacy and ethnogeriatric, strategies to improve communication with patients with LHL, and engagement in health literacy sensitive practices. Educating anesthesia providers about health literacy and ethnogeriatrics approaches to more effectively communicate with this population may serve to improve their ability to provide perioperative care that is culturally safe and helps to address the health literacy gap.

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Table 1

Expert Panel Results

Category & Items	Expert Rater Form					
	Importance		Relevance (Please choose one)			
	Yes	No	Not Relevant	Somewhat Relevant	Moderately Relevant	Very Relevant
Webinar						
Health literacy background	75%	0%	0%	0%	0%	75%
Health literacy definition	100%	0%	0%	0%	25%	75%
Health literacy myths	100%	0%	0%	0%	25%	75%
Health literacy facts	100%	0%	0%	0%	25%	75%
Health literacy statistics	100%	0%	0%	0%	50%	50%
Consequences of low health literacy	100%	0%	0%	0%	25%	75%
Identifying patients with low health literacy	100%	0%	0%	0%	0%	100%
Screening tools to identify patients with low health literacy	100%	0%	0%	0%	25%	75%
Communicating with patients with low health literacy	75%	0%	0%	0%	0%	75%
Creating a shame free environment	100%	0%	0%	0%	0%	100%
Ask Me Three	75%	25%	0%	0%	75%	25%
Speak slowly	100%	0%	0%	0%	0%	100%
Limiting the amount of information and repeating information	100%	0%	0%	0%	50%	50%
Plain, non-medical language	100%	0%	0%	0%	50%	50%
Teach-back method	100%	0%	0%	25%	0%	75%
Ethnogeriatric Background	75%	0%	0%	0%	25%	50%
Ethnogeriatric definition	100%	0%	0%	0%	25%	75%
Ethnogeriatric terms	100%	0%	0%	0%	25%	75%
Statistics	100%	0%	0%	25%	50%	25%
Principles in geriatric care	100%	0%	0%	0%	0%	100%
Impact of cultural factors on geriatric care	100%	0%	0%	0%	25%	75%
Cultural competence in geriatric care	75%	0%	0%	0%	0%	75%
Systems level	100%	0%	0%	0%	25%	75%

Provider level	100%	0%	0%	0%	0%	100%
Effective geriatric care and skills	75%	0%	0%	0%	0%	75%
Ethnogeriatric Assessment	100%	0%	0%	0%	25%	75%
Considerations for health information	100%	0%	0%	0%	0%	100%
Strategies to improve health literacy of the ethnogeriatric patient						
Health Literacy Toolkit	100%	0%	0%	0%	0%	100%
Tool 3- Raise Awareness	75%	0%	0%	0%	0%	75%
Tool 4- Communicate Clearly	100%	0%	0%	0%	25%	75%
Tool 5- Teach-back Method	100%	0%	0%	25%	25%	50%
Tool 10- Culture, Customs, and Beliefs	100%	0%	0%	0%	50%	50%
REALM-SF	50%	50%	25%	25%	0%	50%
SAHSLA-50	50%	50%	25%	25%	0%	50%
Case Study						
Case Study	100%	0%	0%	0%	0%	75%

Table 2

Characteristics of Anesthesia Providers (N = 26)

Characteristics	n(%)
Gender	
Female	11 (42%)
Male	15 (58%)
Age (years)	
25-34	10 (38%)
35-44	11 (42%)
45-54	0
55-64	5 (19%)
Race/ethnicity	
Asian	2 (8%)
African-American	2 (8%)
Caucasian	19 (72%)
Other	3 (12%)
Years in Practice	
>1	0
1-3	2 (8%)
3-5	6 (23%)
5-9	7 (27%)
>10	11 (42%)
Professional Affiliation	
Anesthesiologist	18 (69%)
Certified Registered Nurse Anesthetist	6 (23%)
Certified Anesthesia Assistant	2 (8%)

Table 3

Anesthesia Providers' Attitudes Toward Working with Patients of Low Health Literacy (N= 26)

Attitudes	Before Intervention, Mean (SD) ^a	After Intervention, Mean (SD) ^a	P Value	t Stat	Range ^b
"I feel confident in my ability to identify patients with low health literacy."	3.77 (0.95)	4.77 (0.43)	<.005	-4.82	1-5
"I feel confident in my ability to communicate with patients with low health literacy."	3.88 (0.91)	4.50 (0.51)	=.005	-3.07	1-5
"I am familiar with health literacy resources for healthcare professionals."	2.73 (1.08)	4.50 (0.51)	.005	-6.75	1-5
"I feel comfortable assessing literacy in my patients."	3.38 (0.90)	4.50 (0.51)	<.005	-4.70	1-5
"I feel comfortable providing literacy-related resources to my patients."	2.77 (0.99)	4.12 (0.33)	<.005	-6.50	1-5

^aData were compared using a paired t test;.^bI= Strongly disagree; 5= Strongly agree. A higher number indicates a more health literacy oriented attitude.

Pre/post test questions adapted from: Sicut, B. L., & Hill, L. H. (2005). Enhancing student knowledge about the prevalence and consequences of low health literacy. *American Journal of Pharmaceutical Education*, 69, 460-466

Table 4

Skills Used by Anesthesia Providers to Assist Patients with Low Health Literacy (N= 26)

Skills	Before Intervention, Mean (SD) ^a	After Intervention, Mean (SD) ^a	P Value	t Stat	Range ^b
Speak Slowly	3.38 (0.75)	4.85 (0.37)	<.005	-8.24	1-5
Plain Language	3.85 (0.54)	4.85 (0.37)	<.005	-7.36	1-5
Limit Information	3.46 (0.51)	4.85 (0.37)	<.005	-11.08	1-5
Teach Back or Show Me technique	2.73 (0.72)	2.85 (1.64)	.736	-0.34	1-5
Creating a shame free environment	4.58 (0.50)	5.00 (0.00)	<.005	-4.28	1-5

^aData were compared using a paired t test.

^b1= Never; 5= Very Often. A higher number indicates a higher chance of using health literate methods.

Pre/post test questions adapted from: Sicat, B. L., & Hill, L. H. (2005). Enhancing student knowledge about the prevalence and consequences of low health literacy. *American Journal of Pharmaceutical Education*, 69, 460-466

Table 5

Health Literacy Training Course Evaluation (N= 26)

Evaluation	Percentage of Anesthesia Providers who selected “Strongly Agree” or “Agree”
“This course provided me with helpful strategies to better identify geriatric patients with low health literacy.”	100%
“This course provided me with helpful methods to improve my communication with geriatric patients with low health literacy.”	100%
“The material covered in this course is useful to my practice setting.”	100%
“The content in this course was well organized and presented in a logical sequence.”	100%

Appendix A

National Culturally and Linguistically Appropriate Services Standards

Principal Standard

1. Provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.

Governance, Leadership and Workforce

2. Advance and sustain organizational governance and leadership that promotes CLAS and health equity through policy, practices, and allocated resources.
3. Recruit, promote, and support a culturally and linguistically diverse governance, leadership, and workforce that are responsive to the population in the service area.
4. Educate and train governance, leadership, and workforce in culturally and linguistically appropriate policies and practices on an ongoing basis.

Communication and Language Assistance

5. Offer language assistance to individuals who have limited English proficiency and/or other communication needs, at no cost to them, to facilitate timely access to all health care and services.
6. Inform all individuals of the availability of language assistance services clearly and in their preferred language, verbally and in writing.
7. Ensure the competence of individuals providing language assistance, recognizing that the use of untrained individuals and/or minors as interpreters should be avoided.
8. Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area.

Engagement, Continuous Improvement, and Accountability

9. Establish culturally and linguistically appropriate goals, policies, and management accountability, and infuse them throughout the organization's planning and operations.
10. Conduct ongoing assessments of the organization's CLAS-related activities and integrate CLAS-related measures into measurement and continuous quality improvement activities.
11. Collect and maintain accurate and reliable demographic data to monitor and evaluate the impact of CLAS on health equity and outcomes and to inform service delivery.
12. Conduct regular assessments of community health assets and needs and use the results to plan and implement services that respond to the cultural and linguistic diversity of populations in the service area.
13. Partner with the community to design, implement, and evaluate policies, practices, and services to ensure cultural and linguistic appropriateness.

14. Create conflict and grievance resolution processes that are culturally and linguistically appropriate to identify, prevent, and resolve conflicts or complaints.
15. Communicate the organization's progress in implementing and sustaining CLAS to all stakeholders, constituents, and the general public.

Source: U.S. Department of Health and Human Services, Office of Minority Health. (2016). Think cultural health. Retrieved from <https://www.thinkculturalhealth.hhs.gov/clas>

Appendix B

Key Components of Health Literacy Training Course

- Health Literacy Background
 - Health literacy definitions
 - Health literacy myths, facts, and statistics
- Consequences of Low Health Literacy
 - Increased health care costs
 - Worse health outcomes
 - Patient and provider frustration
- Identifying Patients With Low Health Literacy
 - Look for warning signs
 - Use screening tools
- Communicating With Patients With Low Health Literacy
 - Shame free environment
 - Use the Ask Me 3 Method
 - Speak slowly
 - Limit the amount of information
 - Repeat important information
 - Use simple, nonmedical language
 - Use pictures Use the “teach-back” method
 - Follow up with patients
- Ethnogeriatrics
 - Ethnogeriatric definition
 - Ethnogeriatric terms
 - Statistics
- Principles of Geriatric Care
- Impact of Cultural Factors on Geri Care
- Cultural Competence in Geriatric Care
 - Systems Level
 - Provider Level
- Effective Geriatric Care and Skills
 - Ethnogeriatric Assessment
 - Considerations for Health Information
- Strategies to Improve HL of the Ethnogeriatric Patient
- Health Literacy Toolkit Resources
 - Resources for health care professionals
- Active Learning Patient case to identify warning signs of low health literacy

Adapted from: Yeon, Choi, Enslein, Hagan, Hendrix, Skemp-Kelley, L.,...Yeo, 2001). *Curriculum in ethnogeriatrics: Second edition*. Retrieved from <https://web.stanford.edu/group/ethnoger/index.html>

Appendix C*Knowledge-Based Questions Used for Pre-Survey and Post-Survey*

True/False: Please indicate if each statement is true or false.

Multiple Choice: Please choose one answer.

1. Health literacy refers only to a person's ability to read written health information.
True False
2. Adults living below the poverty level have lower average health literacy than adults living above the poverty threshold.
True False
3. Adults over the age of 65 have lower average health literacy than adults under the age of 65.
True False
4. White Americans born in the United States make up the largest population of Americans with low health literacy.
True False
5. People with no health insurance or with Medicaid have lower average health literacy than people with private health insurance.
True False
6. When given material to read, low literacy patients will give excuses to avoid reading health information materials.
True False
7. People with low health literacy recognize their inadequate literacy.
True False

8. People with low health literacy usually know what their medications are for.
True False
9. People with low health literacy usually identify medications by the name on the bottle.
True False
10. People with low health literacy often bring family members along when talking to healthcare professionals.
True False
11. People with low health literacy have worse health outcomes than people with adequate health literacy.
True False
12. People who cannot read will most likely tell their health care workers.
True False
13. The average American reads at or below the _____ grade level.
A. 2nd to 3rd
B. 5th to 6th
C. 8th to 9th
D. 10th to 11th
14. Most written health information for patients is written at a _____ grade level.
A. 3rd
B. 5th
C. 8th
D. 10th
15. Most people with low health literacy have _____ IQs.

- A. Immeasurable
 - B. Below average
 - C. Average
 - D. Above average
16. Which of the following methods is *not appropriate* when counseling a patient with low health literacy?
- A. Speak slowly to help patients better comprehend important information.
 - B. Ask patient to repeat back important information.
 - C. Omit important information that a patient may not comprehend.
 - D. All of the above are appropriate methods to use.
17. While cultural competence can help to understand the health care needs of any patient, some issues are more sensitive in creating trust and a communication bond between the patient and the clinician. Which of the following domains of geriatric assessment most benefit from special understanding in assessing culturally diverse elders who are not acculturated to American core values?
- A. Physical exam, health, and social history
 - B. End of life preferences, and cognitive and affective status
 - C. Functional status and spirituality
 - D. Home, and living situation
18. Based on 1993 data, the population of persons in the US between 75 and 84 years of age compared to the same age group in 1900 has
- A. Doubled in numbers
 - B. Increased times six

C. Increased times ten

D. Increased times fourteen

Adapted from: Mihalopoulos, C. C., Powers, M. F., Lengel, A. J., & Mangan, M. N. (2013). Impact of a health literacy training course on community pharmacists' health literacy knowledge and attitudes. *Journal of Pharmacy Technology*, 29, 283-289. doi:10.1177/8755122513502455

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