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Health Literacy Program Proposal for Health Care Workers

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This is to certify that the doctoral study by

Shevon Howard

has been found to be complete and satisfactory in all respects,
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Abstract

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MSN, University of Phoenix, 2011

BSN, Hampton University, 2005

Project Submitted in Partial Fulfillment

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Doctor of Nursing Practice

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Abstract

Health information literacy influences patient health outcomes, yet almost 90% of adults struggle to understand health information. This study explored the impact of an education course in health literacy on healthcare professionals' methods of providing information to patients in order to increase effective communication and improve patient outcomes. This study drew from an integrated theoretical framework that suggests development and validation of tools to measure health literacy. Access to and understanding of reliable, high-quality health care information equalizes many other variables that impact health outcomes, including age, economic class, and cultural background. This study analyzed survey data collected from 2 doctors, 2 nurse practitioners, and 1 staff nurse selected based on their expertise and experience working with patients. They completed a learner-centered course, in which learners interact and instructors provide feedback. Based on survey responses, the participants strongly supported implementing the proposed education module. Four of the 5 experts agreed that a course in health literacy will help health care workers recognize and address patients with low health literacy. Limited health literacy is associated with poor health outcomes and higher health care costs. This type of literacy requires a complex group of reading, listening, analytical, and decision-making skills, and the ability to apply these skills to health situations. The results of this study may guide educators to effectively communicate with patients, increase health literacy, and improve patient outcomes.

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Dedication

I dedicate my project to my family and friends. Special thanks to my mother, Magdalena Howard, for being there throughout the entire doctorate program, for being my biggest supporter, and whose examples taught me to work hard for what I want and never give up.

I also dedicate this project to many friends who have supported me throughout the process. I appreciate Veronica Sanders who has been a constant support and for the many hours of listening and encouragement, Sandy Laguerre for infusing spiritual knowledge and encouragement, and Dr. Nennia Hill for her flexibility and to whom I believe my success is in part due to her support and mentorship. Finally, Dr. Annie Cruz, for her patience, encouragement, and for being my preceptor. Her guidance and feedback have been invaluable throughout this process. I am very grateful to all of you.

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This project could not have been completed without the support of my chair. I would like to thank Dr. Dana Leach for keeping the lines of communication open at all times. No matter what time of the day, I knew I could contact her and she would respond with words of encouragement and advice that was right on time. I would also like to thank my other chair member, Dr. Terry. Thank you for your flexibility, encouragement, and relaxed demeanor, which made for a tranquil environment during my oral defense. Thank you both for your professionalism and support.

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Section 1: Overview of Proposal

Doctor of Nursing Project Proposal

Health literacy plays a huge role in the outcome of many patients today. The Department of Health and Human Services (2011) defined health literacy as the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Nearly 90% of adults have difficulty using the everyday health information that is routinely available in health care facilities, retail outlets, media, and communities. Limited health literacy is associated with poorer health outcomes and higher health care costs (Department of Health and Human Services, 2011). Health literacy includes the ability to understand instructions on prescription drug bottles, appointment slips, medical education brochures, doctor's directions, and consent forms, and the ability to negotiate complex health care systems. Health literacy is not simply the ability to read. It requires a complex group of reading, listening, analytical, and decision-making skills, and the ability to apply these skills to health situations (National Network of Libraries, 2011).

Background and Context

Health literacy plays an integral role in the outcome of patient heath. The lack of health literacy in adults in the United States translates into poorer health outcomes and higher health care costs. Low levels of health literacy lead to misinformation and poor health choices. For example, breastfeeding has long been known to result in resistance to disease, improved neural development, and several other advantages for infants that lead to healthier physical development and strengthened emotional bonds. For most infants

with healthy mothers, breastfeeding generally leads to better health outcomes overall and is widely considered to be superior to bottle feeding (Allen & Hector, 2005). While investigating the reasons mothers still raise children on formula, Kaufman, Skipper, Small, Terry, and McGrew (2001) discovered that ignorance of the health benefits of breastfeeding was the primary motivating factor for women who chose to bottle-feed their babies. They found that women who possess low health literacy opted to breastfeed only 23% of the time, while 54% of those with a functional command of health-related information did so. This speaks to the impact of health literacy on all stages of personal health and decision making.

More recently, Sanders, Shaw, Guez, Bauer, and Rudd (2009) found that women with a low degree of health information competency had difficulty processing new information. Only 17% of women presented with advisory information regarding the benefits of breastfeeding were able to correctly understand the content (Sanders et al., 2009). Dewalt and Hink (2009) also found a strong link between health illiteracy and lower incidences of breastfeeding, albeit acknowledging other social factors that may be just as powerful in shaping this behavior. Their findings reflect those in a literature review conducted by Kumar et al. (2010) describing the pervasive underlying causes of health illiteracy and the lack of related skills.

Both Kaufman et al. (2001) and Kumar et al. (2010) acknowledged that simply supplying information to low-information parents is not sufficient in itself to encourage behavioral changes since the subjects lack the ability to correctly interpret it. This reality is strongly reflected in the program design I suggest for the improvement of health

literacy in general and for all health related conditions._According to the Surgeon General's Call to Action to Support Breastfeeding (2014), many women in the United States are aware that breastfeeding is the best source of nutrition for infants, yet "they seem to lack knowledge about its specific benefits and are unable to cite the risks associated with not breastfeeding" (p. 63). This is likely also true with other health related issues and practices.

In a recent study of a national sample of women enrolled in Special Supplemental Nutrition Program for Women, Infants and Children, 36% of participants thought breastfeeding would protect the baby against diarrhea. Another survey found that only a quarter of the U.S. public agreed that feeding a baby with infant formula instead of breast milk increases the chances the baby will get sick. Qualitative research with mothers revealed that information about breastfeeding and infant formula is rarely provided by women's obstetricians during their prenatal visits and that many people, including health professionals, believe that because commercially prepared formula has been enhanced in recent years, infant formula is equivalent to breast milk in terms of its health benefits" (Surgeon General's Call to Action to Support Breastfeeding, 2014, p. 61-64). This belief is incorrect. Therefore, it is reasonable to assume that patients might also believe similar misinformation about other topics.

Information regarding the health benefits and best procedures for breastfeeding is better when presented in a simpler, clearer format since expectant mothers often have difficulty understanding information commonly used in brochures (Kumar et al., 2010). This inability to comprehend basic information in a health-related context indicates that

health educators need to develop new material that is more easily accessible to low-information populations if they wish to convince greater numbers of women to breastfeed and if they wish to reach and inform a greater number of patients with information (Kaufman et al., 2001; Kumar et al., 2010).

In addition, mothers who are uncertain about what to expect with breastfeeding and how to carry it out need more than the customary physician or health workers protocol response that breastfeeding is natural and that anyone can do it. Mothers might feel inadequate, and the health of the infant may be in jeopardy if a mother fails to achieve an effective latch because instruction was not available or she did not understand what was being said or shown. The incongruity between positive expectations about breastfeeding and the often disappointing reality has been identified as a key reason that many mothers stop breastfeeding within the first two weeks postpartum (Surgeon General's Call to Action to Support Breastfeeding, 2014, p. 66).

The same goes for illnesses and conditions requiring extensive medication, timings of medication, and cautions that may indicate bad reactions. Simply telling a patient to take one of these, two of these, one, two, or three times a day, and then handing them vials of drugs often results in sending patients home with more questions than answers. Extrapolating from this point, many angioplasty patients without guidance believe the procedure and medications to be the end of their clogged artery problem. Simply because no one has told them any different or health care professionals have failed to emphasize other options? If so, patients might fail to increase cardio-vascular

exercise or make dietary changes and other lifestyle changes that promote good health in the future.

Purpose Statement

The purpose of this project is to determine if first-time mothers are health literate and how much of that knowledge is acquired independently and or via health care documentation, specifically related to decisions to initiate breastfeeding. As noted by Egbert and Nanna (2009) health care organizations, physicians, and professional nurses need to embrace a health literacy agenda. Health literacy proficiencies could be substantially increased by making the importance of breastfeeding more understandable and encouraging the use of televised advertisements and presentations in health care settings (Egbert & Nanna, 2009) to create new approaches to dispensing information to first-time mothers with low health literacy.

Hypothesis

By completing a course in health literacy, health care providers will improve communication with first-time mothers about breastfeeding and therefore increase the number of breastfeeding mothers and improve overall health outcomes of nursing infants in the population served.

Problem Statement

Health care workers on all levels, from the receptionist to the release team, are not currently trained to assess and improve the health literacy of patients. This results in patient difficulties in understanding health benefits or concerns connected with their medical situation. Handing out brochures or offering suggestions are not enough. The

effective use of communication and technology by health professionals could improve patient- and public-centered health information and services. The use of proven and effective methods of communication to increase health literacy in patients through a commitment to train health care workers could help ensure health care quality and safety, increase the efficiency of health care and clinical service delivery, improve the health information infrastructure, support care in the community and at home, facilitate clinical and consumer decision-making, and build health skills and knowledge (Healthy People 2020, 2011).

In this project, I research and suggest an educational framework that includes all members of the health care team directly involved with patients, from reception to discharge and beyond. Such a framework uses straightforward methods: the use of plain language free from medical jargon, face-to-face sessions with the patients, the use of simple diagrams or pictograms to illustrate explanations, and educational materials geared to low health literacy individuals. A review of publications from The Agency of Health Research and Quality, Institute of Medicine, Healthy People 2020 (2011) supports the need to implement a continuous training course to address health literacy.

Direct observation will be used to evaluate the effectiveness of courses, as well as follow-up phones calls to patients to gauge whether the methods employed by the health care workers effectively improved patient health care management. Follow up interviews with staff will reveal preferred methods, ones that work, and the manner in which they were implemented. The overall objective is to design a course in teaching and promoting health literacy for health care workers to evaluate how health care workers put to use the

methods demonstrated and to assess the outcomes through direct communication and interaction with patients.

If health care workers are using the communication methods provided to them patients may benefit in the form of improved health care literacy when it comes to healthy effective decisions that impact their own lives and the lives of those in their care. Health literacy and implementing educational courses as part of health care training increases the quality of care.

Evidence-Based Significance

The Agency for Health Care Research and Quality periodically sponsors the development of evidence reports and technology assessments through its evidence-based practice center to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. A report by Berkman et al. (2004) addressed the relationship between technology, literacy, and health outcomes. Commissioned by the American Medical Association, the goal was to provide science-based information on costly medical conditions and new health care technologies (Berkman et al., 2004, p. ii). As one of the most extensive and inclusive studies, the report avoided studies in isolation and brought together a team of experts and medical research partner organizations to ensure evidence designed to improve the quality of health throughout the nation (Berkman et al., 2004, p. iii).

Berkman et al. (2004) investigated the effects of low literacy on health outcomes by assessing and reassessing seven main medical information data sources from 1980 to 2003, along with the application of key questions relative to a series of articles designed

to determine literacy. Of the 3,015 articles originally chosen for the study, 2,330 were retained for use. Of the 684 remaining, 611 more were rejected as either overly complex or not appropriate for an average health literacy assessment. Of the 73 eventually retained, half addressed an initial question and the other half addressed a second, related question. Controls in the investigation were exhaustive. Every effort to sift and sort appropriate literature was obviously a primary goal. In the end, low literacy was shown to be associated with several adverse health outcomes, limited health knowledge, increased incidence of chronic illness, poorer intermediate disease markers, and less than optimal use of preventive health services (Berkman et al., 2004). The ultimate conclusion was that those with poorer reading skills are believed to have greater difficulty navigating the health care system and are…at risk of experiencing poorer health outcomes(Berkman et al., 2004, p. v).

Health Literacy and Culture

According to the Patient and Affordable Care Act of 2010, Title V, the term health literary refers to the degree to which an individual can breakdown and interpret information to make appropriate decision to maintain optimal health. The JAMA Council on Scientific Affairs described health literacy as a compilation of skills, that includes basic academic skills to function in the health care sector., such as understanding a brochure handed out by a physician on maintaining a healthy heart or comprehending the instructions on a medication label (Almader-Douglas, 2013)

In the United States, health literacy of the general public is measured by using four levels of performance including (a) below basic level, represented by 14% of the

U.S. population; (b) basic level, represented by 22% of the population; (c) intermediate, represented by 36% of the population; and (d) proficient, represented by a mere 12% of the population (Almader-Douglas, 2013). The remaining 16% is either entirely health illiterate or is unable to read and write English (Almader-Douglas, 2013). Therefore, approximately 20% of the current American population is either health illiterate or below the basic acceptable level because of their cultural background and cultural traditions. People are from different cultural backgrounds, and contribution to low health literacy can be credited to belief systems and various communication styles and methods.

For many Americans who arrive as immigrants from Mexico, South America, Central America, the Middle East, and Asia, health literacy is closely tied to religious and social beliefs. According to the Centers for Disease Control, the foundational ideas that people possess concerning health issues and the manner in which health concerns are relayed may possibly be due to ones cultural preference. Language causes a majority of the problems related to health literacy. For example, when a physician whose primary language is English attempts to explain a medical situation to a patient whose primary language is Spanish and who has only a basic understanding of English, the context of the discussion becomes blurred to the patient, especially when the discussion involves medical jargon (Tools for Cross-Cultural Communication and Language Access, 2015).

Language differences cause communication between physicians and patients to suffer and lead to misunderstandings. This scenario is made even more complex when considering possible cultural barriers that often prevent women from discussing their intimate problems with anyone outside of their immediate families. Some foreign

language patients may possess weak reading and writing skills in their own native language as well, problems understanding technical details, such as how many milligrams to take on a daily or weekly basis or following the directions for using a home blood pressure monitor kit.

Singleton and Krause (2009) pointeded out that culturally specific health belief models are used by individuals to help explain the complexities and mysteries of health and illness. For instance, certain cultures in Latin America and the Middle East practice magico-religious beliefs that involve

> supernatural forces that inflict illness on humans, sometimes as punishment for sins, in the form of evil spirits or disease-bearing foreign objects"; others hold the belief that illness is predetermined and that "outcomes are externally preordained and cannot be changed.

Of course, when these scenarios are in play, the physician or nurse is faced with an extremely difficult problem that may not be solvable. In order to help lower the rates of health illiteracy in the United States, physicians, nurses, and other health care professionals must become more culturally competent and possess the ability to simplify medical language and terminologies so that every patient can understand what needs to be done to cure and/or treat their medical conditions.

Implication for Social Change in Practice

Evidence-based studies are especially helpful when they incorporate social implications, such as the impact of interaction with various ethnic populations. Multicultural populations have issues pertaining to literacy, language, and culture. A

study of functional health literacy in adults (TOFHLA) conducted by Parker, Baker, Williams, and Nurss (1995) suggested that a large percentage of English speaking and Spanish speaking people (256/249) failed when asked to perform basic reading tasks. Results of the test may be somewhat different today. The TOFHLA showed correlation coefficients of 0.74 and 0.84, respectively. Parker et al. stated that

> Fifteen percent of the patients could not read and interpret a prescription bottle with instructions to take one pill by mouth four times daily, 37% did not understand instructions to take a medication on an empty stomach, and 48% could not determine whether they were eligible for free care .

Ten years later, another study conducted using the S-TOFHLA showed similar results to Parker et al. (1995) and to Berkman et al. (2004). Aguirre, Ebrahim, and Shea (2005) tested 936 non-Hispanic and 368 Hispanic patients; 1,066 Hispanics completed the Spanish S-TOFHLA. All were publically insured Medicaid and Medicare patients. Validity of both versions of the S-TOFHLA was supported by large positive relationships with education and inverse relationships with age. Significant differences between scores for men and women remained after adjusting for level of education. Score differences occurred across numerous items. Why women score differently than men in psychometric tests remains to be studied further. One thing is clear, however: "Variability in literacy skills within subgroups of patients highlights the importance of health care providers being sensitive to patient literacy levels in both spoken and written communications" (Aguirre et al., 2005, p. 332).

A useful example of this is the social health issue of tobacco use. Attempts to dissuade smoking in the past have amounted to simplistic, ineffectual actions at best. A more modern, comprehensive approach acknowledges social and environmental factors and enforces the social stigma of the practice through environmental bans. Simply making the practice harder, however, may not be the best answer and "may possibly underestimate and undermine the role of health education" (Nutbeam, 2006, p. 259). For instance, ineffective communication between patients and the health care system might impact public health policy concerning the why dependable health insurance is necessary and beneficial. Ineffective communication may also be at the root of why patients with low or even average health literacy levels cannot achieve a non-smoking lifestyle.

Definition of Terms

Chronic illness: Chronic illness is defined on the basis of the biomedical disease classification and includes diabetes, asthma, and depression (Martin, 2007).

Determinants of health: The social and economic determinants of health are the circumstances into which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness (Center for Disease Control and Prevention, 2014).

Educator: An educator is one skilled in teaching (Merriam-webster.com, 2015).

Ethnicity: Ethnicity is the fact or state of belonging to a social group that has a common national or cultural tradition (Oxford Dictionary, 2015).

Health literacy: The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make

appropriate health decisions is considered that individual's health literacy (National Network of Libraries of Medicine, 2011).

TOFHLA: The Test of Functional Health Literacy Assessment (TOFHLA) is a 7-minute test, with 36 reading comprehension items in two passages that assess a patient's level of comprehension of health-related material (National Network of Libraries of Medicine, 2011).

Assumptions and Limitations

There is a definite need to implement health literacy education courses for health care workers to increase the quality of care. However, even the best professionals with the most honest and expert intentions cannot always effectively communicate with a population of low literacy patients to the necessary degree. Despite advances in health literacy programs based on communication and education, such programs have made a small improvements and a slight dent in closing the gap. (Nutbeam, 2006, p. 260). Much of this has to do with assumptions regarding definition of health literacy. The World Health Organization defined health literacy as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health"; the American Medical Association defined it as "a constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment"; and the Institute of Medicine (IOM) defined it 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" (Egbert & Nanna, 2009,). The last definition (from the IOM) has received the most support in the United States and has been adopted by Healthy People 2020 (2010) as well as a number of other U.S. organizations. Therefore, it provides the definitional framework for further discussion and program design.

It is important to note that Nutbeam (2006) suggested the definition falls short of its purpose, and that health education and resulting increases in health literacy should be geared towards the community and economical factors that focuses on health promotion and behavioural changes (p. 264). In short, it is necessary to not merely assume that reading comprehension is the overall key to health literacy. Social factors play an important role in improving a patient's ability to deal with the health system at large. Pharmacists and physicians should not admire peers for their ability to speak in technical terms. This dissuades other health professionals from speaking in such a way as to improve health literacy.

Summary

The importance and relevance of health literacy to patients who need to get the best quality care and outcomes from the health care system has been well established. The need for improved outcomes in the health care system is clear. A focus on effective communication must be maintained from first contact with a patient to the last interaction. Health professionals cannot expect improved health literacy to occur without the keen observation of practiced eyes trained in assessing the degree of need. Communication training is essential to ensure the application of processes and procedures

that recognize the need for intervention so that each patient, of high or low health literacy skills, achieves the best outcome from his or her interaction with the system.

In this project, I design and implement an evidenced-base course of study for those working in the medical field. Patients' ability to listen, read, and comprehend instructions and information provided, if any, must be understood. The cultural background of the patient must also be considered. Educated health professionals must strive to ensure that each patient is individually and accurately assessed and then follow-up in order to achieve the best health outcomes.

For this project I used the IOM definition of health literacy but give credence to Nutbeam's (2006) general assertion that health literacy is not only a product of listening, reading, and understanding, but of social and environmental factors. Health literacy is essential to satisfactory health outcomes. The need for courses that educate health care workers on all levels to recognize and deal with health literacy or illiteracy remains an integral factor in achieving quality care.

Section 2: Background and Context

Database Search

A systemic overview of research, journals, and publications was performed using search engines such as National Archives, GoogleBooks, Online Journals, SpringerLink, Directory of Open Access Journal, PubMed, and Medline Plus. Keywords used in the search included *health literacy*, *quality of care*, *health outcomes*, *poor health literacy*, and *evidence based methods*. An abundance of peer-reviewed literature supports this proposal and the need to implement a course in health literacy for health care providers.

Specific Literature

Renkert and Nutbeam (2001) examined the concept of maternal health literacy, defined as the cognitive and social skills that determine the motivation and ability of women to gain access to, understand, and use information in ways that promote and maintain their health and that of their children. Renkert and Nutbeam (2001) investigated the use of health literacy as collected from focus groups and interviews with health care providers, pregnant women, and new mothers. The goal was to discover what women learn from existing health education and how that learning could be improved. The results from educators and women suggested serious time limitation in classes. Anxiety and natural curiosity about childbirth overly confines content of classes to those areas, so little time is left for other topics. Teaching methods were heavily weighted toward transfer of factual information as opposed to practical decision-making skills for childbirth and parenting. Women in these classes needed to learn skills and gain the confidence to take action concerning pregnancy, childbirth, and early parenting (Renkert & Nutbeam, 2001).

Wolf, Gazmararian, and Baker (2005) evaluated the association between health literacy, self-reported physical and mental health function, and health related activity limitations among new Medicare managed care enrolees. Using a cross section survey of 2,923 subjects, literacy was measured using the Short Form of Functional Health Literacy using outcome measures based on scores of physical and mental health functioning, difficulties with normal activities of daily living, and limitations brought on by overall health and pain. After adjusting for the prevalence of chronic conditions, health risk

behaviors, and sociodemographic characteristics, the study showed individuals with inadequate health literacy had worse physical function (67.7 vs 78.0, *P*_.001) and mental health (function; 76.2 vs 84.0, *P*_.001) than individuals with adequate health literacy (Wolf et al., 2005, p. 1947).

While there is a large body of literature concerning health literacy and adults, few researchers have focused on adolescents. This is probably because adolescents are perceived as having less frequent interaction with the health care system. However, according to Manganello (2007), they are at a crucial stage of development and need to acquire learning skills they will carry into adulthood. To that end, Manganello (2007) explored issues including peer and parent influences, systems (media, education, and health care), and how these impact adolescent health literacy. The collected data informs a specific framework for studies in the future that includes these main concepts: identification of individual, interpersonal and systemic contributors to health literacy, multiple types of health literacy appropriate for adolescent application, and behavioral, service, and cost ramifications of health literacy in the population (Manganello, 2007). The study and framework suggests patterns of further research, development, and validation of tools to measure health literacy and to study predictors of health literacy levels among adolescents and how health outcomes are affected.

General Literature

Mental health literacy may seem like a specialized study when it comes to the literature. However, Jorm (2000) discussed the issue from a general public perspective by bringing diverse research together and filling information gaps. Using a narrative view

within a conceptual framework, Jorm found most of the public could not identify specific mental disorders, their beliefs about the causes of disorders differed significantly from experts and the medical community, attitudes hindering recognition and help seeking were prevalent, and limited public health literacy hindered public acceptance of evidence-based mental health treatment.

Included in this wide-ranging assessment were items designed to measure the health literacy of American adults. The assessment was administered to more than 19,000 adults (ages 16 and older) in households or prisons. Unlike indirect measures, such as self-reports and other subjective evaluations, this assessment measured literacy directly through a variety of tasks of varying difficulty. Scores were calculated by highest/lowest, by age, gender, language, poverty, race, and ethnicity. Levels of health literacy were shown in completion of each task.

Baker (2006) approached the topic of health literacy with skepticism as a complexed makeup that relies on a persons ability to comprehend posed by society and the health care system. After suggesting several complex approaches that might be used, and discussing the pros and cons of each approach in assiduous detail, Baker wrote

> It still remains unclear whether it is possible to develop an accurate, practical 'screening' test to identify individuals with limited health literacy. Even if this goal is achieved, it remains unclear whether it is better to screen patients or (as suggested in Section I of our discussion) to adopt 'universal precautions' to avoid miscommunication by using plain language in all oral and written communication

> and by confirming understanding with all patients by having them repeat back their understanding of their diagnosis and treatment plan (p. 878-883).

In the presently proposed research program design, I will suggest follow-up through interviews and phone call to achieve this.

Conceptual Models and Theoretical Frameworks

Past discussions have touched lightly on theoretical frameworks for health literacy education programs. Of the hundreds of conceptual models, from simple to inordinately complex, two are presented here for evaluation. Figure 1 represents a direct basic conceptual model from Baker as reproduced in Cooper (2015, p. 8). The model provides an ideal example of what many consider a good place to start when initiating a health literacy assessment and education program. Cooper (2015) praised the model for including "cultural and other social factors…as influencing health literacy" while at the same time criticizing it for failing to explain "how those factors exert influence" (p. 7).

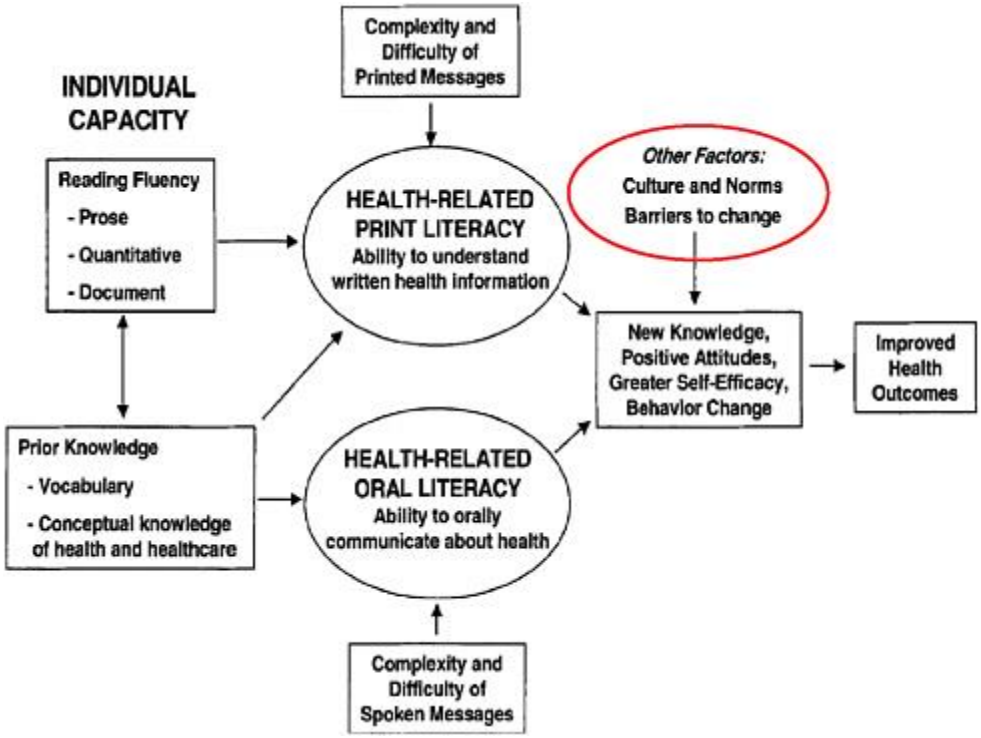


Figure 1. Individual capacity for health-related literacy. This figure illustrates the relationships between factors that impact print and oral health-related literacy. Reprinted from Health Literacy and Health Disparities: Opportunities for Trans-Disciplinary Collaboration by L. Cooper, 2011.

Figure 2 shows an integrated model for health literacy prepared by Sorensen et al. (2012) for a U.K. public health agency. It is interesting to note the differences in theoretical approach between Baker's (2006) American model and Sorensen et al.'s model with its more diversified analytical framework perspective. During the 6 years between these studies, a scientific evolution in the conceptual design of health literacy models took place. Sorensen et al. went beyond the basics of achieving literacy toward an inclusive model that from the outset favors an analytical theoretical framework that not

only includes but places focus on societal and environmental determinants. More recent frameworks, prepared by the U.S. government medical agencies, place more emphasis on societal and environmental determinants. Most, however, still include cost as a major determinant. This is not surprising since the U.S. health system relies heavily on cost considerations as opposed to the universal health care framework in the U.K.

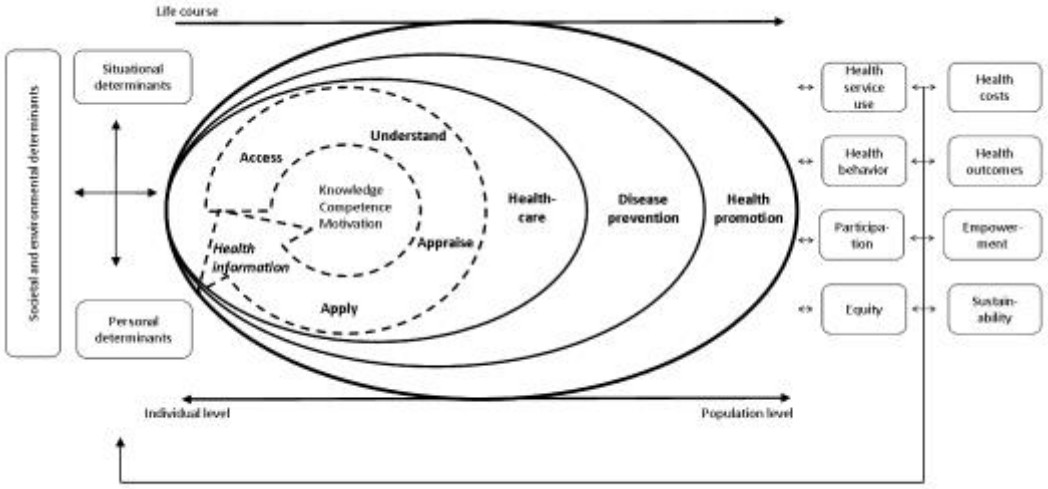


***Figure 2*. Integrated model of health literacy. Reprinted from *BMC Public Health*.** Sørensen, K., Broucke, S. V., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H. (2012). BMC. *Public Health*, *12*(80). doi:10.1186/1471-2458-12-80.

Section 3: Methodology

Project Design

Primary Care Setting

A system-wide curricular initiative to advance evidence-based practice among clinicians and students has been ongoing since the new millennium. Jacobs, Rosenfeld, and Haber (2003) wrote,

> Increasing competency in information literacy is the foundation for evidence-based practice and provides nursing and all health professionals with the skills to be literate consumers of information in an electronic environment. Competency in information literacy includes an understanding of the architecture of information and the scholarly process; the ability to navigate among a variety of print and electronic tools to effectively access, search, and critically evaluate appropriate resources; synthesize accumulated information into an existing body of knowledge; communicate research results clearly and effectively; and appreciate the social issues and ethical concerns related to the provision, dissemination, and sharing of information. (p. 320)

While the statement is relevant to more advanced clinicians and students, the goal here is to design a health literacy education program that is user friendly to all health care professionals.

Approach and Rationale

The research project used a combination of two methods: instructor-centered and learner-centered. The instructor-centered method "controls the material to be learned and

the pace of learning while presenting the course content to the students" (Rochester Institute of Technology, 2011, p. 1). The learner-centered method posits that "students learn best not only by receiving knowledge but also by interpreting it, learning through discovery while also setting the pace of their own learning" (Rochester Institute of Technology, 2011, p. 1). With this method, the instructor is responsible for mentoring students and sustaining the curriculum. The instructional process is about the execution. Material was delivered via computer in the educational plan in an attempt to satisfy different learning styles. A computer-based delivery fulfills the three domains within Bloom's taxonomy and Knowles's theory. The instructor-centered method and the learner-centered method were also incorporated in the instructional process.

The instructor-centered method was used to deliver material via Power Point. PowerPoint presentations allow the instructor to explain the meaning of health care literacy: Why it is important and terminology understood by the patients. This helps locate and uses laymen terminology while backing up Knowles's theory that adult learners focus more on processes rather than contents. The cognitive domain was communicated through knowledge and comprehension of health care literacy. The affective domain was communicated by factual data that contains the statistical information about the effects of health care literacy among health care workers and the effects it has on patients. The psychomotor domain was communicated through demonstration, videotapes, and return demonstrations.

The other half was delivered through the learner-centered method. This was done in the form of an interactive case study asking the learners to demonstrate how they

would discharge the patient if he or she were on the unit and discharging a patient in reality. While role playing, the learners were offered rationales for correct and incorrect actions. This adheres to the cognitive domain using the knowledge acquired while supporting Knowles's theory that adults are autonomous and practical.

The psychomotor domain was executed through return demonstration and the application of health literacy. The affective domain was illustrated by showing the learners the severity of not using laymen's terms when warranted during their return demonstration. This reinforces the importance of health literacy for patients. Although low health literacy can affect all populations, it is especially problematic among those of modest financial means, older adults, or people with limited education or English proficiency. Inadequate levels of health literacy in patients may be especially challenging to clinicians and others serving as safety-net providers in primary care settings.

Population and Sampling

Patients at a primary care setting made up the sample population. Selection criteria for patients included diversity of facility type, geographic location, and population served who fit the selected population framework. Additionally, administrative office staff were asked to fill out an online survey regarding current health literacy practices in use at their location. Five local experts consisting of two doctors, two nurse practitioners, and a staff nurse validated the instrument. These individuals were chosen based on their experience and expertise with patients and their health care needs.

Data Collection

Data were collected from a survey using a 5-point Likert scale. Surveys were delivered electronically to two physicians, two nurse practitioners, and a staff nurse. Complete anonymity for all information is legally binding through HIPAA documents signed by all parties. The issue of privacy related to electronic surveillance by outside parties of texts and email communication with the facility cannot be guaranteed. It is an issue of concern to many in the era of electronic communication. The decision to send initial online questionnaires electronically to facilities adheres to current practice, despite not being the safest method for protecting privacy of participant offices and clinics. Welsh, Hassiodis, O'Mahoney, and Deahl (2003) explained harmful surveillance in terms of its significance to those they defined as the "elderly with dementia and… adults with learning difficulties" (p. 373). This makes use of electronic communication in this area a bit concerning. The probability of online questionnaires and email messages to and from facilities being intercepted by inappropriate agencies cannot be considered remote since according to Welsh et al. that information may be used to limit services to certain populations that may very well be a part of our study. Neither physicians nor staff were asked in the online questionnaire to refer to patients or their status specifically. All general questions pertaining to learning abilities of patients and elderly patients are anonymous.

Data Analysis

Data were analyzed using a 5-point Likert scale questionnaire ranging from *always* = 5 to *never* = 1. Quantitative data were analyzed using descriptive analysis.

Since the data relied on self-reporting, particular questions were weighted to signify definite perspectives in the five areas studied. The analysis of the overall information provides significant evidence as to which features of educational programs for health workers should be the focus.

Based on clinicians' responses, the level of consensus affirming the need for a team effort in assessing, monitoring, and dealing with health literacy issues indicated a need for educational programs that emphasize in-office team development. The goal is a collaborative effort in assessing health literacy assessment in individual patients through sharing of information. Emphasis on responsibility of the team to pass along information to members on any perceived health literacy in patients is key. Particular attention was paid to answers from patients regarding whether or not they understand what was being explained to them sufficiently to follow instructions and gain positive health outcomes.

Health workers should have ample exposure to communication strategies. Certainly such strategies should be a major focus of any educational course for those working in health care. Clinicians responding to the online survey, as well as those who participated in the interviews, could indicate little exposure to, and lack of knowledge of, formal communication strategies such as Teach Back, Ask Me 3, or Motivational Interviewing.

Questions to both health care workers and patients must assess the use of plain language, face-to-face communication, pictorials, and educational materials. Many of those interviewed may think they communicate directly, but a comparison of staff/patient responses may indicate the opposite. This program includes a small writing sample

asking clinicians to state a health issue in 25 words or less. A patient was asked to read the response and put in his or her own words to determine comprehension. All medical offices and facilities should include a dossier of pictures and educational materials proven to be understood by those with health literacy issues through Teach Back and other methods, including evidence of understanding during home visits, etc.

Forming partnerships with patients to achieve goals may be difficult if some health care workers do not interact with many patients. Questions in interviews regarding how important patients feel when visiting their doctor may reveal much about a failure to reveal health literacy issues. Patients may feel they are being processed rather than listened to. It is difficult to get health care workers to admit or even realize they are doing this. Courses in interpersonal interaction using role play could contribute greatly to health workers' sense of the patient as an individual.

Once a health literacy program is in place, in-service training and new employee orientation will be at the core since not all health workers will receive formal training in these areas. Discussion will be conducted about responses to questionnaires from clinicians and their self-analysis, which may or may not be unbiased. As stated, certain questions in the questionnaire will be constructed in ways to demand accuracy with a small ratio of deception. The project participants will have specific selection criteria to eliminate undesirable participants.

Program Evaluation

Evaluation will be an essential piece of the health literacy development and improvement process in this research study. The only way to know if the changes and

interventions implemented are having the intended effect is through evaluation. Reinforcement and confirmation that practices are working are at the heart of any program evaluation. Health improvement is what health professionals strive to achieve in today's medical environment where "health actions have expanded beyond infectious diseases to include chronic diseases, violence, emerging pathogens…and the social contexts that influence health disparities" (U.S. Department of Health and Human Services, 2011, p. 2).

Here, on the limited scale of primary care facilities with certain clientele, the process is slightly less complex. The evaluation process is relegated to the comparison of responses to weighted questions from health care workers and patients. The goal is to correlate information into practices and procedures that help both workers and patients with low literacy better understand and use the health care system, understand their particular health issues, and become better communicators and listeners respectively with the ultimate goal of improved health outcomes.

Steps for evaluation will include phone call follow-ups at no later than 1 week after a visit. These will reveal the degree to which the patient has absorbed information when it comes to treatment and his or her own responsibility in assuring good health outcomes. There will also be follow-up personal visits after 1 month to provide an opportunity for health care workers to assess how a patient is doing, whether patients followed instructions properly, answer any questions, and if patients have had any problems with medication dosage or in any other area including system problems such as insurance payments or filings. Finally, there will be an assessment as to whether patients

level of health literacy is hindering patietns health outcomes during which the health worker may suggest a referral to a social agency to provide additional help.

Since actions such as reading, understanding, and taking medications has been reported by most studies, a hands-on approach to the problem both in office or at the patient's home might include a reinforcement of concepts such as demonstration of pill sorting into a daily divided pill case. The first action should include having the patient read instructions and then, with the health care worker as guide, placing the proper dosage of pills into each section. The goal is patient independence. Each patient should receive a personal call card to use if any questions or situations arise that the patient is incapable of handling.

Final evaluation of the program will come in the form of improved outcomes from one patient to the next as assessed through observation, home visit, and a final questionnaire asking patients to evaluate their recent health visit experience as compared to those they might have had previously. Another questionnaire will ask workers to assess progress, if any, and ask for an evolutionary evaluation of how the program can be improved.

Conclusion

In conclusion, the proposed project will show how health literacy contributes to the communication gap between physicians and patients. Patients with low health literacy may have less familiarity with medical concepts and vocabulary and ask fewer questions (Kripalani & Weiss, 2006). Through the various methods mentioned, this study

will provide information on areas in need of improvement while ultimately leading to an increase in breastfeeding amongst first time mothers and improved health outcomes.

Section 4: Findings and Recommendations

This project entitled "A Health Literacy Course for Health Care Workers" was approved by Walden University IRB (Reference # 03-02-16-0487329) and was overseen by Walden committee members.

A sample of health care workers who communicate regularly with first-time mothers were asked to fill out an anonymous survey in which they assessed the level of health literacy of their patients. Specifically, five local experts consisting of two doctors (MD), two nurse practitioners (NP), and a registered nurse (RN) were surveyed. These individuals were selected based on their experience and expertise with first-time mothers and their health care needs. Questions 1 to 5 in the survey captured the patients' general level of health literacy and its implications on the health care system as perceived by the health care workers.

As a precursor to the educational program design, I explored the importance of health literacy and how implementing a health literacy course increases nurses' and physicians' ability to recognize and address patients with low health literacy. Therefore, the survey asked participants to indicate whether the proposed education module would improve their ability to recognize and address patients with low health literacy (Question 6). In this section, I present the results obtained from the survey by focusing on the descriptive statistics for each survey item. I then follow with a discussion of the results in the context of the existing literature, implications, recommendations, strengths and limitations, and conclusions.

Findings

Question 1 asked participants to rate the extent of their agreement with the following statement: Individuals with high levels of education may or may not have limited health literacy. The descriptive statistics presented in Table 1 reveal that only two of the five experts (40%) agreed. The corollary of this finding is that the majority of health care workers surveyed in this study do believe that patients with high levels of education have higher health literacy than patients with low levels of education. The average rating was 3.00 (*SD* = 1.00), while the median and mode were 3.00, and 4.00, respectively.

Table 1

Descriptive Statistics for Interview Question 1

Statistic	Value
% Disagree	-
% Somewhat disagree	40%
% Somewhat agree	20%
% Agree	40%
Avg	3.00
SD	1.00
Median	3.00
Mode	4.00

Note. Five health care professionals designated as experts provided survey data analyzed here.

The data in Table 2 further shows the distribution of responses for Question 1 by staff category (MD, RN, or NP). Overall, although there is agreement among the NPs, one of the two MDs along with the registered nurse *somewhat disagree* with the

statement that individuals with high levels of education may or may not have limited health literacy.

Table 2

Descriptive of Responses for Question 1 by Staff Category

Staff	Disagree	Somewhat disagree	Somewhat agree	Agree	Total
NP			1	1	2
RN		1			1
MD		1		1	2
Total		2	1	2	5

Question 2 asked participants to rate their extent of agreement with the following statement: The average American reads at the 6th grade level. As Table 3 indicates, all five participants indicated that they *somewhat agree* with this statement. Since all participants gave the same response, it was not necessary to further examine the distribution of responses by staff category. The mean, median, and mode were all equal (3.00).

Table 3

Descriptive Statistics for Question 2

Statistic	Value
% Disagree	-
% Somewhat disagree	-
% Somewhat agree	100%
% Agree	-
Avg	3.00
SD	0.00
Median	3.00
Mode	3.00

Question 3 prompted participants to specify their extent of agreement with the following statement: Health literacy level cannot be determined based on race or ethnicity, culture, age, or socioeconomic status. All five experts agreed with this statement (Table 4). The mean, median and mode for the ratings to this question were equal (4.00).

Table 4

Descriptive Statistics for Question 3

Statistic	Value
% Disagree	-
% Somewhat disagree	-
% Somewhat agree	-
% Agree	100%
Avg	4.00
SD	0.00
Median	4.00
Mode	4.00

Notably, no other question in the survey registered this high level of consensus. As with the previous question, since all participants gave the same rating, it was not necessary to examine the distribution of responses by staff category.

Question 4 asked respondents to indicate their extent of agreement with the following statement: Limited health literacy can cause minor health issues to become major concerns. Three respondents agree and two respondents *somewhat agree* with this statement (Table 5). The median and mode for the ratings to this question were equal (4.00), while the mean was 3.60 (*SD* = .55).

Table 5

Descriptive Statistics for Question 4

Statistic	Value
% Disagree	-
% Somewhat disagree	-
% Somewhat agree	40%
% Agree	60%
Avg	3.60
SD	0.55
Median	4.00
Mode	4.00

Table 6 further shows the distribution of responses by type of staff. While both nurse practitioners agreed with the statement, the level of agreement was weaker among the two MDs. One responded *somewhat agree* and the other *agree*. The NP rated her agreement as *somewhat agree*.

Table 6

Descriptive of Responses for Question 4 by Staff Category

	Disagree	Somewhat disagree	Somewhat agree	Agree	Total
NP				2	2
RN			1		1
MD			1	1	2
Total			2	3	5

Question 5 prompted participants to indicate the extent to which they agree with the following statement: Limited literacy drains resources from patients, employers, and physicians. Four of the five participants *somewhat agree* and one participant *agrees* with

this statement (Table 7). The average rating for responses to this question was 3.20 (*SD* = .45), while the median and the mode were 3.00.

Table 7

Descriptive Statistics for Responses to Question 5

Statistic	Value
% Disagree	-
% Somewhat disagree	-
% Somewhat agree	80%
% Agree	20%
Avg	3.20
SD	0.45
Median	3.00
Mode	3.00

In addition, Table 8 summarizes responses by staff category. The NP and the RN said that they *somewhat agree* with the statement. One physician selected *somewhat agree* while the other chose *agree*.

Table 8

Descriptive Statistics for Responses to Question 5 by Staff Category

	Disagree	Somewhat disagree	Somewhat agree	Agree	Total
NP			2		2
RN			1		1
MD			1	1	2
Total			4	1	5

Finally, Question 6 asked participants to indicate whether they believe that the proposed education module would help health care workers recognize and address patients with low health literacy accordingly in the future. Table 9 shows that four of the

five experts *agree* and one expert *somewhat agrees* with this statement. The mean rating was 3.80 (*SD* = .45), while the median and mode were 4.00.

Table 9

Descriptive Statistics for Responses to Question 6

Statistic	Value
% Disagree	-
% Somewhat disagree	-
% Somewhat agree	20%
% Agree	80%
Avg	3.80
SD	0.45
Median	4.00
Mode	4.00

The distribution of responses by expert category is summarized in Table 10. The table shows that the RN and the two NP agree that the proposed education module would help health care workers recognize and address patients with low literacy health. One physician chose *somewhat agree* and the other selected *agree* as answers to this question.

Table 10

Descriptive Statistics for Responses to Question 6 by Staff Category

	Disagree	Somewhat disagree	Somewhat agree	Agree	Total
NP				2	2
RN				1	1
MD			1	1	2
Total			1	4	5

Summary of Findings

In this section, I present descriptive statistics for the six questions included in the health care workers questionnaire. With the exception of Question 1, all respondents either *somewhat agreed* or *agreed* with the statements included in the questionnaire (Table 11).

Table 11

Summary of Descriptive Statistics for the Health Care Workers Questionnaire

	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
% "somewhat agree" and "agree"	60%	100%	100%	100%	100%	100%
Avg	3.00	3.00	4.00	3.60	3.20	3.80
SD	1.00	0.00	0.00	0.55	0.45	0.45
Median	3.00	3.00	4.00	4.00	3.00	4.00
Mode	4.00	3.00	4.00	4.00	3.00	4.00

The findings reveal that the highest level of agreement ($M = 4.00$) was obtained for the following statement: Health literacy level cannot be determined based on race and ethnicity, culture, age, or socioeconomic status. The lowest level of agreement ($M = 3.00$) was obtained for the following two statements: Individuals with high levels of education may or may not have limited health literacy and the average American reads at the 6th grade level. Overall, there was strong support for implementing the proposed education module, as four of the five experts agreed that it would help health care workers recognize and address patients with low health literacy.

Discussion of Findings in the Context of the Literature

The descriptive statistics for Question 1 indicate that only two of the five experts (40%) agreed that individuals with high levels of education may or may not have limited health literacy. The corollary of this finding is that health care workers surveyed in this study believe that patients with high levels of education have higher health literacy than patients with low levels of education. This finding is in agreement with other studies that have demonstrated a positive significant relationship between patient's highest education and health literacy. For instance, a 2006 the National Center for Education Statistic(NCES) study found that starting with adults who had graduated from high school or obtained a GED, average health literacy increased with each higher level of educational attainment (Kutner, Greenberg, Jin, & Paulsen, 2006). Forty-nine percent of adults who never attended or did not complete high school had below basic health literacy, compared with 15% of adults who ended their education with a high school diploma and 3% of adults with a bachelor's degree (Kutner et al., 2006). A higher percentage of adults who had not attended or completed high school had below basic health literacy than adults in any other educational group. These same adults were less likely than all other adults, except for those who had a GED or high school equivalency certificate, to have proficient health literacy.

The results for Question 2 indicated that all participants *somewhat agreed* that the average American reads at the 6th grade level. Similarly, a study of functional health literacy in adults conducted by Parker et al. (1995) found that a large percentage of those tested from both English speaking and Spanish speaking groups failed when asked to

perform basic reading tasks. The authors noted that 15% of the patients could not read and interpret a prescription bottle with instructions to take one pill by mouth 4 times daily, 37% did not understand instructions to take a medication on an empty stomach, and 48% could not determine whether they were eligible for free care (Parker et al., 1995).

The results associated with Question 3 indicate that all respondents agreed that health literacy level cannot be determined based on race or ethnicity, culture, age, or socioeconomic status. This finding contradicts the results of Kutner et al. (2006) who established that health literacy levels vary with race. Specifically, the authors found that the health literacy of white adults was higher than the average literacy of adults of other races or ethnicities. Adults 65 years of age and older had the lowest health literacy scores among all age groups. Fifty-eight percent of White, 52% of Asian/Pacific Islander, and 59% of multiracial adults had intermediate health literacy compared with 41% of Black adults and 31% of Hispanic adults. Conversely, higher percentages of Black and Hispanic adults than White, Asian/Pacific Islander, or multiracial adults had below basic health literacy. The percentages of Black, Hispanic, and multiracial adults with basic health literacy were higher than the percentages of White or Asian/Pacific Islander adults with basic health literacy (Kutner et al., 2006).

Adults living below the poverty level had an average health literacy score of 205, while adults living at the poverty level or up to 125% of the poverty level had an average health literacy score of 222. Both of these average literacy scores are in the basic health literacy level. Average health literacy was highest for adults who were above 175% of the

poverty threshold; in this group, average health literacy was in the intermediate range (Kutner et al., 2006).

Adults who spoke only English before starting school had higher average health literacy than adults who spoke only a language other than English before starting school. The average health literacy score of adults who spoke only English before starting school was at the intermediate level, as were the average health literacy scores of adults who spoke English and Spanish or English and another language. Adults who spoke only Spanish before starting school had the lowest average health literacy, equivalent to below basic health literacy (Kutner et al., 2006).

The findings related to Question #4 showed a high level of agreement among the experts that limited health literacy can cause minor health issues to become major concerns. Sixty percent of the respondents agreed and 40% somewhat agreed with this statement. This finding reinforces the results of Berkman et al. (2004) who investigated the effects of low literacy on health outcomes by assessing and re-assessing seven main medical information data sources from 1980 to 2003. Low literacy was shown to be associated with several adverse health outcomes, limited health knowledge, increased incidence of chronic illness, poorer intermediate disease markers, and less than optimal use of preventive health services. The authors concluded that those with poorer reading skills have greater difficulty navigating the health care system and are at risk of experiencing poorer health outcomes.

Related to Question #5, four of the five experts (80%) somewhat agreed that limited health literacy drains resources from patients, employers, and physicians. One of

the five experts (20%) agreed with this statement. Similarly, past studies have found that low health literacy has huge consequences on individuals, such as increased hospitalization, higher risks of mortality for seniors, lower utilization of preventive health care, and the inability to take medications properly. Additionally, it adds significant expenses to the health care system overall. Experts estimated that low health literacy costs the U.S. health care system upwards of $238 billion annually, and contributes significantly to the unnecessary use of medical services, preventable errors, and missed prevention opportunities. This represents between 7% and 17% of all personal health care expenditures, enough to insure about 47 million uninsured Americans. People with low health literacy are less able to care for their chronic conditions, use more health care services, visits, and longer stays, have higher mortality rates especially from cardiovascular disease, are more likely to engage in unsafe or inappropriate use of prescription or over-the-counter medications, are less likely to use preventive health services, and have difficulty navigating the health care system.

The results for Question #6 revealed that four of the five experts surveyed (80%) agreed that the proposed education module would help health care workers recognize and address patients with low health literacy accordingly in the future. In the proposed education module, the health care workers will be able to analyze and apply the material presented with the understanding of the many and varied literacy levels of adults. They will demonstrate the ability to judge, identify, and recognize when to apply laymen's terms. By the end of the presentation in the education module, the health care staff will be able to devise a plan to ensure patients' understanding.

The support the proposed training module received from the experts' survey responses can be attributed to the role-playing approach previously described. Indeed, the literature shows that despite the fact that health care providers assume that they are in a position to identify patients with limited health care literacy, these professionals fail to identify as many as half of the patients who struggle to understand health-related information. Patient behavior indicative of limited health care literacy includes missing appointments because of a failure to understand or follow directions, forgotten glasses that prevent patients from reading printed instructions, difficulty completing health forms, inability to describe and list the purpose of the medication prescribed, inability to question health care providers, and inability to follow relevant self-health care instructions (DeSilets & Dickerson, 2009).

Health care providers have a number of health care literacy tests that they can administer to assess their patients' health literacy, including the Rapid Estimation of Adult Literacy in Medicine (REALM), the Newest Vital Sign (TNVS), and the Test of Functional Health Literacy in Adults (TOFHLA). However, these tests usually take a long time to administer and score, which limits their usefulness in busy clinical settings. The proposed health literacy course will train health care workers to assess the level of health literacy among their patients without administering these lengthy tests.

Implications

Implications of this project include an impact on nursing practice and education, social change, and future research.

Implications for Practice

The outcomes of this project have significant implications for nursing practice and nursing education. Educating nurses on how to identify patients with low health literacy levels will help alleviate the effects of poor health literacy. In particular, mothers with low health literacy will be educated about the benefits of breastfeeding. Kaufman et al. (2001) noted that ignorance of the health benefits of breastfeeding was the primary motivating factor for women who chose to bottle-feed their babies. Therefore, if first-time mothers are educated to understand the benefits of breastfeeding, the health outcomes of their children will improve. Insights derived from this project can also be used in a larger context for guidance to health care providers, the community, and health care organizations in achieving a health-literate society.

Implications for Social Change

It is estimated that more than 36% of American adults have limited health literacy, and the limitation is higher in the elderly populations, minorities, and groups with low levels of education. Therefore, by educating health care professionals on how to identify and address patients with low health literacy, this project will assist disadvantaged groups and provided them with better information. Furthermore, health care workers will be in a position to better understand the health conditions of these groups.

Lack of or limited health literacy has a negative impact health care costs as well. Therefore, the proposed health literacy course provided to nurses and physicians has the potential to not only change the behaviors of first-time mothers, but also reduce the rates

of hospitalization and readmissions for their children, as more mothers begin to understand the health benefits of breastfeeding. Moreover, equipping nurses with necessary knowledge and skills needed to identify low health literacy will reduce the number of visits to emergency rooms.

Although the project will target nurses who work with first-time mothers, it can be replicated to cover the broader nursing profession. That is, the course could be adapted to improve health literacy among all nurses, regardless of their areas of specialization. The project's goal is to improve first time mothers' health literacy as realized through adequate training and education of nurses and physicians. In this context, first-time mothers will be in a position to obtain, process, and comprehend basic health information. Subsequently, they will be in a better position to make good decisions relating to their children' health. If the course is expanded to other nursing areas, it will help reduce readmission rates of patients who fail to follow medical procedures due to lack of proper patient education since nurses and physicians will be equipped with the necessary knowledge and information to communicate better with low literacy patients.

Implications for Future Research

As demographic shifts continue to affect the health literacy of first-time mothers, hospitals will continue to look for strategies and training modules that help physicians and nursing staff identify and address patients with low maternal health literacy. Since nurses and physicians will have to communicate with increasingly diverse populations, future research could aim to identify how demographic and cultural shifts for first-time mothers may impact the design of training modules.

Future studies should also incorporate qualitative methods such as focus groups and interviews with health care providers, pregnant women, and new mothers to investigate what first-time mothers are learning from existing classes and from their communication with nurses and physicians. A potentially valuable design would be an experiment that includes a control group with mothers who interacted with health care workers that did not participate in the heath literacy course and a treatment group with mothers who communicated with health care workers who participated in the course. Levels of health literacy could be measured via one of the existing health literacy tests (i.e., the Test of Functional Health Literacy in Adults) to determine if a significant difference in the health literacy scores exists between the two groups.

Recommendations

Poor health literacy levels among first-time mothers will likely continue to impact the health care system in the U.S. Therefore, efforts should be made to use innovative training for nurses and physicians in order to facilitate the identification of and communication with mothers who have low levels of maternal health literacy. Both Kaufman et al. (2001) and Kumar et al. (2010) noted that simply supplying information to low health literacy parents is not sufficient in itself to encourage behavioral changes since they lack the ability to correctly interpret it. This should be considered when designing an educational program for improvement of health literacy. Health educators need to develop new educational materials that are more easily accessible to low health literacy populations. This is particularly relevant for teenage mothers, since adolescents have less frequent interaction with the health care system. Based on the findings from

past research and the results of the survey conducted in this study, the researcher recommends that other clinical settings seriously consider the design and implementation of an evidenced-based health literacy course for their health care workers.

Strengths and Limitations of the Project

Project Strengths

The strengths of the current project derive from the value and the timeliness of the topic. Increasing the maternal health literacy of first-time mothers is extremely important. The design of a sound educational module (grounded in Knowles' theory of adult learning and Bloom's taxonomy) that can be used to educate nurses and improve their knowledge levels about assessing patient literacy will be useful for many health care professionals. It will be possible to assist mothers with inadequate health literacy, and improve the long-term health outcomes of their children. The project will also reduce hospital costs and diseases among the children of mothers with inadequate maternal health literacy.

An additional strength associated with the project was the analysis of an extensive collection of research studies that provided a solid foundation for the development of the survey and the design of the course. For instance, through past research studies, it was possible to establish that first-time mothers have limited health literacy and that there is a gap in health status that needs to be addressed. Moreover, the literature revealed that health literacy is not limited to one group of individuals, one economic group, or an educational group.

Finally, the survey results demonstrate that the proposed education module has been supported by a panel of experts in maternal health literacy. The choice of experts with experience and knowledge related to maternal health literacy is a strength because it has assisted the project developer in the design of the proposed course. In addition, through the use of experts it was possible to provide information and recommendations that can be used to appropriately address health literacy among first time mothers.

Project Limitations

The limitations of this study include a limited number of participants, limited effectiveness of similar programs, and the lack of a common definition for health literacy. The first limitation of this project concerns the small number of participants. The panel of experts surveyed included only five individuals. Additionally, only one clinical setting was used as the information source. Therefore, the project findings cannot be generalized to other hospitals or clinical settings. A more robust sample size, with the ability to include experts from multiple clinical settings, may have better supported the generalizability of findings.

Second, even the best health care professionals cannot always affect a population of low literacy patients to the degree they would like. Despite advances in health literacy programs based on communication and education, Nutbeam (2006) noted that such programs have mostly failed to achieve substantial results and have made little impact on closing the gap in health status among different social and economic groups in society. Based on past history of similar education programs, the proposed health literacy course is likely to have limited effectiveness.

Third, researchers have failed to gain consensus on the definition of health literacy and how it should be measured (Egbert & Nanna, 2009). This project used the IOM definition. However, Nutbeam (2006) pointed to limitations associated with this definition, because health literacy is only a product of listening, reading, and understanding so social factors may also play an important role in improving a patient's ability to deal with the health care system. In addition, Baker (2006) concluded that it is not clear whether it is possible to develop an accurate test that will identify individuals with limited health literacy. Despite these limitations, this study has provided insight into best practices for education nurses on health literacy of their patients.

Analysis of Self

Self-analysis is a much need reflective process that allows an individual to assess their personal experience in order to evaluate what one has achieved and develop the next steps for personal growth and professional development. Researching the literature on low maternal health literacy and its impact on the design of training for health care workers to improve the health literacy of first-time mothers has been extremely beneficial. For instance, the literature review helped improved my understanding of what factors are associated with low health literacy and their impact on health care costs. Through the literature review, I learned that low health literacy is not an isolated problem that affects illiterate communities only. Trained health care professionals may also have deficiencies in understanding and communicating with patients. I have also learned that it is important for health care workers to be able to identify patients who lack understanding of health information. In particular, through a course in health literacy, nurses and

physicians can make the importance of breastfeeding more understandable and create new approaches to disseminating information for first time mothers with low literacy.

This project has also enhanced my knowledge of project development and evaluation methods, which will enable me to be an effective project developer, practitioner, and nursing scholar. For instance, completing this project has taught me the steps that are necessary in developing an education intervention aimed at increasing patients' health literacy. At the same time, the project has taught me how to incorporate critical elements from Knowles' theory of adult learning and how to combine both instructor- and learner-centered approaches that address all the domains in Bloom's Taxonomy in the design of a health literacy course.

Conclusions

Just 12% of adults have proficient health literacy, according to the National Assessment of Adult Literacy. In other words, nearly 9 out of 10 adults, over 91 million Americans, may lack the skills needed to manage their health and prevent disease. About 14% of adults (30 million people) have below basic health literacy. These adults are more likely to report their health as poor (42%) than adults with proficient health literacy. Low literacy has been linked to poor health outcomes such as higher rates of hospitalization and less frequent use of preventive services. Both of these outcomes are associated with significantly higher health care costs.

This project documented how a health literacy course can contribute to a reduction of the communication gap between health care workers and a special group of low literacy patients, first-time mothers. Patients with low health literacy may have less

familiarity with medical concepts and vocabulary and ask fewer questions (Kripalani & Weiss, 2006). Through pedagogical methods that are grounded in Knowles' theory of adult learning, the proposed health literacy course can provide much needed information to nurses and physicians while ultimately leading to an increase in breastfeeding amongst first-time mothers and improved health outcomes for their children.

Section 5: Scholarly Product for Dissemination

The American Association for Colleges of Nursing (AACN, 2006) noted that, in order to improve health care outcomes, it is important that health care professionals widely disseminate the findings of their evidence-based practice and research. Specifically, AACN recommends that project results be reported to project stakeholders, the academic community, and other professionals in similar settings. Dissemination of the results for the current project may prove beneficial to other health care settings that face the same problem, low levels of maternal health literacy among the populations they serve. Dissemination of the project results is important, especially in those areas that have high percentages of teenage mothers, since this group has fewer interactions with the health care system. The results of the project can be used to educate physicians and staff nurses to improve nursing knowledge of patient education. In this section, I discuss proposed methods for disseminating the information and results of the current project.

Dissemination Through Publications

The primary method for disseminating the project results will be through peer-reviewed publications. While there are many publication outlets to be considered, the *Online Journal in Nursing*, a scholarly journal published by the American Nurses Association, is the most appropriate for disseminating the findings of this study since it is a peer-reviewed online publication that addresses a wide range of current topics affecting nursing practice, education, and research. The large audience of the journal can lead to widespread discussion of the topic, developing the field of nursing and improving nursing knowledge about ways to increase maternal health literacy.

Given that the project has a strong educational component, the second type of publication outlet to be considered is a nursing education journal. Such a publication is appropriate since it can be an effective channel for reaching out to nursing educators and administrators who can use the results and the literature reviewed in this study to develop similar health literacy programs in their organizations aimed at increasing maternal health literacy among first-time mothers.

Dissemination Through Presentations

Oral presentations can include poster sessions, presentations, or lectures and can be specific to certain population groups. There are multiple opportunities for presenting this project at local, state, and national conferences. For instance, at the national level, results can be presented at the American Nurses Association conference, which is organized by the largest association of nurses. At the local level, I can present the findings to the nursing staff at hospitals in the local area.

Summary

For most infants with healthy mothers, breastfeeding leads to better health outcomes overall and is widely considered to be superior to bottle feeding. While investigating the reasons mothers would raise children on formula, Kaufman et al. (2001) discovered that ignorance of the health benefits of breastfeeding was the primary motivating factor for women who chose to bottle-feed their babies. Through the perceptions of nurses and physicians surveyed, the current project established that limited health literacy among first-time mothers affects the quality of health care provided, which subsequently significantly affects infants' health in a negative way. In the long run, the

children of mothers who have low health literacy are more likely to visit emergency rooms and have higher rates of hospitalization.

First-time mothers' health literacy is necessary in order to increase understanding of the benefits of breastfeeding (improved infants' resistance to diseases, healthier physical and neural development, and strengthened emotional bonds between mother and child) and switch from bottle-feeding. To increase the number of breastfeeding mothers, it is important to train and educate health care workers on ways to identify low health literacy and increase the maternal health literacy of their patients.

Health care workers do not have the appropriate training to be able to identify and communicate effectively with first-time mothers who have limited maternal health literacy. To address this gap, I designed a course in health literacy for health care workers. This course includes all members of the health care team directly involved with first-time mothers and uses methods that are grounded in Knowles's theory of adult learning: the use of plain language free from medical jargon, role-playing and face-to-face sessions with the patients, the use of simple diagrams or pictograms to illustrate explanations, and educational materials geared to low-health literacy patients.
This course would make it possible for nurses and physicians to accumulate practical skills and knowledge required for educating first-time mothers about the benefits of breastfeeding. The use of proven educational methods to increase health literacy in patients and the commitment to train health care workers to address it in practice will go a long way toward improving health status and maintaining optimal health.

References

Aguirre, A. C., Ebrahim, N., & Shea, J. A. (2005). Performance of the English and Spanish S-TOFHLA among publicly insured Medicaid and Medicare patients. *Patient Education & Counseling, 56*(3), 332-339.

Allen, J., & Hector, D. (2005). *New South Wales Public Health Bulletin, 16*(4), 42-46.

Almader-Douglas, D. (2013). Health literacy. Retrieved from http://nnlm.gov/outreach/consumer/hlthlit.html

American Association of Colleges of Nursing. (2006). The essentials of doctoral education for advanced nursing practice. Retrieved from http://www.aacn.nche.edu/dnp/Essentials.pdf

Baker, D. W. (2006). The meaning and the measure of health literacy. *Journal of General Internal Medicine, 21*(8), 878–883. doi: 10.1111/j.1525-1497.2006.00540.x

Berkman, N., Davis, T., & McCormick, L. (2010). Health literacy: What is it? *Journal of Health Community, 15*, 9-19. doi:10.1080/10810730.2010.499985

Berkman, N. D., DeWalt, D. A., Pignone, M. P., Sheridan, S. L., Lohr, K. N., Sutton, S.… Bonito, A. J. (2004). Literacy and health outcomes: Evidence report/technology assessment, no. 87. Retrieved from http://www.chpcp.org/servicecoord/chronicdisease/HealthLit/Berkman%20et%20al,%202004.pdf

Center for Disease Control and Prevention. (2014). Determinates. Retrieved from http://www.cdc.gov/socialdeterminants/

Cooper, L. (2011). Health literacy and health disparities: Opportunities for trans-disciplinary collaboration. Report from *First Annual Research on Health Literacy Conference*, 1-110.

Department of Health and Human Services: Office of Disease Prevention and Heath Promotion. (2011). Health literacy. Retrieved from http://www.health.gov/communication/literacy/

DeSilets, L. D., & Dickerson, P. S. (2009). Filling gaps in knowledge: Educating nurses to provide appropriate patient materials. *Journal of Continuing Education in Nursing, 40*(4), 148-149.

Dewalt & Hink (2009). Health Literacy and Child Health Outcomes: A Systematic Review of the Literature. PEDIATRICS, 124(Supplement), S265–S274. doi:10.1542/peds.2009-1162b

Egbert, N., & Nanna, K. (2009). Health literacy: Challenges and strategies.OJIN: *Online Journal of Issues in Nursing, 14*(3), Manuscript 1. doi: 10.3912/OJIN.Vol14No03Man01.

Healthy People 2020. (2011). Secretary's Advisory Committee on National HealthPromotion and Disease Prevention Objectives for 2020. Retrieved fromhttps://www.healthypeople.gov/2020/agenda-twentieth-meeting-june-30-2011

Kaplan Jacobs, S., Rosenfeld, P., & Haber, J. (2003). Information literacy as the foundation for evidence-based practice in graduate nursing education: a

curriculum-integrated approach. Journal of Professional Nursing, 19(5), 320–328. doi:10.1016/s8755-7223(03)00097-8

Jorm, A. F. (2000). Mental health literacy: Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry, 177*, 396-401.

Kaufman, H., Skipper, B., Small, L., Terry, T., & McGrew, M. (2001). Effect of literacy on breastfeeding outcomes. *Southern Medical Journal, 94*(3), 293-296. doi:10.1097/00007611-200194030-00005

Kripalani, S., & Weiss, B. D. (2006). Teaching about health literacy and clear communication. *Journal of General Internal Medicine, 21*(8), 888–890. doi:10.1111/j.1525-1497.2006.00543.x

Kumar, B. A., Sanders, L., Perrin, E. M., Lokker, N., Patterson, B., Gunn, V., …Rothman, R. (2010). Parental understanding of infanthealth information: Health literacy, numeracy and the parental health literacyactivities test (PHLAT). *Academic Pediatrics, 10*(5). doi:10.1016/j.acap.2010.06.007

Kutner, M., Greenberg, E., Jin, Y., & Paulsen, C. (2006). The health literacy of America's adults: Results from the 2003 national assessment of adult literacy(NCES 2006-483). *U.S. Department of Education*. Washington, DC: NationalCenter for Education Statistics.

Manganello, J. A. (2007). Health literacy and adolescents: a framework and agenda for future research. Health Education Research, 23(5), 840–847. doi:10.1093/her/cym069

Martin, C. M. (2007). Chronic disease and illness care: Adding principles of familymedicine to address ongoing health system redesign. *Canadian Family Physician, 53*(12), 2086–2091.

Merriam Webster Dictionary. (2015). Educator. Retrieved from http://www.merriam-webster.com/dictionary/educator

National Network of Libraries of Medicine. (2011). Health literacy. Retrieved from http://nnlm.gov/outreach/consumer/hlthlit.html

Nutbeam, D. (2006). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International, 15*(3), 259-269. doi:10.1093/heapro/15.3.259

Oxford Dictionary. (2015). Ethnicity. Retrieved from http://www.oxforddictionaries.com/us/definition/american_english/ethnicity

Parker, R. M., Baker, D. W., Williams, M. V., & Nurss, J. R. The test of functional health literacy in adults. *Journal of General Internal Medicine, 10*(10), 537-541. doi:10.1007/bf02640361

Renkert, S., & Nutbeam, D. (2001). Opportunities to improve maternal health literacy through antenatal education. *Health Promotion International, 16*(4), 380-388. doi:10.1093/heapro/16.4.381

Rochester Institute of Technology. (2011). Adult learning. Retrieved fromhttp://online.rit.edu/faculty/teaching_strategies/adult_learners.cfm

Sanders, L. M., Shaw, J. S., Guez, G., Bauer, C., & Rudd, R. (2009). Health literacy and child health promotion: Implications for research, clinical care and public policy. *Pediatrics, 124*(3). doi: 10.1542/peds.2009-1162G

Singleton, K., & Krause, E. (2009). Understanding cultural and linguistic barriers to health literacy. *Online Journal of Issues in Nursing, 14*(3). Retrieved from http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/ OJIN/TableofContents/Vol142009/No3Sept09/Cultural-and-Linguistic-Barriers-.html

Sørensen, K., Broucke, S. V., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H. (2012). BMC. *Public Health, 12*(80). doi:10.1186/1471-2458-12-80.

Surgeon General's Call to Action to Support Breastfeeding. (2011). Barriers to breastfeeding in the United States. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK52688/

Tools for cross-cultural communication and language access. (2015). *CDC*. Retrieved from http://www.cdc.gov/healthliteracy/culture.html

U.S. Department of Health and Human Services Centers for Disease Control and Prevention. (2011). Introduction to program evaluation for public health programs: A self-study guide. Atlanta, GA: Centers for Disease Control and Prevention.

Welsh, S., Hassiodis, A., O'Mahoney, G., & Deahl, M. (2003). Big brother is watching you: The ethical implications of electronic surveillance measures in the elderly with dementia and in adults with learning difficulties. *Aging and Mental Health, 7*(5), 372-375. doi:10.1080/1360786031000150658

Wolf, M. S., Gazmararian, J. A., & Baker, D. W. (2005). Health literacy and functional health status among older adults. Arch Internal Medicine, *165*, 1946-1952.

Appendix A: Letter of Cooperation

Letter of Cooperation

[redacted]
Address: [redacted]
Phone: [redacted]

January 10, 2016

Dear Shevon Howard,

Based on my review of your research proposal, I give permission for you to conduct the study entitled HEALTH LITERACY PROGRAM PROPOSAL FOR HEALTH CARE WORKERS

As part of this study, I authorize you to send questionnaires to the emails of the participants. Individuals' participation will be voluntary and at their own discretion.

We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,
Annie Cruz MD

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

Appendix B: Email Invitation to Participate

Dear Local Experts,

My name is Shevon Howard. You may already know me as one of the students who have done clinical rotations in the past at your clinic. I am currently a doctoral student at Walden University, and I am trying to capture your thoughts and perspectives on health care literacy course for health care workers.

There is no compensation for participating in this project, however your participation would a valuable to the proposed project.

Walden University does not sponsor the study and I would greatly appreciate your participation. Participation will require the revision of the proposed curriculum and completion of a brief questionnaire that will be emailed to you. The questionnaire will take 5-10 minutes of your time. The information from the questionnaire will be kept strictly confidential and no one who participates will be identified in any of the project's report that I prepare.

If you have any questions about the project please feel free to email me at [redacted] or give me a call at [redacted]. If you are interested in participating in the study, let me know by email, and I will send you full instructions and a Consent form.
Thank you in advance for your consideration and assistance with my research project.

Sincerely,

Shevon Howard RN, MSN

Shevon Howard

[redacted]

[redacted]

If you are interested in participating in the project, reply email to me at

[redacted] Instrument (5 items), which will take approximately 5 to

10 minutes.

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Appendix C: Consent Form

CONSENT FORM

My name is Shevon Howard. You may already know me as one of the students who have done clinical rotations in the past at your clinic. I am currently a doctoral student at Walden University, and I am trying to capture your thoughts and perspectives on health care literacy course for health care workers.

You are invited to take part in a research project exploring the best way to solicit and convey information to help patients maintain optimal health. The researcher is inviting local experts who are between the ages of 21-64, and that are involved directly with patients to participate in the project. This form is part of a process called "informed consent" to allow you to understand this project before deciding whether to take part.

A researcher named Shevon Howard who is a doctoral student at Walden University is conducting this project.

Background Information:

The purpose of this project is evaluating a proposed educational module to increase health literacy in patients through the use of effective communication and methods by health care workers to increase health literacy.

Procedures:

If you agree to be in this project, you will be asked to:
Complete a 5-7 minute questionnaire and return the questionnaire via email.
Here is a sample question

Health literacy level cannot be determined based on race or ethnicity, culture, age, or socioeconomic status.
(1) Agree
(2) Somewhat Agree
(3) Agree
(4) Disagree

Voluntary Nature of the Project:

This project is voluntary. Everyone will respect your decision of whether or not you choose to be in the project. No one at Walden University will treat you differently if you decide not to be in the project. If you decide to join the project now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Project:

A potential benefit of participating in this project is your contribution to help improve health outcomes and help patients maintain optimal health. Participants understand that their emails can be identifiers and are minimal risk.

Payment:

After completion of your paper questionnaire no payment will be rendered.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your

personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the project reports. Data will be kept on my password secured computer locked in my personal office at my residence. Participants will be provided a copy for their records. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email: [redacted]. If you want to talk privately about your rights as a participant, you can call [redacted]. She is the Walden University representative who can discuss this with you. Her phone number is [redacted]. Walden University's approval number for this project is 03-02-16-0487329 and it expires on March 1, 2017.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I understand participation will require the revision of the proposed curriculum and completion of a brief questionnaire that will be emailed to you. By signing below "I consent", I understand that I am agreeing to the terms described above.

Printed Name of Participant _____

Date of consent _____

Participant's Signature _____

Researcher's Signature _____

This has been approved by the Institutional Review Board of as acceptable documentation of the informed consent process and is valid for one year after the stamped date.

2016.03.02 18:19:29 -06'00'

Appendix D: Proposed Curriculum Outline

Outcome objective:

Staff will be able to analyze and apply the material presented with the understanding of the many literacy levels of adults. Staff will demonstrate the ability to a judge, identify, and recognize when to apply laymen's terms. By the end of the presentation staff will be able to devise a plan to ensure patients understanding.

Learner Goals/Outcomes	**Content Outline**	**Method of Instruction**	**Time Frame**	**Resources**	**Method of Evaluation**
This will allow the learners to meet and greet also gives the learner at some point to think about the topic	Pre-test discussion	Opening activities	20 minutes	Pre-test	open forum about the topic
The use Laymen's terminology Understand the importance of health literacy	PowerPoint Review handouts, journals, articles Word games Assessment	Lecture	60 minutes	Power points Handouts Research articles Medical journals Word games	Quizzes Test
Recognize when a patient may not understand what is being said	Return demonstrations	Activities	30-40 minutes	Video	Role playing and return demonstrations Observation
Recollection	Students recall what was learned	Debriefing	30 minutes		Discussion
Break		Allow learners to have a few minutes to regroup	15 minutes		

Conclusion	Questions and answers	Discussion	30 minutes	Questions and answer sessions Post- test	Short questionnaire Post- test
Evaluation of class			No time limit	Individual assessment of the class	Anonymous survey

Appendix E: Questionnaire

Health Care Workers Questionnaire
Health Literacy Assessment for Health Care Workers Questionnaire

Circle one MD NP RN MA

Individuals with high levels of education may or may not have limited health literacy.

(1) Agree (2) Somewhat Agree (3) Agree (4) Disagree

The average American reads at the 6th grade level.

(1) Agree (2) Somewhat Agree (3) Agree (4) Disagree

Health literacy level cannot be determined based on race or ethnicity, culture, age, or socioeconomic status.

(1) Agree (2) Somewhat Agree (3) Agree (4) Disagree

4. Limited health literacy can cause minor health issues to become major concerns.

(1) Agree (2) Somewhat Agree (3) Agree (4) Disagree

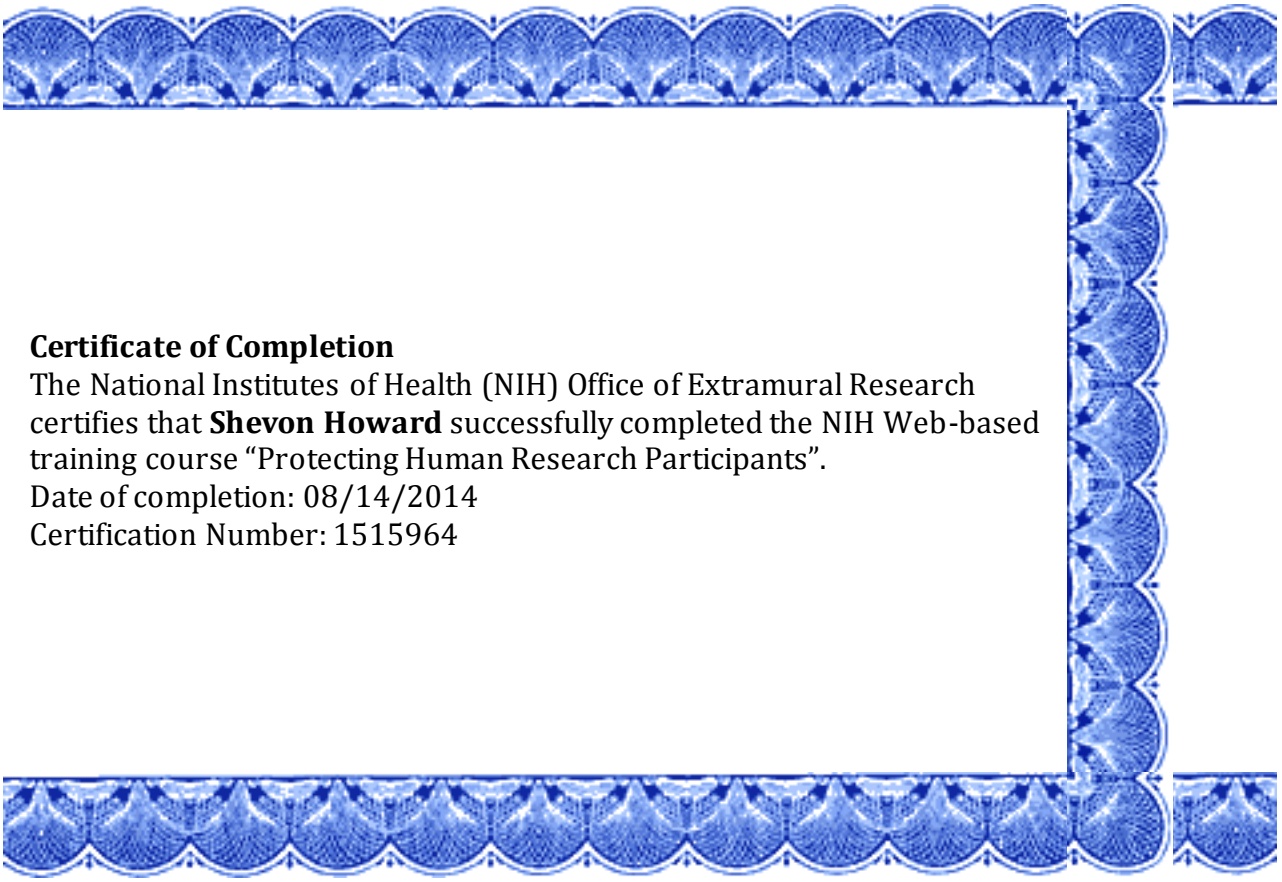
5. Limited literacy drains resources from patients, employers, and physicians.

Agree (2) Somewhat Agree (3) Agree (4) Disagree

6. Do you believe the proposed education module would help health care worker recognize and address patients with low health literacy accordingly in the future?

(1) Agree (2) Somewhat Agree (3) Agree (4) Disagree

Appendix F: NIH Certificate



Certificate of Completion
The National Institutes of Health (NIH) Office of Extramural Research certifies that **Shevon Howard** successfully completed the NIH Web-based training course "Protecting Human Research Participants".
Date of completion: 08/14/2014
Certification Number: 1515964

Appendix G: Permission to Use Conceptual Model

The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

[redacted]

Fwd: Permission

1 message

Shevon Howard [redacted] Fri, Jul 29, 2016 at 3:39 PM

---------- Forwarded message ----------
From: **Shevon** <[redacted]>
Date: Fri, May 20, 2016 at 4:18 AM
Subject: Fwd: Permission
To: Shevon Howard [redacted]

"Without struggle there is no success"

Begin forwarded message:

From: "Baker, David" [redacted]>
Date: May 14, 2016 at 5:38:01 PM EDT
To: Shevon <[redacted] >
Subject: RE: Permission

That is fine.
Good luck.

David W. Baker, MD, MPH, FACP
Executive Vice President
Healthcare Quality Evaluation
[redacted]elephone
[redacted]

-----Original Message-----
From: Shevon [redacted]
Sent: Saturday, May 14, 2016 2:48 AM
To: Baker, David <[redacted]
Subject: Permission

Hello my name is Shevon Howard I am emailing you because I am a doctoral student and I am writing a proposal on health literacy with your permission I would like to use your conceptual model in my proposal. I may be reached at this email address thanks! I look forward to hearing from you.

"Without struggle there is no success"

Appendix: H Permission to Use Integrated Model of Health Literacy

The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

[redacted]

Fwd: Integrated model of health literacy

1 message

Shevon Howard <[redacted]> Fri, Jul 29, 2016 at 3:42 PM

[redacted]

---------- Forwarded message ----------
From: **Shevon** <[redacted]>
Date: Fri, May 20, 2016 at 4:01 AM
Subject: Fwd: Integrated model of health literacy
To: Shevon Howard <[redacted]>

"Without struggle there is no success"

Begin forwarded message:

From: Kristine Sørensen <[redacted]>
Date: May 20, 2016 at 2:43:28 AM EDT
To: Shevon <[redacted]>
Subject: Re: Integrated model of health literacy

Dear Shevon
You are welcome to use the model for your teaching. Success.
Best regards
Kristine Sorensen

Global Health Literacy Academy

On 20 mei 2016, at 01:41, Shevon <[redacted]> wrote:

Hello my name is Shevon Howard I wrote you a few days ago requesting your permission to use your model in my proposal I am just checking to see if you received my emaiL about my proposal and if you will grant me permission to use your model thanks. I look forward to hearing from you.

"Without struggle there is no success"

On May 14, 2016, at 4:34 AM, Kristine Sørensen <[redacted]> wrote:

Dear Shevon Howard

Thank you for your email And your interest in Health Literacy. Can you tell me more about what and where you are studying?

Best regards

Kristine Sørensen

Global Health Literacy Academy

On 14 mei 2016, at 08:50, Shevon Howard <[redacted]> wrote:

Hello my name is Shevon Howard I am not sure if I am in the right place but if I am emailing you because

I am a doctoral student and I am writing a proposal on health literacy with your permission I would like to use your Intergrated model of health literacy in my proposal. I may be reached at this email address thanks in advance I look forward to hearing from you.