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# An Evaluation of Physician-to-Patient Communication Training in Medical Schools across the United States: A Status Report on the Nation's Efforts to Promote Health Literacy by Adding Health Literacy Courses to Medical School Curriculum

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

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School of Education

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| Dr. Lynda Leavitt, Dissertation Chair | 12/7/2012 Date |
| Dr. Sherrie Wisdom, Committee Member | 12-7-2012 Date |
| Dr. Susan Isenberg, Committee Member | 12-7-2012 Date |
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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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## Abstract

This research study employed a mixed method sequential approach and investigated the number of Schools of Medicine within the United States that offer health literacy as a component of their curriculum and a course of study within the academic setting. Data were gathered from medical school surveys and personal interviews. Curriculum content, learning objective, subject matter sequence, assessment, course schedule, and other relevant elements were evaluated as comparison components of the data collected from these two methods. This study focused solely on 71 of the 154 Schools of Medicine in the United States, inclusive of 126 of those awarding a Doctor of Medicine degree and 28 which offer a Doctor of Osteopathic Medicine degree. The study evaluated the status of the nation's effort to promote health literacy by adding courses in health literacy to medical school curriculum.

Surveys indicated evidence of a health literacy component in medical school curriculum, that the promotion of health literacy curriculum was being introduced to medical students during the first year of training, and a requirement for medical students years one through four, data revealed health literacy as a major concern within the U.S., and that both students and administrators were aware of the importance of the promotion of health literacy within medical school training. Use of telephonic interview for the qualitative portion of this research was employed to obtain factual information and to pursue in-depth information regarding the integration of health literacy curriculum in medical school training. Results from this segment of the research interview were used to facilitate both comparison and analysis points. Positive responses for this segment supported the findings of the descriptive quantitative results, yielding similar responses.

Medical schools, or other health care training institutes considering implementing or expanding their curriculum, would benefit from this research in their efforts to address health literacy concerns.

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# Chapter One: Introduction

When reports focusing on health literacy were released in 1999 (Rudd, Moeykens, & Colton, 1999), it spurred a spirit of urgency to address the state of health literacy in our nation. Subsequently, health care leaders, in conjunction with a variety of resources, have been attempting to indicate how incremental health literacy gains have been reached. These attempts to indicate gains in health literacy have been diverse in nature. However, the focus of health literacy has been directed toward physicians already in practice, not on those who are in medical school, training to be physicians. It appears that research has centered primarily on the strategies and overall findings of already established physician practices or health care settings within a hospital, or for a group of patients who have a particular diagnosis. Assessment of how physicians are trained to address health literacy has not been the concern of previous research. Therefore, the potential to address health literacy concerns during the training of the physicians of the future requires further analysis. As a result, this researcher will focus on how many schools have health literacy curriculum, the components of health literacy curriculum currently in place, and at what stage of training the curriculum is introduced into the student education process.

## Background of the Problem

The current status of health literacy is not improving. Illiteracy rates have been growing in unprecedented numbers, as supported by the research findings from the 2003 National Assessment of Adult Literacy (NAAL) which indicates there has been little improvement of adult skills from the first national survey of adult literacy skills in 1992 (Rudd, 2007). The term *health literacy* was first introduced in 1974 in a paper entitled,

“Health Education as a Social Policy,” which called for minimum health education standards for all grade school levels in the United States (Simonds, 1974). The National Adult Literacy Survey found that 44 million Americans, or about one-fourth of the adult population, were functionally illiterate (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). This survey provided the most accurate and detailed portrait ever available of the condition of health literacy in the United States (Parker, 2002). However, widespread attention to the concept did not emerge until the publication of the 2003 NAAL (Rudd, 2007). Secondary studies regarding health literacy were spurred by the American Medical Association, which revealed that more than one-third of American adults, some 89 million people, lacked sufficient health literacy skills (Weiss, 2007). Ratzan and Parker (2000) defined health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (p. 2). The researcher believes it is important to distinguish health literacy from health education; health literacy is the goal whereas health education is one tool for reaching that goal. Similarly, the white paper titled, “Eradicating Low Health Literacy: The First Public Health Movement of the 21st Century,” noted that the terms "health literacy" and "literacy" should not be freely interchanged (Partnership for Clear Health Communication Steering Committee, 2003). Health literacy encompasses more than just the ability to read written materials; it also means understanding the information so that a person can take an active role in managing his or her health (Partnership for Clear Health Communication Steering Committee, 2003).

According to the Agency for Healthcare Research and Quality (2007), a person's health literacy is influenced by a number of factors, including basic literacy skills, the communication skills of health professionals, and the situations one encounters in the health care system. They also stress that these issues affect how a person finds a doctor, reads instructions for medicine, or takes other health-related action; to take such action, people often need a realistic understanding of health and disease. They further mention that people with low health literacy skills often lack such knowledge. Additionally, some patients can read and write; however, they may not be able to process or fully comprehend health care instruction or other related health care information (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). Therefore, the researcher concludes that health literacy appears to be directly associated to reading level information and other interrelated issues which inhibit the patient from making proper healthcare decisions and maintaining optimal health status. This connection is supported by the results of the 2003 NAAL, in which data suggested that more than one-third of American adults lack sufficient health literacy and the ability to read and understand virtually all text and numerical information (Rudd, 2007). This in itself becomes problematic, in the researcher's experience, patients who lack such skills may not be able to effectively undertake and execute necessary medical treatment and preventive health care. In a report by the Institute of Medicine, health literacy included the ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions and follow instructions for treatment (Nielson-Bohlman, Panzer, & Kindig, 2004). Safeer, Cooke, and Keenan (2006) add that health literacy also means the ability to self-manage health by

understanding what it takes to be healthy and disease free (e.g., nutrition, sleep health, avoiding risky behaviors like smoking, being of normal weight, having a normal blood pressure).

Likewise, nonhealthcare professionals can become health literate through self-teaching using health education materials from the Internet, health care institutions, and the library, which are carefully written in layman terms using easy-to-understand words, visual aids, and diagrams (Pierce, 2010). However, when nonhealthcare professionals (even those who are self-taught health literate) seek physician care, there is often a breakdown in physician-to-physician and physician-to-patient communication due to the physician's lack of training in how to communicate medical information (Shannon, 2012). The researcher believes that patients have the right to know about matters that affect their health such as medical conditions or diseases, treatments and their potential benefits and risks, lifestyle effects on health, medications, and so forth, so that they can participate fully in the management of their own health and make decisions based on understanding. Further, medical care is the healing relationship between physician and the patient, not the office visit, with effective communication defined as a relationship that reflects accurate understanding (Berwick, 2002).

Moreover, an adverse health outcome of low health literacy translates into increased costs for the health care system. In a study of 3,260 Medicare enrollees in sites around the country, Weiss and Palmer (2004) found higher costs for emergency department and inpatient care for people with limited health literacy. In this study, the average annual healthcare cost for all Medicaid enrollees in one state was $2,891 per enrollee; but, the annual cost for enrollees with limited literacy skills averaged $10,688

(Weiss & Palmer, 2004). A report by the Institute of Medicine (2004), noted that the average health care system spent an average of $993 every year in excess hospitalization expense for every patient with inadequate health literacy; this illiteracy accounts for tens of billions of dollars in annual health care costs (Neilson-Bohlman et al., 2004). This researcher believes an argument can clearly be made that health literacy education does not cost, it pays.

According to a review of 3,442 clinical decisions, which were made during 1,057 physician-patient encounters, only 9% of these situations met criteria outlining informed consent (as cited by the Center for Health Care Strategies, 2012). These, and other forms of poor communication between patients and clinicians, is noted as a major factor in malpractice lawsuits. According to well documented cases, attorneys approximated that a clinician's communication style and attitude are major factors in nearly 75% of malpractice suits (Beckman, Markakis, Suchman, & Frankel, 1994). The most frequently identified communication errors are an inadequate explanation of diagnosis or treatment and communicating in such a way that patients feel their concern has been ignored (Vincent, Young, & Phillips, 1994).

Evidence-based recommendations for practice guidelines on how clinicians can communicate with patients are meant to promote interaction and effective communication with cancer patients (Rodin et al., 2009). Subsequent doctor-patient communication principles and practices are shared by Kurtz (2002). Observation guidelines, noted by Kurtz aimed to aid in defining the curriculum and organize the teaching of communication in training programs, originated as early as 1996, in Canada. Stewart et al. (1999) addressed what is termed as patient-centered medicine and concentrated on

transforming clinical methods. Additionally, the American Medical Association, in conjunction with the American Medical Association Foundation, through the use of research grants, has worked to provide health literacy educational tool kits to bring awareness to practicing physicians (Weiss, 2007). The efforts of the aforementioned, along with those dedicated to the nation's literacy include but are not limited to the National Institute for Literacy (Literacy Information and Communication System, n.d.), the Partnership for Clear Health Communication (Partnership for Clear Health Communication Steering Committee, 2003), the Pfizer (2012) Health Literacy Initiative, and Reach Out and Read (n.d). In the researcher's opinion, based on a review of these organizations, all of the entities address the need for best practices to be undertaken by those in practice and to be introduced to those training in the area of healthcare through their initiatives.

**Purpose of the Study**

The purpose of this study was to investigate how many of the Schools of Medicine within the United States offered health literacy as a component of their curriculum within a course of academic study. This study also examined the environment of Medical School curriculum, inclusive of the format and course content of Health Literacy, to ensure learners have the literacy skills and cultural information necessary to assess care instruction and healthcare outcomes. The researcher believes through student knowledge of health literacy concepts and the ability to apply this knowledge in a clinical setting that the barriers of miscommunication will be removed, thus leading to better, safer, and more effective care.

This study assessed the presence of patient health literacy curriculum (as measured by survey data); and, if present, the elements of the curriculum, the curriculum's impact on medical students' ability to promote health literacy among their patients (as measured by the perceptions of administrators of medical school curricula), conduct an assessment of the medical schools' curriculum available through the school's website, and analyze data for discrepancies. The current standards of evaluation set forth by best practices of the American Medical Association (The American Medical Association, 1999) were used to conduct this research.

Improving health literacy is a strategy for improving health and healthcare in America; it is both a process and an outcome. Creating a truly health literate America is a challenge requiring leadership, strategy, and cooperation (Parker, Ratzen & Lurie, 2003). An effort to make health literacy a component of training of health care professionals is imperative (Weiss, 2007). This study contributed to that effort through documenting the current state of integration of health literacy promotion in medical education in the U.S., or lack thereof. Awareness of, and assessment of, health literacy should be part of physician training and health system culture, thus embracing a culture that assists in eliminating health disparities (American Medical Association, 1999). This goal may not be easy, but the researcher believes it is the right goal for health policy and healthcare delivery in the United States, and for both the training programs and medical students in the 21st century.

Approximately 154 Schools of Medicine throughout the United States were queried by the principle investigator of this study. This inquiry encompassed 126 Schools that offered Doctor of Medicine Degrees and 28 that offered Doctor of

Osteopathic Medicine Degrees. Although Puerto Rico is a Commonwealth of the United States, and possesses four Schools of Medicine, they were not included in this research; this exclusion was due to the demographic segmentation defined by the U.S. Census Bureau (2010), which does not include state, regional, and divisional elements for stratification of the findings.

A variety of methods were implemented to obtain and assemble data for this study. A multidiscipline approach allowed for the exploration of the existing curriculum within the Schools of Medicine across the United States as well as any proposed changes and implementation plans. Questions were answered from an on-line survey tool, individual interview sessions were conducted, and the researcher performed an on-line comparison of medical school curriculum.

**Research Questions**

This study explored core inquiry questions which served as the overarching areas of focus. These core areas of inquiry are as follows:

RQ1: What is the status of the nation's effort to promote health literacy by adding courses in health literacy to medical school curriculum?

RQ1a: Do medical schools align their health literacy courses with the components [factors] of best practice in health literacy as set forth by The Council on Medical Education (CME)?

RQ1b: How are medical students different as a result of participating in health literacy promotion courses (knowledge, understanding, skills, attitudes, values, and interest in adult learning competencies)?

RQ1c: Is the website information on medical schools' health literacy promotion curricula clearly present?

RQ1d: How does the perception, rendered in the surveys and interviews, align with the published curriculum on the medical schools' websites?

Research questions that guided the survey and interview process included:

RQ2: What, and how many, Schools of Medicine in the United States are offering a health literacy course as part of their medical school curriculum?

RQ3: How long has health literacy been a part of the medical schools' curriculum?

RQ4: Is a health literacy course a required course or an elective course in medical schools across the United States?

RQ5: What evaluation tool is used to assess the objectives of the health literacy curriculum?

RQ6: What key elements are included in U.S. medical school health literacy courses?

**Subsequent Areas of Comparison**

In order to further substantiate the survey findings, a comparative of on-line curriculum was reviewed to corroborate both descriptive quantitative survey results and the qualitative interview results. This process served as an assurance, thereby working to prevent a potential small study response rate and also allowing an inference to be made. Through this cross-comparison, a variety of collection points were verified and a logical conclusion stated. It is through this triangulation approach that the research question was supported or deemed as insignificant.

In support of thorough research and to minimize the risk of threats to internal validity, steps were taken to ensure solid research findings. When a study lacks internal validity, one or more alternative hypotheses may exist, which explain the outcome (Fraenkel & Wallen, 2009). According to Fraenkel and Wallen, 10 threats are inherent to the internal validity of research, which include the subject characteristics, mortality, location, instrumentation, history, maturation, subject attitude, regression, and implementation. Nevertheless, in order to counteract the aforementioned, there are techniques or procedures that researchers can employ to minimize or control such threats to internal validity (Fraenkel & Wallen, 2009). Four procedures are suggested by Fraenkel and Wallen; they include standardizing the conditions under which the study occurred, obtaining and using more information on the subjects, containing and using more information on the subjects of the study, and choosing an appropriate survey design. The "subject" of the study included those individuals or entities whose participation in the study was limited to providing information (Fraenkel & Wallen, 2009). Standardizing the conditions under which the study is conducted serves to strengthen survey implementation and data collection (Fraenkel & Wallen, 2009). Obtaining more information on the subjects studied lends to the clarification of the subjects' relative characteristics (Fraenkel & Wallen, 2009).

Through the process of garnering this type of information, the researcher was given supplemental data, which aided in analyzing and interpreting the results. It is the process of obtaining more information on the subjects studied, that researchers like Fraenkel and Wallen (2009) postulate regulate the threat, therefore minimizing subject characteristic, maturation, and regression threat. Obtaining more information on the

details of the study assisted the researcher in defining the geographical locations and circumventing validity threats. This information also provided a definition to the areas of study instrumentation, the history, the subject, the attitude, and the survey implementation. Study definition helped to summarize where and when the study took place, and identify any extraneous events that may occur (Fraenkel & Wallen, 2009). This process helped in the selection or implementation of instrumentation and reduced the probability of external factors (such as history and events) interfering with the study (Fraenkel & Wallen, 2009). These elements played a vital role in research and any one of these areas could have affected the responses of the subjects (Fraenkel & Wallen, 2009). The final step in the evaluation process of a proper study design is to validate the survey study tool (Fraenkel & Wallen, 2009). Proper survey design lends itself to study integrity, which in turn lends to the overall objective for collecting data. By employing these measures, the researcher was able to adequately analyze the research question and mitigate the risk of internal validity threats (Fraenkel & Wallen, 2009).

**Importance of the Study**

Medical advancements and treatment modalities are more complicated than ever. Physicians often assume that when speaking to a patient, he or she understands these advances and the explanations and instructions associated with them when they really do not understand, resulting in a disparity between the physician's level of communication and the patient's level of comprehension (Meyer & Arnheim, 2002). It is through student knowledge of health literacy concepts and the ability to apply this knowledge in a clinical setting that the barriers of miscommunication will be removed, thus leading to better, safer, and more effective care (Weiss, 2007). Although a number of initiatives to create

the conditions for innovative change have occurred at both the national and local levels, almost 10 years have passed since the American Medical Association Ad Hoc Committee on Health Literacy (1999) first emphasized the importance of incorporating health literacy training into graduate medical education. Although some progress has been made, the researcher believes greater attention to health literacy is still needed in medical education, specifically.

Many opportunities exist to educate medical students and residents about health literacy and the communication skills recommended for clear communication (Kripalani & Weiss, 2006). The responsibility lies at the door of leaders, such as medical educational leaders, medical professors, university administrators, and community leaders as well as students (Collins-Nakai, 2006). The researcher believes it is incumbent upon our medical schools to develop a process that will achieve effective curriculum revision and will address our nation's health literacy issues through preparation of medical professionals and economic support of the health system of the United States. Therefore, the goal of these findings was to provide respondents and those involved in medical training with better insight into curriculum development and medical professional preparation and training, ultimately impacting the academic rigor currently employed in the United States.

**Definition of Terms**

*Academic rigor* - Teaching, learning, and assessment that promote student growth in knowledge of the discipline and the ability to analyze, synthesize, and critically evaluate the content under study (Jones, 2007).

*Adverse health outcomes* - Pertaining to harmful health effect and adverse impact, resulting in harm to the patient the negative, health-diminishing side effects or secondary illnesses that can occur as a result of treatment (Jonas, 2005).

*Andragogy* - The process of helping adults to learn, including the creation of learning experiences in which adults are helped to make the transition from dependent learning to self-directed learning ("Andragogy," 2003).

*Assessment* - The act of judging, evaluating, or assessing a person, situation, or event (Hughes, 2008).

*Curriculum* - The courses offered by an educational institution or a set of courses constituting an area of specialization (Editors of the American Heritage Dictionary, 1996).

*Health care information* - The information used for prevention, treatment, and management of illness and the preservation of mental and physical well-being. This is done through the services offered by the medical and allied health professions, which are rendered by members of the health professions for the benefit of a patient ("Health Care Information," n.d.).

*Health literacy* - The ability to obtain, process, and understand basic health information and services needed, to make appropriate health decisions, and to follow instructions for treatment (Nielson-Bohlman et al., 2004).

*Health outcomes* - The measurement of the value of a particular course of therapy. Health outcomes are based on the principle that every clinical intervention produces a change in the health status of a patient and that change can be measured (Doheny, 2011).

*History threat* - One or more unanticipated and unplanned events that may occur during the course of the study that affects the responses of the subjects (Fraenkel & Wallen, 2009).

*Implementation* - The treatment or method in any experimental study which is administered by someone other than the researcher (Fraenkel & Wallen, 2009).

*Instrumentation* - The process of preparing to collect the data, the selection and design of the instrument, and the conditions under which the instrument will be administered (Fraenkel & Wallen, 2009).

*Learning* - The ability to develop one's knowledge through the process of external stimuli, personal re-elaboration, individual reflection, self-experience, and personal interaction (Sinitsa, 2000).

*Level of health literacy skills* - The level of comprehension of information measured which focuses on the ability of individuals to understand and use text, documents, and numbers pertinent to commonly encountered health care situations (Kutner, Greenberg, Jin, & Paulsen, 2006).

*Location threat* - The particular location in which data is collected, or in which an intervention is carried out, thereby creating an alternative explanation for results (Fraenkel & Wallen, 2009).

*Maturation threat* - The change during an intervention which may be due to factors associated with the passing of time rather than to the intervention process itself (Fraenkel & Wallen, 2009).

*Mortality threat* - The threat or loss of subjects during the collection of data, thereby reducing generalizability and introducing potential bias (Fraenkel & Wallen, 2009).

*Plain language* - Communication that can be understood the first time it is read or heard. Plain language is language that can be acted on appropriately via that understanding (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2005).

*Regression* - The possibility that results are due to a tendency for groups, selected on the basis of extreme scores, to regress toward a more average score on subsequent measurements, regardless of the experimental treatment (Fraenkel & Wallen, 2009).

*Subject attitude* - How subjects view the study and their individual role in the study (Fraenkel & Wallen, 2009).

*Subject characteristics* - A threat to the subject, which is noted as the selection of people who differ from one another in an unintended way (Fraenkel & Wallen, 2009).

*Teach Back Technique* – A method of patient teaching and instruction which involves asking patients to explain or demonstrate what they have been told or shown to do (The Joint Commission, 2007).

**Limitations of the Study**

The proposed sampling for this research study included 154 Schools of Medicine throughout the United States. This total encompassed 126 Schools that offer Doctor of Medicine Degrees and 28 that offer Doctor of Osteopathic Medicine Degrees. Only those Schools of Medicine that were listed from a compendium of The Council on Medical Education and Hospital Medical Colleges of the United States were examined. As a

result, other medical schools that are not yet listed were not included in the research data, thereby limiting the ability of the researcher to draw a full descriptive or inferential conclusion from the data. Therefore, a generalized study finding may be only partial in its representation. Additionally, the total number of responses of those surveyed was limited.

**Delimitations of the Study**

This study does not address any other areas of current curriculum content that lend insight to the issues involving Health Literacy. Only research pertaining to the four domains including awareness, content, impact, and evaluation of such curriculum were considered. The proposed research study included these four domains that operated as a platform to formulate survey questions, which in turn served as a descriptive quantitative measure. The researcher believes the possible reason for these areas not being incorporated in current curriculum may be related to current sensitive issues in society involving cultural bias, targeting, stereotyping of a culture, or lack of recognition of the problem. Additionally, resistance to change or anxiety among the faculty to have sufficient knowledge related to the topic is a consideration.

**Assumptions**

A blinded survey report of the findings will be offered to those participating in the study for national and regional comparison. The survey intent was to provide those respondents with a better insight into curriculum development with medical professional preparation and training, thereby ultimately impacting the academic rigor currently employed in the United States. It is assumed that these institutions would seek to implement or revise their existing curriculum, if not already in place, to ensure that

medical students have the necessary literacy skills and cultural information to assess care instruction and healthcare outcomes and assist in eliminating health literacy disparities. It is the researcher's belief that through the student's knowledge of health literacy concepts and the ability to apply this knowledge in a clinical setting that the barriers of miscommunication will be removed, thus leading to better, safer, and more effective care.

**Summary**

The area of curriculum is one of controversy, concern, and conflict. Without a doubt, however, educational curriculum is one of society's foundational components (Kallen, l996). As observed and investigated by this researcher, changes in society and the ability to adequately communicate are very much present. This researcher believes the responsibility to address the needs created by this change lies at the door of medical education leaders, medical professors, medical students, university administrators, and community leaders. With this, it is incumbent upon our medical schools to develop a process that will achieve effective curriculum revision and will address our nation's health literacy issues through preparation of medical professionals. Further, it is important to teach the future generations of medical students now to understand those with limited health literacy and to communicate with them effectively. The researcher's experience and evaluation of previous research and data, which supports this, submits that inclusion of curriculum designed to recognize and address limited health literacy will reduce disparities, improve outcomes, and promote health outcomes in the 21st century and beyond.

Subsequent chapters involving the research of this topic will further support the rationale for this study. Exploration of the issues regarding health literacy as a major

public health concern, the limited understanding of information and instruction given by physicians, and poor health outcomes of those who are compromised are discussed in Chapter 2. Additionally, Chapter 2 will compare and contrast various research efforts undertaken in a variety of healthcare environments. Chapter 3 reveals the research methods, tools, and design chosen for this study along with the data collection processes. Presentation of the data and the study findings follow in Chapter 4. The overall findings, patterns, relationships, and themes are addressed in the evaluation of this research study that employs a blended or mixed method sequential approach. Both qualitative and descriptive quantitative methodologies are used to investigate the number of Schools of Medicine within the United States that offer -health literacy as a component of their curriculum. Chapter 5 completes this research by further discussing the implication of the findings and probing into supplemental and differentiation opportunities regarding further research opportunities of this topic.

## Chapter Two: Literature Review

Three major areas of concentration pertaining to health literacy were examined within this literature review. First, data exists which substantiates that health literacy is a major public health issue in America (U. S. Department of Health and Human Services, National Institutes of Health, Office of the Surgeon General, Office of Disease Prevention and Health Promotion, 2006). Second, because low literacy levels and skills have reached monumental proportions, barriers to proper health care exist (Vernon, Trujilli, Rosenbaum, & DeBuono, 2007). As a result, the researcher believes that those who misinterpret or lack a basic understanding of the information given by clinicians are compromised by their healthcare decisions. Third, although health literacy has been identified as a major issue related to the consumers of care within the United States (Gazmararian, 2009), the researcher continued to question Schools of Medicine within the United States and the efforts they have taken to identify and address the epidemic lack of knowledge, communication, and basic health understanding through curriculum development.

### Health Literacy Assessment

Previous research regarding health literacy barriers suggested how hospitals, physician groups, and other health care entities have attempted to address the concern through physician and other forms of professional awareness. Recognition of the importance of health literacy is a relatively new phenomenon. Ten years ago, the concept was rarely studied; however, today more than 400 articles and books have been published addressing the topic (Wood, 2005). It is important to note that in this research the primary investigator found that many of the secondary studies regarding health literacy

were spurred by the American Medical Association as a result of the 2003 NAAL (Kutner et al., 2006). Every 10 years the U.S. Department of Education has conducted a national survey to document the American public's state of literacy; their 2003 study provided a comprehensive view of the general literacy skill of American adults (Kutner et al., 2006). Each participant was asked to provide personal and background information and to complete a comprehensive set of tasks to measure his or her ability to read and understand text, interpret documents, their use and interpret numbers (Kutner et al., 2006).

While the main purpose of the NAAL was to measure general literacy skills of American adults, specific items were devoted expressly to assess health literacy (Kutner et al., 2006). The items focused on the ability of individuals to understand and use text, read documents, and use numbers pertinent to commonly encountered health care situations involving illness, preventive care, access to and the use of the healthcare system (Kutner et al., 2006). Other factors included the individual's amount of experience in the healthcare system, the complexity of the information being presented, cultural factors that may influence decision making, and wording used in the material (Weiss, 2007). According to the results of the study, the data suggested that more than one-third of American adults lack sufficient health literacy as well as the ability to read and understand virtually all text and numerical information they might encounter in a healthcare setting. They also lack the skills to effectively undertake and execute necessary medical treatment and preventive health care (Weiss, 2007). As a result, the limited ability to read and understand health-related information often translates into poor

health outcomes as Americans struggle to understand essential information necessary to their health and wellbeing (Doak, Doak, & Root, 1995).

**Levels of Health Literacy Skills**

The NAAL results were reported by dividing the health literacy skills of those studied into four levels: proficient, intermediate, basic, and below basic (Weiss, 2007). Proficient tasks included calculating an employee's share of health insurance costs for a year using a table that indicates how the employee's monthly costs vary, finding the information required defining medical terms by searching through a complex document, and evaluating information to determine which legal document was applicable to a specific healthcare situation. Intermediate aptitudes were defined partly as determining a healthy weight range for a person of specific height based on a graph that relating height and weight to body mass index. Along with healthy weight, intermediate aptitudes involved finding the average range during which children should have received a particular vaccine based on a chart that indicated all of the childhood vaccines and all of the ages that children should have received them. It also included the process of determining what time a person can take a prescription medicine based on information on the prescription drug label in regards to eating, as well as identifying three substances that may interact with an over-the-counter drug to cause side effects based on information on the over-the-counter drug label (Weiss, 2007).

Basic abilities are characterized as giving two reasons why a person with no symptoms of a specific disease should be tested for the disease based on information in a clearly written pamphlet or being able to explain why it is difficult for people to know if they have a specific chronic medical condition based on information in a two page article

about medical conditions (Weiss, 2007). Finally, below basic skills included identifying how often a person should have a specific medical test based on information in a clearly written pamphlet, identifying what is permissible to drink before a medical test based on a set of short instructions, or circling the date of a medical appointment on a hospital appointment slip (Weiss, 2007).

**Literacy and Health Knowledge**

Health literacy was defined in a report by the Institute of Medicine as the ability to obtain, process, and understand basic health information and the types of services that may be needed, in order to make appropriate health decisions and follow instructions for treatment (Nielson-Bohlman et al., 2004). Health literacy has many dimensions, including what it means to be able to read, understand, and communicate important medical and health information during different phases of life (Parker et al., 2003). Not surprisingly, level of health literacy seemingly has an important impact on one's health. All of the studies that have investigated health literacy reported that literacy is a stronger predictor of an individual's health status than are income, employment status, education level, and racial or ethnic group (Weiss, Hart, McGee, & D'Estelle, 1992).

Active health literate consumers can go on line and receive the latest information on sophisticated technological innovations; these individuals create demand for the latest technology and are able to navigate and function in the U.S. healthcare system (Parker et al., 2003). However, those with low health literacy sit on the other side of the literacy divide and are unable to function as informed health consumers thereby promoting medical knowledge inequalities (Parker et al., 2003). Recent work on understanding health disparities across education groups suggest that technological progress in

healthcare will exacerbate disparities over time and that disparities will be larger for sicker, older, and more vulnerable groups (Goldman & Lakdawawalla, 2001). According to the McKinsey Global Institute (2008), if U.S. healthcare spending continues along current trends, the total spending for medical treatment will reach $4.3 trillion by 2018. In the researcher's experience, key drivers of healthcare spending include drug costs, technology, inpatient care, health administration, higher physician compensation, and outpatient care; these result in advances in medical science, changes in the delivery system of care, and increases in consumerism creating a culture of high health literacy demands. In addition, patients are increasingly encouraged to take more and more responsibility for their health (Williams, Davis, Parker, & Weiss, 2002). Those without adequate health literacy understanding cannot function successfully in a society designed for health literate recipients of care (Williams et al., 2002).

The limited ability to read and understand health-related information often translates into poor health outcomes. For instance, adults with limited literacy face formidable problems using the healthcare system. They are less likely to use screening procedures, to follow medical regimens, to keep appointments, or to seek help early in the course of a disease (Jackson et al., 1991). Those with inadequate health literacy have less knowledge about their medical conditions and treatment, worse health status, and higher rates of hospitalization than the rest of the population (Baker, Parker, Williams, Clark, & Nurss, 1997). These people also struggle with essential information, such as understanding emergency department discharge instructions, consent forms, oral instructions, educational materials, and labels on medication containers (Doak et al., 1995). Numerous studies in healthcare settings demonstrate that persons with limited

literacy skills often have a poor understanding of basic healthcare concepts. For example, one study of patients with limited literacy found that many did not understand the meaning of words that clinicians regularly used in discussion with patients (Davis et al., 2001). In the researcher's experience, the written format has been the primary means by which information has been communicated in the healthcare industry, and given that many people are not health literate, a substantial number of people will continue to have trouble understanding the information they receive about their health. People with low literacy skills also have impaired access to healthcare by being outside a societal flow of information that brings people to the healthcare system (Ensor & Cooper, 2004). For instance, they cannot access messages from magazine articles, posters in supermarkets, or billboards about the value of various screenings or flu shots; not surprisingly, people with low literacy levels have more sickness and require more costly forms of care (Miles & Davis, 1995).

**Populations at Risk for Health Literacy**

According to the Center for Health Care Strategies, a disproportionate number of minorities and immigrants are estimated to have literacy problems (Potter & Martin, 2005). Additionally, more than 66% of U.S. adults age 60 and over are found to have either inadequate or marginal literacy skills (Doak et al., 1996). Likewise, those who are unemployed, those with limited income, and those insured by Medicaid are also likely to have limited health literacy (Weiss, 2007). According to a March 2000 Roper poll, almost two-thirds of Americans still associate learning disabilities with mental retardation; that belief is probably because dyslexics find it so difficult to learn through conventional methods, as dyslexia is a disability in learning rather than an intelligence

disability (Morris, Munoz, & Neering, 2002). Visual difficulties and learning disabilities, such as dyslexia, account for health literacy deficits in only a very small percentage of NAAL subjects (Kutner et al., 2006).

Persons with basic and below basic health literacy skills are found in all segments of society. Table 1 depicts the percentage of those who are earmarked as possessing basic or below basic levels of literacy skills, as defined by the NAAL (Kutner et al., 2006). Basic skill is defined as the ability to perform basic tasks of reading and to understand a short pamphlet that explains the importance of screening tests for wellness and prevention (Weiss, 2007). The researcher has found that the majority of these people struggle in understanding standard patient education brochures or completing health coverage applications or forms. Below basic skills are denoted as having skills less than basic; these people are unable to execute the most basic tasks necessary to attain full function in today's culture, inclusive of those that relate to the healthcare system (Weiss, 2007). These individuals have trouble carrying out simple literacy tasks, such as noting the date and time of a medical appointment from an appointment slip; thus, these patients would have significant difficulty in performing basic-level responsibilities (Weiss, 2007).

Table 1

*Health Literacy of America's Adults*

| Group | Below Basic % | Basic % | Total % |
|---|---|---|---|
| Age (years) | | | |
| 19-24 | 10 | 21 | 31 |
| 25-39 | 10 | 18 | 28 |
| 40-49 | 11 | 21 | 32 |
| 50-64 | 13 | 21 | 24 |
| 65 and older | 29 | 30 | 59 |
| Highest education level completed | | | |
| Less than or some high school | 49 | 27 | 76 |
| High school graduation (no college study ) | 15 | 29 | 44 |
| High school equivalency | 14 | 30 | 44 |
| Racial/ethnic group | | | |
| White | 9 | 19 | 24 |
| Asian/Pacific Islander | 13 | 18 | 31 |
| Black | 24 | 14 | 58 |
| Hispanic (all groups) | 41 | 25 | 66 |
| Health insurance status | | | |
| Employer provided | 7 | 17 | 27 |
| Privately purchased | 13 | 24 | 37 |
| Medicare | 27 | 30 | 57 |
| Medicaid | 30 | 30 | 60 |
| No insurance | 28 | 28 | 53 |

*Note.* Adapted from *The literacy of America's adults: Results from the 2003 National Assessment of Adult Literacy* by M. Kutner, E. Greenberg, Y. Jin, and C. Paulsen, 2006. U.S Department of Education, (National Center for Education Statistics [NCES] Publication No. 2006-483).

Other problems experienced by persons with limited literacy skills are as follows: 26% did not understand when they were to have their next appointment, 42% did not understand instructions to take medicine "on an empty stomach," up to 78% misinterpreted warnings on prescription labels, and 86% could not understand rights and responsibilities of a Medicaid application form (Baker et al., 1997). Many individuals with limited health literacy do not fall into the aforementioned population groups; however, they function with similar limited literacy skill sets. One study of affluent individuals living in a geriatric retirement community found that 33% scored poorly on a

test of functional literacy in healthcare situations (Gausman & Forman, 2002). Patients may be verbally articulate and appear well kempt, knowledgeable and well educated, yet be unable to understand or to comprehend disease concepts or how to comply appropriately with medication regimens (Weiss, 2007).

*Fortune Magazine* addressed limited general literacy skills in a May 13, 2002, article which profiled billionaire executives with dyslexia who developed coping mechanisms that worked in order to function in their business and social lives (Morris et al., 2002), but might not work as effectively in a healthcare scenario. Numerous studies in healthcare settings demonstrated that persons with limited literacy skills often have a poor understanding of basic medical vocabulary and health care concepts (Weiss, 2007); however, a lack of understanding is not just limited to medical terms. The researcher has found that patients with low literacy and chronic diseases, such as diabetes, asthma, or hypertension, have less knowledge of their disease and its treatment and fewer self-management skills than literate patients.

Many patients with limited literacy go unnoticed by the health care system, as often these individuals do not disclose, and often even conceal, their deficiency. The vast majority of patients with limited literacy skills have never told anyone in the health care system about their trouble, and most have never told a family member (Parikh, Parker, Nurss, Baker, & Williams, 1996). Likewise, many patients with more developed literacy skills who fall short of fully understanding health information may steer clear of asking questions or requesting clarification for fear of appearing dull or ignorant or because they do not want to be bothersome (Doak et al., 1996). Hence, literacy levels are not always apparent.

**Literacy and Health Care Costs**

The adverse health outcomes of low health literacy translated into increased costs for the health care system. In one study, the average annual healthcare cost for all Medicaid enrollees in one state was $2,891 per enrollee, but the annual cost for enrollees with limited literacy skills averaged $10,688 (Weiss, 2007). Another study, including 3,260 Medicare enrollees in sites around the country, found higher costs for emergency department and inpatient care for people with limited health literacy (Weiss & Palmer, 2004). In a 2004 report released by the Institute of Medicine, the average health care system spent an average of $993 every year in excess hospitalization expenses for every patient with inadequate health literacy, which accounted for tens of billions of dollars in annual health care costs (Neilson-Bohlman et al., 2004). The combination of medication errors, excess hospitalizations, longer hospital stays, high use of emergency department resources and a generally higher level of illness have added to limited health literacy estimated to result in excess costs for the U.S health care system of between $50 billion and $73 billion per year (Friedland, 1998). According to a study conducted by the Center for Health Care Strategies (2012), direct medical costs of low functional literacy are shared by the additional resources financed through taxpayers, employer groups, out-of-pocket co-payments, deductibles, and self-pay expenses.

**Literacy and Education**

The term “health literacy” was first used in a 1974 paper that discussed how health education affects the health care system, the educational system, and mass communication (Simonds, 1974). This initial discussion called for minimum standards of health literacy for all school grade levels, presenting an opportunity to link education

with health competencies, which was promising given that failures in health education have contributed to a portion of poor health literacy concerns (Parker et al., 2003). In a recent assessment of literacy, the performance of America's college students was alarmingly poor (Elliott, 2006). Although students did test better in some categories than other adults in the population with similar levels of education, sizable percentages were unable to carry out relatively simple reading comprehension tasks or make basic calculations (Elliott, 2006). Most Americans are familiar with these skills and use them frequently in everyday life (Elliott, 2006). The failure of our educational system relating to literacy is the failure, in part, to teach reading skills. Flesch (1955), author of "Why Johnny Can't Read," postulated that American educators were botching the job of teaching the nation's youth how to read. However, according to several studies conducted in an effort to diagnose the problem and address health literacy issues, literacy has come to mean not only the ability to read or decode words, but also the ability to comprehend, understand, and use verbal reasoning to accomplish the intended objective (Giorgianni, 1998). Likewise, in May 2006, a study conducted on behalf of the National Council on Teacher Quality, reported that both the National Institutes of Health and the National Institute for Child Health and Development (NICHD) viewed the nation's reading problem as a significant public health crisis (Walsh, Glaser, & Wilcox, 2006).

Education is essential to a thriving society. Not only does education provide the basis for successful participation in our economy and democracy, but it also helps determine our health (Yen & Moss, 1999). Improving health literacy is a tool for improving health and healthcare in America and is both a process and outcome. Creating a truly health literate America is a challenge requiring leadership, strategy, and

cooperation that may not be easy, but it is the right goal for health policy (Parker et al., 2003). Therefore, it is this researcher's belief that an effort to make health literacy a component in healthcare professional training is imperative and establishing health literacy learning standards across the lifespan can be incorporated into medical school curriculum. It is also the researcher's belief that an awareness and assessment of health literacy should be part of physician training and health system culture, thereby embracing a culture that assists in eliminating health disparities.

**Literacy and Understanding Health Care Information**

Researchers have demonstrated that many written health materials such as pamphlets, self-care instructions, and insurance forms require a high reading level (Davis, Williams, Marin, Parker, & Glass, 2002). Greenberg (2001) cited one study that revealed even college-educated individuals have difficulty understanding information on the benefits and risks of mammography. The medical literature has emphasized simplification, or plain language, and the use of visual aids and pictographs for low literacy patients, although Greenberg suggested that all patients would benefit from easy-to-understand directions. On the other hand, many writers caution against overreliance on plain language. The McConnell-Imbriotis (2001) analysis of literature for diabetes patients indicated that simplification can impede learning even for highly literate people if no context for unfamiliar concepts was provided; brevity can lead to the use of narrow, ethnocentric examples and oversimplification of critical information. Multiple factors beyond readability and presentation may influence consumer use of health information, including patients' demographic characteristics, health locus of control, beliefs, and environmental factors (Koo, Krass, & Aslani, 2003). Plain language is useful but not the

primary solution; written communication should supplement physician-patient conversations (Shohet, 2002). The problem is that physicians often use language not readily understood by the general public. Even when physicians think they are using "everyday" language, patients do not perceive it as such (Davis et al., 2002). Freebody and Freiberg (1997) discussed the role that expert knowledge and the protection of the professional elite play in the opacity of healthcare communication by emphasizing the recognition of both literacy and health as sets of cultural practices, as well as understanding of the ways in which communication patterns act to position people with respect to knowledge and medical care.

The most common specific patient response to lack of understanding of both written and verbally conveyed health information was to ask a family member (Weiss, 2007). The concern with this response is that family members may have no better understanding of the health information than the patient, and may cause the patient to become even more confused about what they were told if not verified by a professional; thus, the patient would continue to lack an understanding of vital information (Sand-Jecklin, Murray, Summers, & Watson, 2010). Another issue of concern was that some patients would “try again” to understand printed material or instructions independently and not ask questions, to just let the issue “go,” meaning to do nothing about their lack of understanding, or trust in the physician and sign any requested forms regardless of understanding (Sand-Jecklin et al., 2010). These compensatory behaviors might result in adverse outcomes, including patients consenting to procedures that they do not understand, going home from a clinic without filling a needed prescription, taking medications incorrectly, or failing to perform necessary self-care activities (Sand-Jecklin

et al., 2010). The likelihood for adverse health outcomes could be significantly increased by these patient compensatory behaviors (Sand-Jecklin et al., 2010).

**Health Care Literacy and the Law**

Health literacy and patient safety experts agree that asking questions brings many benefits, including helping people learn new content, confirming they understand key concepts, and framing information within a more personal context (Osborne, 2011). Additional research has indicated that effective communication with patients has a beneficial effect on medical outcomes (Weiss, 2007). These benefits include lower rates of anxiety, pain, psychological distress, and higher rates of compliance and symptom resolution (Stewart et al., 1999). In particular, patients' adherence to therapy is known to be heavily influenced by communication style. Specifically, clear and concise instructions delivered to patients by clinicians are associated with improved rates of adherence (Svensson, Kjellgren, Ahlner, & Saljo, 2000). Poor communication between patients and clinicians, however, is a major factor in malpractice lawsuits. In fact, attorneys estimated that a clinician's communication style and attitude are major factors in nearly 75% of malpractice suits (Beckman et al., 1994). The most frequently identified communication errors are inadequately explaining diagnosis or treatment and communicating in such a way that a patient feels his or her concern has been ignored (Vincent et al., 1994).

**National Recognition of Health Literacy and Call to Action**

Based on the work of the Massachusetts System for Adult Basic Education Support, components of an effective health literacy system that involves many levels of educational, health care, and community service providers have been identified (Wilson,

2001). These components include an information dissemination system providing materials that are readable, comprehensible, trustworthy, and culturally sensitive; a coordinated health literacy learning system; a measurement and assessment system; a formal and informal health advice system, including a hotline, handbook, and on-line support; and a professional health provider learning system (Wilson, 2001). It appears to the researcher that the works mentioned, along with increased media attention, and the efforts of professional societies, including the American Medical Association, the American College of Physicians, the American Society of Internal Medicine Foundation, and voluntary health agencies such as the American Cancer Society, have helped to create and raise awareness of health literacy issues. Along with the above agencies, the Joint Commission on Accreditation of Healthcare Organizations (JACHO) and the National Committee for Quality Assurance (NCQA) have also focused on greater attention on health communication and have developed guidelines about patient materials (Parker et al., 2003). In December 2007, The National Coalition for Literacy Policy Forum presented outcome information regarding the efforts of the American Medical Association Foundation to address health literacy in our nation (Carmel, 2007). Such efforts were spurred as a result of a 1995 study conducted and reported by the American Medical Association (1999) in the Journal of American Medical Association (JAMA).

The American Medical Association (1999) study revealed that patients with low literacy have poorer health outcomes, with longer and more frequent hospitalizations. These findings were reported in a public forum in 1997 to the American Medical Association Council on Scientific Affairs before a national panel of experts of the American Medical Association House of Delegates (American Medical Association,

1999). This legislative entity challenged the Council of Scientific Affairs, in 1998, to create new policy on health literacy, thereby making the American Medical Association the first national medical organization responsible for being the impetus for change. The American Medical Association Health Literacy Policy (H 160.931) outlined that limited patient literacy is a barrier to care, and the following components were outlined in the mission of the literacy policy (Carmel, 2007). They include the following: to develop appropriate patient education materials; to work to make the health care community aware of the large number of patients with poor understanding of health care information; to develop programs for medical students, residents, and physicians; to better communicate; to encourage compensation for patient education; to ask the Department of Education to include questions on health literacy in the National Adult Survey Literacy Study; and, to encourage federal and private funds for health literacy research.

**Physician awareness.** In response to the literacy mission, the American Medical Foundation, in partnership with Pfizer Incorporated, the world's largest research-based pharmaceutical company, launched literacy programs through the American Medical Association (AMA) to assist physicians by providing tool kits to practicing physicians and their staff to better understand health literacy (Weiss et al., 2007). The tool kit included a clinician manual, instructional video, CD ROM or VHS, as well as pins for both the physician and staff to wear; tear-off informational sheets were also provided for the reception area of the physician’s office (AMA, 2012). The objectives of the program were to define the scope of the health literacy problem, recognize health systems’ barriers faced by patients with low literacy, implement improved methods of verbal and written

communication, and incorporate practical strategies to create a shame-free environment (Weiss et al., 2007).

The clinician manual, geared to be used as a solution-oriented learning monograph, explored the problem of limited literacy in the United States; practical solutions and suggestions were included to promote interpersonal communication with patients (Weiss et al., 2007). The monograph manual included tables and checklists of feasible steps to enhance patient comprehension and compliance. The American Medical Association suggested, upon the monograph release, that circulation of the manual was encouraged in an effort to better equip the staff and physicians in their interactions with their patients (The Ethical Force Program, 2008). The 20 minute instructional videos included in the monograph were case studies illustrating the problem of health literacy and how the physician and staff might deal with patients who have health literacy issues; effective techniques and specific steps are suggested for helping those patients, and the videos feature actual physicians and staff members (Weiss et al., 2007). Physicians were also encouraged to set aside time to watch the video with all staff and to discuss how their practice could work together to enhance patient understanding and to create a helpful, nonjudgmental, and welcoming office environment (Weiss et al., 2007). Staff pins were provided that conveyed a welcoming message that read, “Ask me. I can help” (Weiss et al., 2007, p. 25). The pins were designed to facilitate a dialogue between patients and office staff and to put patients at ease and encourage them to ask questions. Staff members were encouraged to wear the pins every day so that patients always knew that the physician and staff were there and ready to help with their needs (AMA, 2012).

Finally, a patient reception area display with tear-off pads was included in the tool kit (Weiss et al., 2007). The patient-friendly display invited patients to prepare for their office visit, and each tear-off sheet provided a useful, easy to read checklist for patients on how they could get the most from their visit; patients were encouraged to take a tear-off to read while waiting for their appointment and to take it home to read again later (Weiss et al., 2007). A convenient easel back stand was also included for the reception area desk or reception area for patients to see and use (Weiss et al., 2007).

In further commitment to this initiative, the American Medical Association (AMA), which is accredited by the Accreditation Council for Continuing Medical Education, designated the educational activity offered by the monograph as an opportunity for continuing education credits (CEU'S) for physicians (Weiss et al., 2007). The AMA designated the monograph activity for a maximum of 2.5 hours. The process for CEU's involved viewing the instructional video, reading the manual for clinicians, and answering a continuing medical education questionnaire (AMA, 2012). Since December 2008, over 28,000 kits have been distributed by the AMA to physician participants throughout the United States, and over 20,000 train-the-trainer curriculums geared toward learning or improving interpersonal communication skills with patients have been introduced to promote awareness among healthcare providers (The Ethical Force Program, 2008).

General consensus exists among health literacy and communication experts regarding the six basic methods for improving communication with patients (Williams et al., 2002). Although initially recommended based on expert opinion, research results are providing evidence that these methods work (Weiss et al., 2007). The six steps to

improving interpersonal communication with patients include slowing down, using plain nonmedical language, showing or drawing pictures, limiting the amount of information provided and repeating it, using the "teach-back" technique, and finally, creating a shame-free environment in order to encourage questions (Weiss et al., 2007).

Researchers have conducted numerous studies that have supported these steps. Williams et al. (2002) reviewed literature using such terms as communication, reading, and physician-patient communication in an effort to examine the impact of physician and patient communication. This study, in concert with secondary research performed by Davis et al. (2002) regarding health literacy and communication with patients suffering from cancer, found that improving interpersonal communication with patients included these six steps. According to the aforementioned research, slowing down when speaking, which is the first of the six steps, leads to improved communication. By speaking slowly and by spending just a small amount of additional time with each patient, physicians could foster a patient-centered approach to the physician-patient interaction (Weiss et al., 2007). Physicians who provided information in a slow and deliberate fashion, allowed the necessary time for the patient to comprehend new information, not only increased patient comprehension but also enhanced patient satisfaction (Traveline, Ruchinskas, & D'Alonzo, 2005), ultimately improving interpersonal communication with patients.

Using plain, nonmedical language, which is the second step, was also noted as a crucial element (Weiss et al., 2007). Although physicians are trained in the use of a variety of medical terms—which relate to various concepts specific to body systems, conditions, diseases or treatments—it is often confusing and overwhelming to the patient when it requires a layman's interpretation; therefore, it is recommended that the

physician explain things to patients in simple, everyday language (Weiss, 2007). The researcher has found that being clear and concise, without using complicated medical terminology is important to patient understanding. Language should be simple and free of jargon and euphemisms. The patient should not be inundated with complicated technical terms; rather, the information should be conveyed clearly and slowly around key issues, leaving time for questions (Dias, Chabner, Lynch, & Penson, 2003).

Step three supports the use of visual images, such as showing or drawing pictures, to improve the patient's recall of ideas (Weiss et al., 2007). In a study conducted by Houts et al. (1998), researchers found that recall of spoken medical instructions averaged 14%, but that when pictographs or drawings representing the instructions accompanied the spoken instructions and were present during recall, 85% of medical instructions were remembered correctly. These results suggest to the researcher that spoken instructions plus pictographs give people with low literacy skills access to medical information that is normally available only in written format. According to an article in *Boston Globe Media on Call M*agazine from 1999, "Healthcare information is traditionally communicated through the written and spoken word. When people have special learning needs, such as low literacy skills, cognitive disabilities, or increased stress, it may be especially important to use visual teaching tools" (as cited by Osborne, 2012, para. 2). Additional research found support that visual images or pictorials aid in patient communication (Katz, Kripalani, & Weiss, 2006). Katz et al. (2006) focused on effects of pictorial aids in medication instructions, in mediation recall, and in comprehension and adherence. The conclusion of the review indicated that the use of pictorial aids enhanced

patients' awareness of how they should take their medications, especially when coupled with written instruction or oral reinforcement (Katz et al., 2006).

Limiting the amount of information that is provided to patients, and repeating the information for reinforcement was referenced as step four (Weiss et al., 2007). Information may be remembered better when it is given in small pieces that are pertinent to the task at hand; also, the use of repetition may further enhance recall. Rao (2007) noted that since health related information can be overwhelming, patients can become confused. Rao noted that patients, when bombarded with a great deal of information all at one time and when their ability to comprehend and retain information was impaired, they may not successfully learn. In order to allow patients to absorb the instruction fully and avoid confusion, short educational sessions in time frames of 15 minutes or less should be considered in patient teaching (Rao, 2007). Sessions should include breaks, repetition of important information, and ongoing assessments of knowledge as determined by questions and patient demonstration, dividing instructions into small, logical segments (Rao, 2007).

The use of the "teach-back" technique is step five in improving interpersonal communication with patients (Weiss et al., 2007). The physician can first determine the level of the patient's understanding by asking them to repeat back the instruction that was communicated or demonstrated (Weiss et al., 2007). How well the patient understands is then confirmed when they can correctly express or demonstrate the content back. This teach-back technique, also known as the interactive communication loop, was evaluated by primary care physicians in a hospital setting with diabetic patients (Schillinger et al., 2003). The aforementioned teach-back method involved direct observation to measure

the extent of recall and comprehension of patients' learning of new concepts and of self-care during outpatient visits. This research concluded that overlooking the interactive communication loop reflected a missed opportunity that may have important clinical implications in patient teaching (Schillinger et al., 2003). Additionally, educating the patients represents one of the three main functions of the medical encounter (Putnam & Lipkin, 1995).

In step six, the final step listed in the improvement of the interpersonal patient process, the creation of a shame-free environment and the encouragement of questions from the patient was endorsed (Weiss et al., 2007). In a correlation of health literacy with health status, Weiss et al. (1992) found that the lowest reading skills were from patients who possess poor physical and psychological health status compared to those with better reading skills. Therefore, literacy level was noted as a stronger correlate of health status than education level or other sociodemographic variables. Patients with low literacy skills are often ashamed of this problem and rarely tell anyone (Baker et al., 1997; Parikh et al., 1996). However, patients with good literacy skills may also feel intimidated and avoid asking questions, resulting in behavior that may be misconstrued to signify that the patient understands the instructions, when really they do not (Baker et al., 1997).

Additionally, as part of the sixth step, physicians should help patients feel comfortable asking questions. Information endorsed by the U.S Department of Health and Human Services Office of Disease Prevention and Health Promotion and Agency for Healthcare Research and Quality (n.d.) explains to consumers of healthcare that good health depends on good communication. They further encourage the reader not only to

ask questions but also to provide information to their physician and other partners of the healthcare team, in order to improve care. Issues of trust, quality, safety and satisfaction are noted as a result of talking to their physician and other team members. Questions posed by the patient to the doctor are encouraged in order to solicit important information about care, to address important healthcare decisions, and to speak to other concerns (DeWalt et al., 2010). The agency clearly encourages the consumer to ask questions, noting that "Questions are the Answer" in good patient and physician communication (DeWalt et al., 2010).

Enlisting the aid of others, such as family or friends, to serve as a resource for the patient in the promotion of understanding what the patient needs to know, is also endorsed under step six (Weiss, 2007). It can be helpful to take a family member or friend with you when you go to the doctor's office. According to the National Institute of Aging, a patient may feel more confident if someone else is present during the patient-physician encounter (DeWalt et al., 2010). The researcher has found that a support person can help in remembering what the patient planned to tell or ask the physician; they can also help to remember what the doctor said to the patient. A key point in allowing someone to assist is to let them know in advance how they can be most helpful. Good communication potentially offers the most rewarding aspect of total patient care. The way in which patients are involved in their care and the way in which physicians can elicit and impart information contribute to the overall quality of patient treatment (Dias et al., 2003).

**Andragogy and medical education.** Andragogy, as defined by Knowles in his 1980 theory of "andragogy," is the art or science in teaching adults (as cited in Merriman,

1987). However, andragogy principles can be traced back to 1833, when Kapp, a German grammar teacher, used the term to describe Plato's educational theory (Knowles, Holton, & Swanson, 1998). Rosenstock introduced the term andragogy to the Frankfort Academy of labor in 1921, when the German Social Scientist introduced the theory in the Worker's Education Movement (Wilson, 2001). Rosenstock conveyed in the theory that adult education requires special teachers, methods, and philosophy. Rosenstock, used the term to describe a communal learning method by which adults learn (Wilson, 2001). However, the concept did not gain public recognition at that time (Nottingham Andragogy Group, 1983). In 1926, Lindeman introduced the concept of andragogy in the United States, touting this term as the means by which adults keep themselves intelligent about the modern world. The concept included the learning process in which theory and practice become as one and in turn result in a creative experience. Lindeman (1926) was a proponent of lifelong learning.

Knowles is often cited for his works involving andragogy and his framework of learning. According to Knowles (1980), a professor of adult education at Boston University, the differentiation in learning processes for adults compared to children takes place as individuals mature in ideas, concepts, and approach, through exposure to new experiences; in essence, life unfolds. Knowles proposed that adults need to know why they should learn something; however, under the more standard pedagogical model it is assumed that the student will simply learn what they are told and not need to know why. Adults are used to understanding what they do in life (Knowles et al., 1998). They want to know the reason they need to learn something or how it will benefit them (Knowles et

al., 1998). These differences, and additional variances in learning, are depicted in Table 2.

Table 2

*Child and Adult Learning Characteristics*

| Children | Adults |
|---|---|
| Rely on others to decide what is important to be learned. | Decide for themselves what is important to be learned. |
| Accept the information being presented at face value. | Need to validate the information based on their beliefs and values. |
| Expect what they are learning to be useful in their long term future. | Expect what they are learning to be immediately useful. |
| Have little or no experience upon which to draw, and are relatively "blank slates." | Have substantial experience upon which to draw. May have fixed viewpoints. |
| Have little ability to serve as a knowledgeable resource to teacher or fellow students. | Have significant stability to serve as a knowledgeable resource to the trainer and fellow learners. |

*Note.* Excerpted from *The ultimate educator* by C. Edmunds, K. Lowe, M. Murray, and A. Seymour, 1999, Washington, D.C.: U.S. Department of Justice, Office for Victims of Crime.

Consistent with the andragological methodology, educators of adult learners should have technological, scientific, and relational skill sets that are required for them to be effectual educators (Galbraith, 2003). Also embedded in the adult learning process is the key element regarding communication, which requires conveyance of knowledge from the sender to the receiver and the convergence between them (Burbules & Bruce, 2012). Convergence requires verification that both the sender and receiver understand the knowledge; and, when the sender and receiver apply the knowledge, they reach the same conclusion (Isenberg & Glancy, 2011).

By using teaching and learning methods based on educational theories and derived principles, medical educators become more effective teachers. The researcher

believes this practice would enhance the development of knowledge, skills, and positive attitudes in their learners, and improve the next generation of teachers. Ultimately, this should result in better-trained doctors who provide an even higher level of patient care and improved patient outcomes (Kaufman, 2003).

**Learning Methodology**

Learning is the ability to develop one's knowledge through the process of external stimuli, personal re-elaboration, individual reflection, self-experience, and personal interaction (Sinitsa, 2000). Although each learner is unique, theorists and researchers supporting this concept assert that learners involved in this process learn more, and enjoy learning more readily if they engage in active participation, rather than remain a distant or passive participant (Sinitsa, 2000). Therefore, this concept has typically been implemented as a common platform and has served as a common strategy for continuing education in medical training. As shared by Galbraith (2003), "Understanding adults as learners and gleaning insights [from them will aid] in the journey of enhancing meaningful educational encounters" (p. 16). This concept is also supported in that adults learn best in new environments that provide support and safety for testing new behaviors (MacKeracher, 2004).

Two adult learning methods proposed by Smith (1996) incorporate both life experience and interaction and provide comprehensive learning opportunities when introduced in the adult educational setting. The first methodology of individualized learning is the Socratic Method (Benson, 2000). In essence, this method emphasizes student interaction and the sharing of life experiences that peers bring to the classroom (Benson, 2000). This interaction offers the adult learner the best opportunity for analysis

and synthesis of the subject material. This method provides inquiry and debate among individuals with opposing views and is based on asking and answering questions to stimulate rational thinking, thus challenging the status quo (Younis, 2008). It is a dialectical method that often expands oppositional discussion, reflecting a defense of one point of view pitted against another (Younis, 2008). One participant may challenge others to contradict themselves, thus strengthening the inquirer's own philosophy (Benson, 2000).

Both Socratic dialogues and questions build the platform widely used in contemporary legal education throughout the United States. The primary goal of the implementation of the Socratic Method in law school is to explore the often difficult scenarios facing the judicial system (Benson, 2000). Students are taught critical thinking skills that are required by an attorney to successfully defend their legal stance. The methodology challenges the student to go beyond simple memorization of fact, thus shifting the focus from the fact to the process of the chain of events (Lai, 2011). The process pattern encourages the formation of an opinion for a legitimate argument, thereby challenging the legal rules or principles at issue (Benson, 2009).

A second educational approach that is similar and somewhat successful for the adult learner involves the philosophy of Constructivism. Constructivism is a concept in which the individual learner actively constructs new ideas or concepts based upon past or current knowledge, references, or experiences (Bruner, 1961). The experience becomes personal, in part, because it applies to the individual's real world experiences. The learning imprints the experience through self-discovery and allows free exploration, self-

reflection, situated cognition, and realistic problem solving as components of the process (Bruner, 1961).

Constructivism promotes social and communication skills, therefore creating a classroom environment that encourages collaboration and exchange of ideas. It is imperative that learners articulate their ideas clearly and collaborate effectively in-group projects. Exchanging ideas, negotiating with others, and providing unbiased evaluation of individual contributions promotes successful communication in collaborative group work involving Constructivism (Lai, 2011). Successful collaboration is pivotal for interaction in the academic setting and in career development (Murphy, 1997). The researcher believes that through exposure to a variety of experiences, coupled with the educational theory of Constructivism, the individualized adult learner can expand his or her knowledge base and navigate among other ideas.

Constructivism has many variations of the active learning process and involves the educator in the role of a facilitator. The facilitator encourages the learner to discover principles and construct knowledge by working and evaluating creative solutions to realistic problems (Murphy, 1997). Aspects of Constructivism are found in learning and relearning programs in medical rehabilitation programs. They are used in situational social role acquisition, intelligence sparing exercises, and memory related to the aging process (Addy, 2006). Constructivism stresses understanding as the purpose of education and is advantageous to rote memorization and mantra-like repetition of facts (Davis, 2004).

Those opposing the two methodologies assert that central flaws exist in both. When referring to the technique of the Socratic Method, critics argue that the method is a

negative form of hypotheses elimination (Jackson, 2007). Opponents of the Socratic Methods espouse better hypotheses are based on identifying and eliminating those hypotheses which lead to contradictions (Tuominen, 2007). Some critics erroneously claim this method is believed to seek one's answer to a problem (Tuominen, 2007). This claim is supported by the belief that Socrates believed knowledge was possible (Guthrie, 1960) and the first step in attaining knowledge was to recognize the level of one's lack of knowledge. According to Guthrie (1960), author of *The Greek Philosophers*, Socrates was accustomed to the belief that he did not know anything and the only way he was wiser than other men was because he was conscious of his own level of ignorance. Unlike Socrates, other philosophers were unaware of their limitations and lack of knowledge (Guthrie, 1960).

Although the use of the Socratic Method has some uniform features, it has been this researcher's experience that this method can also be heavily influenced by the temperament of the instructor's knowledge base. Hence, the method is suitable when the instructor is proficient in the implementation of the Socratic Method. The instructor must demonstrate knowledge and proficiency in spontaneously asking questions to draw valid principles and conclusions from the learner based on this methodology (Bruner, 1996).

Likewise, oppositional arguments to the central ideas of Constructivism assert the theory is commonsensical in nature and subjective to one's experience base (Millar & Driver, 1987). The approach views knowledge as personally and socially constructed, rather than objective and revealed; additionally, theories are constructed and therefore are provisional (Abdal-Haqq, 1998). As a result, this learning medium is reflective and experiential and not absolute (Millar & Driver, 1987). Furthermore, Constructivism is

deemed as actively fashioned by the learner and is biased by the preexisting elements of the outside world and the mind of the learner (Abdal-Haqq, 1998).

Learning transpires through the acquisition of new knowledge, behaviors, skills, values, preferences, or understandings, and involves synthesizing various forms of information. Although learning is acquired through a variety of mediums, a common thread exists throughout that encompasses individual experiences and personalization of the processes (Magrini, 2009). Knowledge is gained through experimentation, as opposed to being told what will result (Jarvis, Holford, & Griffin, 1998). Both approaches, Socratic Methods and Constructivism, emphasize that information be processed and experienced on an individualized level (Boghossian, 2006). This knowledge occurs when learners deduce personal inferences, discoveries and conclusions; individualized learning thereby occurs through an experiential approach. For example, patient learning can occur when a physician talks to a patient about his or her condition and the physician adjusts his or her communication based on the patient's health literacy level and current level of understanding regarding what the physician is communicating. Moreover, both methods emphasize that learning is not an all-or-nothing process and that learning helps people discover that new information is constructed upon the knowledge they currently possess (Hannafin, Land, & Oliver, 1999).

**Curriculum**

According to Merriam-Webster (2010), curriculum is defined as the courses offered by an educational institution or a set of courses constituting an area of specialization. The origin of the word dates back to 1824 and it refers to a running course

or the course of deeds and experiences through which children grow to become mature adults and to yield success in adult society, as further defined by Bobbit (1918). Bobbitt's (1912) writings, which are reflective of the transformative experience, noted

> Educate the individual according to his capabilities. This requires that the material of the curriculum be sufficiently various to meet the needs of every class of individuals in the community and that the course of training and study be sufficiently flexible that the individual can be given just the things that he needs. (p. 269)

Bobbitt (1912) created five steps for curriculum development, including the analysis of human experience, job analysis, deriving objectives, selecting objectives, and planning in detail. Component one separates all human experience into major fields; this separation is followed by the second characteristic, where the fields are broken down into more specific activities (Bobbitt, 1912). The third element is to form the objective from the abilities needed to perform the activities. Next is the fourth factor, where the objectives are selected to find ones that would serve as the basis for planning activities for the students. The last step is to lay out activities, experiences, and opportunities that would be needed to obtain the objectives (Bobbitt, 1912). As a researcher and educator, I believe this process is ongoing to evaluate the knowledge learners have procured in order to ensure adequate perception of the intended focus of the lesson.

Garrett's (1994) work supports the aforementioned ideology regarding curriculum development. Garrett shares that in order to validate any experience related to people's personal achievements, knowing how well they understand helps students develop a sense of achievement as a whole. Additionally, Millar (2004), an educator, reinforces

Bobbitt's position that learners must play an active role in the assessment and evaluation process, including clearly understanding and applying the evaluation criteria regarding their progress in measuring their performance. Bobbit (1912) also suggests that curriculum encompasses the entire scope of formative deeds and experiences in life, both in and out of the academic setting. These experiences extend to those that are unplanned in life as well as those that are designed as purposeful and formative tasks that occur as an adult and self-directed member of society (Bobbit, 1912). This philosophy is also echoed by the Academic Quality Improvement Program of The Higher Learning Commission (2005).

Curriculum in formal schooling or formal education is more concrete regarding the aspect of learning. Curriculum in this scenario represents a set of courses, course work, and specific content offered at a school of higher learning (Dietel, Herman, & Knuth, 1991). However, coupled with that approach is the suggestion that active engagement of the student is necessary, as well as the teaching, learning, and assessment aspects of the proposed course of study as demonstrated by curriculum (Krathwohl, 2002). Many educational institutions are trying to balance these two views (Squires, 2009). Although a common knowledge foundation in the form of core curriculum is necessary in a specialty major, students should also be able to pursue a free choice of courses. Therefore, an essential feature of curriculum design is the identification of prerequisites for each course as well as electives offered (Dietel et al., 1991).

**Curriculum Evaluation**

Despite the progress in understanding the way in which students learn, the design in teaching practice in higher education often remains unaffected. Lecturers have not

been encouraged to draw upon theoretical developments as a means of improving curriculum design and delivery (Riding, Fowell, & Levy, 1995). The area of curriculum is one of controversy, concern, and conflict. MacDonald suggested that "in many ways, all curriculum design and development is political in nature" (as cited in Beyer & Liston, 1996, p. 9). Continuing in that line of reasoning, Olson and Rothman (l993) offered that while the last decade has been one of challenge and excitement for American education, the fragmented and isolationist manner in which many of the reform efforts have been implemented brought about question with regard to ongoing change.

Standards for Accreditation of Medical Education Programs leading to the Medical Doctor Degree were reissued in June 2008 by the Liaison Committee on Medical Education (LCME, 2012). The LCME is recognized by the U.S. Department of Education as an accrediting agency for educational programs, specifically for the accreditation of medical education (LCME, 2012). According to Section II, Educational Objectives: Inclusive of Structural Design, Content, Teaching, Evaluation and Curriculum Management, ED 6 and 7 states,

> The curriculum must incorporate the fundamental principles of medicine. It must include current concepts in the basic and clinical sciences, including therapy and technology, changes in the understanding of disease, and the effect of social needs and demands on care. (p. 7)

Although a number of initiatives at national and local levels have been established to create the conditions for innovative change for academics across disciplines in America, almost 10 years have passed since the American Medical Association Ad Hoc Committee on Health Literacy first emphasized the importance on incorporating health

literacy training into graduate medical education (AMA, 1999). While some progress has been made, the researcher believes that greater attention to health literacy is still needed in medical education. Many opportunities exist to educate medical students and residents about health literacy and the communication skills recommended for clear communication.

**Summary**

A myriad of research involving health literacy and its impact on healthcare has centered on the physician's office and the hospital, where the majority of patient communication, teaching, and learning takes place and where patients are most likely to receive their care. However, it is this researcher's opinion that more focus recently has been on the changes in healthcare reform, changes in the healthcare delivery system, and the growing trend toward patient-centered medicine; as a result of the dramatically changing medical landscape. According to the U.S. Department of Health and Human Services Office of Minority Health (2001), Schools of Medicine are charged with the decisions to revise their medical curriculum and prepare medical students for a country where mainstream doctors embrace the social and cultural issues facing our nation.

Medical schools throughout the country have been conflicted by the fact that most of their teaching resources have been utilized to guide the students to make a proper diagnosis and evaluation of the patient as opposed to devoting those resources to learn how to listen to the patient's needs and communicate with them on a very basic level (Fischhoff, Brewer, & Downs, 2011). Schools of Medicine have recognized this gap in their curriculum and have initiated a concerted effort to train their residents and medical students on how to communicate with their patients to ensure a complete understanding

of their diagnosis and treatment regimens (Cooke, Irby, & O'Brien, 2010). The researcher believes more medical schools need to place a greater emphasis on such curricula and with all the focus on quality measures in today's medical world, it is imperative that they do so. Without a doubt, however, educational curriculum is one of society's foundational components (Johnson, 2001). Changes in society and the ability to adequately communicate are very much present (Curry et al., 2000). The responsibility to address the needs created by this change lies at the door of medical educational leaders, medical professors, medical students, university administrators, and community leaders. It is this researcher's belief that it is incumbent upon our medical schools to develop a process that will achieve effective curriculum revision and will address our nation's health literacy issues through preparation of medical professionals and economic support of the health system of the United States of America.

# Chapter Three: Methods

## Participants

This research study employed a mixed method sequential approach using both qualitative and descriptive quantitative methodologies to investigate the number of Schools of Medicine within the United States that offer health literacy as a component of their curriculum as a course of study within the academic setting. Additionally, in order to further substantiate the survey findings, a comparative of on-line curriculum was performed to corroborate both descriptive quantitative survey results and the qualitative interview results. Through this cross-comparison, a variety of collection points were verified. The "subject" in research studies includes those individuals or entities whose participation in the study was limited to providing information (Fraenkel & Wallen, 2009). For the purpose of this study, 154 Medical Schools in the United States were approached to act as potential subjects. Those potential subjects are inclusive of 126 of those schools who award a degree of Doctor of Medicine and 28 which offer a Doctor of Osteopathic Medicine degree. The list of the schools was obtained from The Council on Medical Education and Hospital Medical Colleges of the United States (LCME, 2012).

The survey population was determined on the need to evaluate the survey findings based on state, region, and divisional sector comparison. While previous studies have explored health literacy and its impact in hospitals, physician practices, and disease specific diagnoses, no studies have been identified by the researcher focusing on the implementation of health literacy curriculum in the Schools of Medicine throughout the United States. Because like studies were not previously conducted, population

differentiation has not been assessed. Consequently, since the study included all Schools of Medicine in the U.S., there was no limitation in the selection of the population researched. It is through this unbiased approach in sharing the study findings and its intent that that any perceptual bias was eliminated.

As a registered nurse with 29 years of experience, I was supported by a number of collegial contemporaries within the healthcare sector encompassing those in managed care, hospitals systems and the Schools of Medicine throughout the university systems to pursue this research. It is through this professional support system, together with a heartfelt dedication to health care quality, and as an advocate for excellence in education that enabled me to search for and obtain the necessary information required to complete this timely and pertinent research study.

**Research Questions**

The overarching research question of the study posed the following: What is the status of the nation's effort to promote health literacy by adding courses in health literacy to medical school curriculum?

The question speculates whether medical schools throughout the United States have expanded their curriculum to include health literacy courses in an effort to address health literacy and enhance patient understanding. Although there was not enough evidence or previous studies to create a formal hypothesis on this matter, the researcher's assertion regarding the study premised that medical schools throughout the United States have not expanded their curriculum to include health literacy courses in an effort to address health literacy concerns and enhance patient understanding.

Research questions and related sub-questions included the following questions: Do medical schools align their health literacy courses with the components [factors] of best practice in health literacy as set forth by The Council on Medical Education (CME)? How are medical students different as a result of participating in health literacy promotion courses (knowledge, understanding, skills, attitudes, values, and interest adult learning competencies)? Is the website information on medical school health literacy promotion curricula clearly present? and How does the perception rendered in the surveys and interviews align with the published curriculum on the medical schools' websites? Research questions that guided the survey and interview process were as follows. What, and how many, Schools of Medicine in the United States are offering a health literacy course as part of their medical school curriculum? How long has health literacy been a part of the medical schools' curriculum? Is a health literacy course a required course or an elective course in medical schools across the United States? Is the promotion of health -literacy a multiyear curriculum? What evaluation tool is used to assess the objectives of the health literacy curriculum? and, What key elements are included in U.S. medical school health literacy courses?

**Instrumentation**

According to Fraenkel and Wallen (2009), when a study lacks internal validity, one or more alternative hypotheses exist that explains the outcome. Therefore, in support of thorough research, and in order to minimize threats to internal validity, steps were taken to ensure solid research findings.

The proposed research study included four domains of evaluation by which survey questions were formulated, thereby serving as the descriptive quantitative

measure. The first primary domain of the research included the awareness or the knowledge that health literacy curriculum exists within the university and the general knowledge of how it is shared with or relayed to medical students. The second domain target included that of content and what components make up the health literacy course to ensure that key issues are being taught to the medical students. The third element involved that of impact, or the degree to which the health literacy curriculum affects the behavior of the medical students and school administration in terms of how they talk about healthcare delivery and patients' understanding of their health status, opinions, and outcomes. Finally, the focus was the evaluation, which measured the implementation or the existence of an evaluation process to understand, verify, and validate the impact health literacy curriculum had on medical students. In the development of the tool, both usefulness and meaning were seen as major drivers of the process to ensure reliable research findings.

Research was reviewed pertaining to the target areas of this study; however, bodies of work involving the evaluation of health literacy curriculum and its implementation in Schools of Medicine within the United States have not been researched. Thus, pre-developed research questions for survey use, designed to address health literacy curriculum as a topic in Schools of Medicine, were not available. Therefore, survey questions were developed to study the elements in question concerning heath literacy curriculum and its application in Schools of Medicine in the United States. Recommendations were taken from Salant and Dillman (1994) in the effectual instrumentation and design of the survey tool. According to these authors, crafting a survey tool to measure the intended purpose of the research remains crucial in the process

of survey development. These development steps include, but are not limited to, avoiding long questions in order to attempt to eliminate confusion, refraining from using jargon that may not be familiar to the respondent, refraining from leading the respondent into a certain answer, focusing on one issue per question, and using the same anchors throughout the survey (Salant & Dillman, 1994).

Reliability is noted as the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials in research (Carmines & Zeller, 1979). Another component of creating a solid design and obtaining accurate findings includes validity (Creswell, 2009). Validation refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure (Creswell, 2009). Reliability, on the other hand, is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring what it intends to measure (Creswell, 2009).

In order to evaluate the respondent population for regional comparison, demographic data for the Medical Schools including state, region, and division was appended to the survey master-tracking file (see Appendix A). All state, region, and divisional information reflected the 154 Schools of Medicine within the United States. The pre-coded data were then aligned with the appropriate survey logon and password for each School of Medicine responding to the survey. The pre-coding data utilized in the survey segmentation of the population was defined according to the U.S. Census Bureau demographic and population segmentation (U.S. Census Bureau, 2010).

First, pre-survey activity was conducted, including telephonic contact of the curriculum administrators to seek buy-in of the research and to obtain agreement to

participate. This method was employed in order to reach the intended target population as well as to seek a current and accurate contact and to avoid mobility risk of the proposed respondent. Second, a recruitment email was sent to the curriculum administrators or the Medical School contact who agreed to participate. This process served as a preliminary assurance, reducing the likelihood of a small study response rate and thereby allowing an inference to be made regarding the sample size. A second email was then disseminated to those study participants. This communication included the written consent agreement and the survey access information, inclusive of a unique logon and password. The survey cover letter stated both the purpose and intent of the study and provided directions for the completion of the survey tool (see Appendix B). The survey instrument was evaluated for face validity and reliability by identifying any points of confusion, by ensuring that domain questions carry a common theme within each domain, and by assessing if the survey instrument serves the intended purpose.

A mixed method was used in order to obtain and assemble data for this research. A triangulation approach allowed for the exploration of both the existing curriculum, which exists in Schools of Medicine across the United States, as well as any proposed changes and implementation plans. Questions were answered from an on-line survey tool, and individual interview sessions were conducted. In order to further substantiate the survey findings, a comparison of on-line curriculum was performed to corroborate both descriptive quantitative survey results and the qualitative interview results. This process served as an assurance, thereby avoiding a potential small study response rate and also allowing an inference to be made. Through this cross-comparison, a variety of collection points, including that of on-line comparison of the curriculum, were verified

and a logical conclusion was stated. It is through this approach that the researcher's claim was able to be deemed as supported or nullified. Additional demographic information included in the survey inquired as to the respondent's title within the School of Medicine and the length of tenure within the School of Medicine.

**Program Examined for Study**

Because medical advancements and treatment modalities are more complicated than ever, physicians often assume that patients understand their explanations and instructions. Unfortunately, a disparity exists between the physician's level of communication and the patient's level of comprehension (Jayadevappa & Chhatra, 2011). Therefore, based on said research, it is this researcher's opinion that it is through student knowledge of health literacy concepts and the ability to apply this knowledge in a clinical setting that barriers of miscommunication may be removed, thus leading to better, safer, and more effective care.

The number of Schools of Medicine within the United States that offer health literacy as a component of their curriculum as a course within the academic setting was evaluated for the purpose of research study. Additionally, the environment of Medical School curriculum, inclusive of the format and course content of health literacy, was assessed in order to ensure that learners have the literacy skills and cultural information necessary to assess care instruction and healthcare outcomes. The communication of complex medical information was assessed to fully evaluate the methods employed to adequately communicate complex information to a variety and wide range of patients. One of the key components in assessing health literacy and its related curriculum is the actual design of the survey instrument itself. In the subsequent section, the description of

how the survey instrument was crafted will be outlined to illustrate the process of that key component of the research project.

Proper survey design is imperative to the survey because proper survey design supports the overall objective for collecting data in order to properly answer the research question (Fraenkel & Wallen, 2009). Therefore, for the purposes of this study, the survey instrument used was an on-line tool utilizing proprietary software for the purpose of data capture. A confidentiality statement was included for each survey, explaining that all responses were anonymous with no participant identifiers included. All data captured was housed in a secure data environment. In addition, the database for this particular study was housed as a single database, thereby not sharing the data with any other program. This measure was taken to ensure data integrity and to reduce the risk of a shared environment data error. All electronic data were erased after completion of the project. The final instrument was tested for accuracy before going live to once again ensure data integrity. In addition, the proofing measure afforded the opportunity to gain insight into how long the survey takes to complete and to gain a realistic expectation of the research participation. Following completion of the research, finding results were shared with the study respondents in order to both increase awareness of those schools surveyed and allow national and regional comparisons of the alignment of the promotion of health literacy curriculum currently being offered in the School of Medicine.

**Methodology**

In terms of survey methodology, the study utilized core domains, also known as categories or dimensions, in the descriptively quantitative and first phase of this research. The quantitative research core for the domain elements used a five-point Likert-type scale

ranging from Strongly Agree to Strongly Disagree and included a neutral point. The Likert scale, which is the most commonly used attitude scale in research, allows survey respondents to indicate their degree of agreement or disagreement (Fraenkel & Wallen, 2009). Quantitative research involves the measurement along a scale to determine how much of a variable is present and is reported in terms of scores (Fraenkel & Wallen, 2009). The method of survey was chosen by this researcher in order to determine the number or frequency, and these frequencies were converted to percentages to report categorical data.

A comment section was included in the survey tool to glean additional information and allow open-ended responses, thus providing an opportunity for supplemental or anecdotal information to be obtained. This information was used to elicit a common theme or focus, which is employed in qualitative research. A secondary qualitative measure was implemented in the form of focus groups. This method was chosen and employed to further seek findings and serve as a building block to the initial descriptive quantitative results. Qualitative methods were also chosen to potentially avoid any unexpected results which arise in singular quantitative research (Creswell, 2009).

In social science studies, triangulation is often used to indicate that more than two methods are used in a study with a view to validate the research results. Thus, triangulation involves using more than one method to gather data, such as interviews, observations, questionnaires, and documents (Denzin, 1978). The use of the aforementioned methods was utilized to facilitate validation of the data. Additionally, through the application of these methods, this researcher hoped to avoid both weaknesses

of the study and any intrinsic biases, which are common from single source based research (Bryman, 2006).

**Gathering Data from Schools of Medicine**

Medical Schools in the United States, inclusive of 126 of those that award a degree of Doctor of Medicine and 28 that offer a Doctor of Osteopathic Medicine degree, were queried. A list of these schools was obtained from a compendium of The Council on Medical Education and Hospital Medical Colleges of the United States (LCME, 2012). The survey findings included the following data: How many and which Schools of Medicine will identify any regional disparity of schools offering, or not offering, health literacy as part of their curriculum? The length of time the curriculum has been offered which addressed the timeliness issue, as it relates to any change in the curriculum, an essential part of the study. Course requirement or elective course offering provided the necessary analytical information in support of the essential question. Identification of the key elements of the curriculum provided insight as to the rigor and effectiveness of the curriculum offered. Lastly, the assessment tool utilized to validate the Medical Student perception as to the use of the learned objective in their practice of medicine assisted in validating the effectiveness of the learned material and was essential to the dissertation.

**Interview**

During the survey process, respondents were questioned as to whether they would like to participate in a post survey interview. Following survey response return, identifiers were removed from the data in order to isolate those respondents. A list of those individuals were then contacted and arrangements were made for a mutually agreed

upon time and date for the interview to be conducted. Prior to the interview process a list of the interview questions were sent to the interviewee. The questions included, but were not limited to, how the promotion curriculum was addressed in the medical school's program, how medical students were made aware of the importance of the promotion of health literacy in medical school training, the barriers that existed in the implementation of the health literacy curriculum, the key elements of health literacy curriculum that were being taught, the medical school student's current skill set in the implementation of Health Literacy, what could be done to assist students in improving in the practice of Health Literacy, and whether there were any internal continuous quality improvement processes in place to improve communication in the area of Health Literacy. Finally, an overall comment question was asked allowing additional comments to be expressed by the interviewee (see Appendix C).

Interview sessions included 14 participants in a decision-making capacity regarding medical school curriculum development and oversight. All interview sessions were conducted by the researcher. Prior to the interview, a list of interview questions were shared with each participant approximately one week before the interview. Sharing the question content served as a means by which to inform the participant of the area of focus. Interview prompts and questions included the following: Describe how the promotion of health literacy curriculum is addressed in your program. How are medical students made aware of the importance of the promotion of health literacy education in their training? Discuss any barriers to implementing this curriculum in medical schools. What are the key elements of health literacy being taught at your school? What firsthand experience do medical students receive in trying out their own skills in health literacy?

Discuss support and feedback mechanisms built in to the program to help students improve their practice in this area. Have internal processes been put in place for continuous improvement in this area? Are there any additional comments you would like to make in conclusion?

According to Rennekamp and Nall (2002), members of a focus group should have shared common characteristics. The goal of the focus group within this study was to listen to the underlying reasons why the participants responded the way they did on the survey (Rennekamp & Nall, 2002). It was also to glean additional information related to the topic being studied. To that extent, the goal of the sessions was to gain a better understanding of how representatives from Schools of Medicine perceived certain subjects regarding health literacy. Through the interview process it helped to identify trends that would lend additional insight to the subject of health literacy. This insight would later lead to an increased understanding why health literacy was or was not promoted within the Medical School environment. Interview sessions lasted approximately 45 minutes and were held via telephonic sessions. Interviews were recorded and later transcribed in order to code the data to identify themes of the discussion. Interview sessions served as an effective means to gather more in-depth information on views identified through the survey, qualitative information on the specific issues or topics surveyed, and additional facts and views indicating why participants responded in specific ways as well as to identify any further potential needs and ideas on better ways of conducting curriculum development.

Interview sessions were also seen as an effective way of elevating the stated vision into action. The purpose of soliciting feedback was to fully understand the

position of the academic institute in the improvement process. Interviews were conducted as a secondary measure in order to query information concerning those that represent regions. The interviews were structured to be as representative as possible via stratified representative sampling.

**Data Analysis**

Standardizing the conditions is seen as the way in which the survey is implemented and the data is collected (Fraenkel & Wallen, 2009). Data were analyzed for 126 of those that award a degree of Doctor of Medicine and 28 that offer a Doctor of Osteopathic Medicine degree. The data from the survey questions was processed and analyzed utilizing proprietary software to produce the following reports: an Overview Report for the entire audience which listed each survey question by percent favorable, percent neutral, and percent unfavorable, plus a mean score. An Individual Items Report which listed a breakout of responses for each question; it indicates how many people rated a 1, 2, 3, 4 or 5 (which corresponds to the Strongly Disagree to Strongly Agree scale) and graphically displayed. By viewing this report, the researcher identified the top-box score for each survey question. Finally, a Comparison Report, which displayed a side-by-side comparison of the various data cuts versus the entire audience scores in an overview format.

In order to use the content of the interview, the researcher focused on key words to develop themes, thereby not looking for everything but a single thought that reflected the content of the question posed or the context of the question asked. Labels were assigned to words, phrases, and text for grouping purposes. The groups were then coded. Some codes were driven by the question content; however, some responses fell into a subtopic

grouping. Again, each grouping was color-coded to reflect the topic related to the code. For example, with the topic of barriers to implementation, words such as challenge, difficulty, and frustration in putting the courses in place were associated with that category and considered as subtopics.

Themes and the coordination of various pieces of data and evidence were connected in order to build a sequel regarding the topic discussed. These themes formed a pattern related to the identity of the terms used. Themes were also found across several questions and were used as evidence of a particular premise for the research finding. After coding the interview, the relationship between the codes was evaluated in order to draw a conclusion. This process served as the platform for bringing several pieces of evidence together between different responses of the interview.

The survey and interview results were collated in order to examine the degree to which the Schools of Medicine throughout the United States integrated health literacy into their curriculum. This research provided vital insight as to the nation's effort to promote health literacy by adding health literacy courses to Medical School Curriculum, by allowing the researcher to evaluate national and regional comparisons of the alignment of promotion of health literacy curriculum that is currently being offered in the School of Medicine. Additionally, the researcher shared such findings with respondents in order to increase awareness of those schools surveyed as to their individual status.

**Use of Written Comments**

All transcribed written comments related to the survey questions were categorized. Comments were coded as positive, negative, or equivocal. The comments were viewed in light of the statistical data to see if any insight would be gleaned as to

why respondents rated questions in a certain way. The descriptive statistics tell part of the story but the comments added details providing a robust picture of the research findings.

A variety of methods were used to obtain and assemble data for this study. A multidiscipline approach allowed for the exploration of the existing curriculum that exists in Schools of Medicine across the United States as well as any proposed changes and implementation plans. Analysis of the data in Chapter 4 supported the rigor of the research methods.

## Chapter Four: Results

This study assessed the presence of patient health literacy curriculum through the collection of survey data. Specifically the elements of the curriculum were investigated, as measured by personal interview followed by an online verification of those elements. In addition, the curriculum's impact on medical students' ability to promote health literacy among their patients was explored, as measured by the perceptions of administrators of medical school curricula. Course content was also examined, as measured by an independent assessment of the medical schools' curriculum available through their website, which was analyzed for discrepancies between findings gleaned from both the descriptive quantitative and qualitative findings. Survey questions and focus group interviews were designed to provide essential insight into four specific areas or domains. The first domain of the research included the awareness or the knowledge that health literacy curriculum exists within the university and the general knowledge of how it is shared with or relayed to medical students. The second domain included content and what components make up the health literacy coursework to ensure that key issues were being taught to the medical students. The third element involved to what degree health literacy curriculum affected the behavior of the medical student and school administration inclusive of the terms regarding how the curriculum addressed healthcare delivery and patients' understanding of their outcomes. The final focus of the research measured the implementation and process in which understanding, verification, quantification, and validation of the impact health literacy curriculum had on medical students.

This research study employed a mixed method sequential approach using both qualitative and descriptive quantitative methods to investigate the number of Schools of Medicine within the United States which offer health literacy as a component of their curriculum as a course of study within the academic setting. Qualitative research is largely defined as research which produces findings that are not arrived at by statistical procedures or other measures of quantification (Strauss & Corbin, 1990). As applied to this research, individuals of those schools were surveyed and interviewed to seek further clarification to the following: the promotion of health literacy in the Medical School curriculum, the importance of health literacy training, barriers to implementation of the curriculum, key elements being taught, opportunity to practice the learned skill, learned support, and feedback mechanisms built into the program to help students improve, and verification of an internal process for continuous quality improvement. All elements were examined through national and regional comparisons of health literacy curriculum currently being offered in the School of Medicine across the United States.

This study contributed to documenting the current state of integration of health literacy promotion in medical education in the U.S., or lack thereof. It is this researcher's presupposition that awareness of, and assessment of health literacy should be part of physician training and health system culture in order to help reduce health disparities in our nation. The data depicted in this chapter may be used by other researchers to build on research efforts dedicated toward furthering the efforts of the promotion of health literacy curriculum in medical education across the nation. The survey population for the on-line survey consisted of all Schools of Medicine within the United States. This selection of all schools represented an authentic representation of a cross-section of the nation.

## Results and Analysis of Data from On-line Surveys of Medical Schools across the United States

All respondents provided demographic information, respondent titles, and length of employment in their current position on the survey tool. A total of 71 surveys responses were received (see Appendix C). Of the 154 Schools of Medicine who agreed to participate, a total of 151 surveys were sent via email only to the accredited and licensed schools. After a number of schools did not respond to the initial survey request, follow up invitations to participants were made for a total of three attempts resulting in a return rate of 47% within a six week time frame; January 24, 2012 and ending February 28, 2012. Results of the survey are presented with a 90% confidence with an error rate of plus or minus 7.2% (CustomInsight, n.d.). The response rate was acceptable, considering the confidence assertions based and the small sample size.

### Information by Schools of Medicine Survey Location

For the purpose of this study, 154 Medical Schools in the United States were contacted to complete the survey. The list of the schools was obtained from The Council on Medical Education and Hospital Medical Colleges of the United States (Accreditation Council for Graduate Medical Education, 2012). Medical school locations were then categorized by location within the U.S. via regionalization and division used to segment U.S. population through its census bureau (U.S. Census Bureau, 2010). All Schools of Medicine were given the opportunity to respond to the survey and to participate in the focus group. Total responses received by location are listed in Table 3.

Table 3

*Comparison of Medical School Responses within the United States*

| Region | Division | # of Responses | Sample Size | % of Total Response |
|---|---|---|---|---|
| North East | I New England | 1 | 3 | 1.40 % |
| | II Mid Atlantic | 14 | 32 | 19.71 % |
| Midwest | III East North Central | 11 | 21 | 15.49% |
| | IV West North Central | 8 | 15 | 11.26% |
| South | V South Atlantic | 11 | 19 | 15.49% |
| | VI East South Central | 8 | 13 | 11.26% |
| | VII West South Central | 6 | 13 | 8.45% |
| West | VIII Mountain | 4 | 21 | 5.63% |
| | IX Pacific | 8 | 14 | 11.26% |
| TOTALS | | 71 | 151 | 100.00 % |

*Note.* This table displays results of survey data gathered from all Schools of Medicine that were completed from the online survey. The first and second column indicates the region of representation from which the Schools of Medicine is located and division of the country represented as defined by the US Census bureau. The third column denoted the total number of valid surveys returned, the fourth what percentage that location was of the total number returned.

State representation as reflected by the region and division are listed in Table 4.

Table 4

*Comparison of Medical School Response Rates by State, Regional and Divisional Representation*

| Region | Division | State | Region Rate |
|---|---|---|---|
| North East | I New England | Maine, New Hampshire, Vermont | 1 |
| Midwest | II Mid Atlantic | Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey | 14 |
| | III East North Central | Wisconsin, Michigan, Illinois, Indiana, Ohio | 11 |
| | IV West North Central | Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa | 8 |
| South | V South Atlantic | Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida | 11 |
| | VI East South Central | Kentucky, Tennessee, Mississippi, Alabama | 8 |
| | VII West South Central | Oklahoma, Texas, Arkansas, Louisiana | 6 |
| West | VIII Mountain | Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico | 4 |
| | IX Pacific | Alaska, Washington, Oregon, California, Hawaii | 8 |
| Total | | | 71 |

For the purposes of this study, the researcher believed it was essential to recognize the locations of Schools of Medicine differed in geographic distribution within the United States. Additionally, some schools have been established for a longer period of time when compared to other universities which responded to the survey. Although all schools were given an equal opportunity to participate, both receptivity to the research and responsiveness to the survey varied by region, division, and state.

Of the top 10 Schools for Medicine in the United States, four of the schools, or 40%, readily agreed to participate and completed the online tool. Two of the 10, or 20%, initially agreed to participate; however, a return survey was not received from those two schools despite follow up reminders sent at two week intervals throughout the survey timeframe. One school, or 10%, unequivocally refused to participate upon initial contact, despite a second attempt to the school that focused on further consideration to participate. With regard to individual interview, four, or 40% of the top 10 schools, agreed to participate in the process. Additionally, 15 leaders within the schools agreed to initial focus group activity; however, due to scheduling conflicts and time restraint, focus group activity evolved into individual interviews in order to complete the qualitative portion of the research. The qualitative individual interview process began March 5, 2012 and ended upon completion of the final individual interview on May 30, 2012. The elements of comparison paralleled those of the quantitative responses and further delved in to the domains of awareness, impact, and evaluation and also added a content component.

The online comparison component was completed following the individual interviews of each school representative. Such comparison evaluated the descriptive quantitative response of the School of Medicine compared to the qualitative responses

given in the individual interview. The responses were then correlated to ascertain if any variance existed when triangulating the results. The elements of comparison paralleled those of both the descriptive quantitative and qualitative aspects of research by verifying the research responses and domains of awareness, impact, evaluation, and content.

**Discussion of the Results**

Responses from the descriptive quantitative analysis schools were descriptively evaluated based on the domains of inquiry inclusive of the following domains as listed on Table 5.

Table 5

*Comparison of Quantitative Response by Domain*

| Domain | Question Number | Number of Questions |
|---|---|---|
| Demographic | Questions 1, 2 | 2 |
| Awareness | Questions 3,4,5 6,7,8,9,11,12,13 | 11 |
| Impact | Questions 10,14 | 2 |
| Evaluation | Questions 15, 16 | 2 |
| Total | | 16 |

Demographic responses from the survey queried the respondent in Questions 1 and 2. The first question asked the respondent about the title they held in the School of Medicine (see Figure 1).

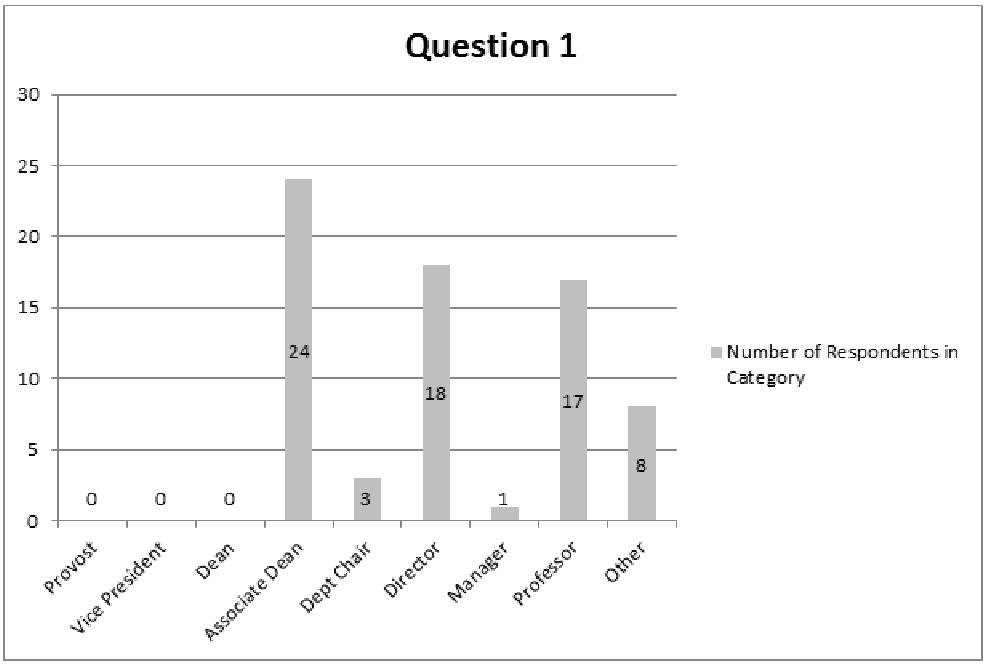


*Figure 1.* Question 1 - Respondents position within the School of Medicine.

Primary titles of Associate Dean status were held by 54% or most of the respondents. An Associate Dean, by ranking authority in academia, possesses significant authority over a specific academic unit and also establishes academic policies (Wolverton, Gmelch, Montez, & Neis, 2001).

Question 2 on the survey inquired as to the length of employment of the respondent at their current position within the School of Medicine (see Figure 2).

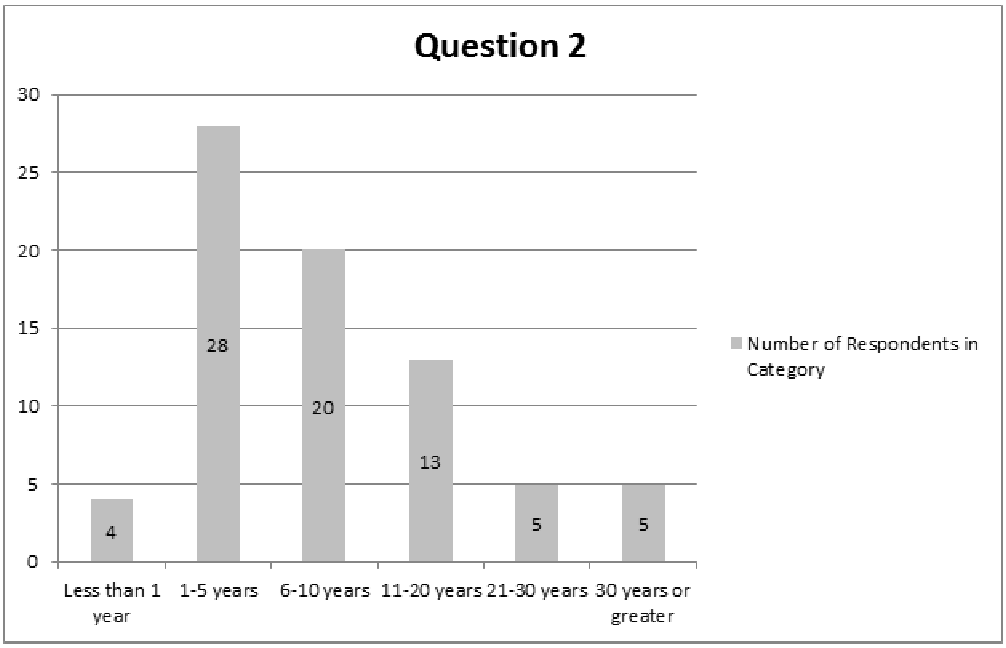


*Figure 2.* Question 2 - Length of employment at current position.

The largest number of the respondents or 37% replied the length of employment at their current position was one to five years.

Question 3 dealt with a more polar inquiry by asking if the School of Medicine currently promoted health literacy as a component of the Medical School curriculum (see Figure 3).

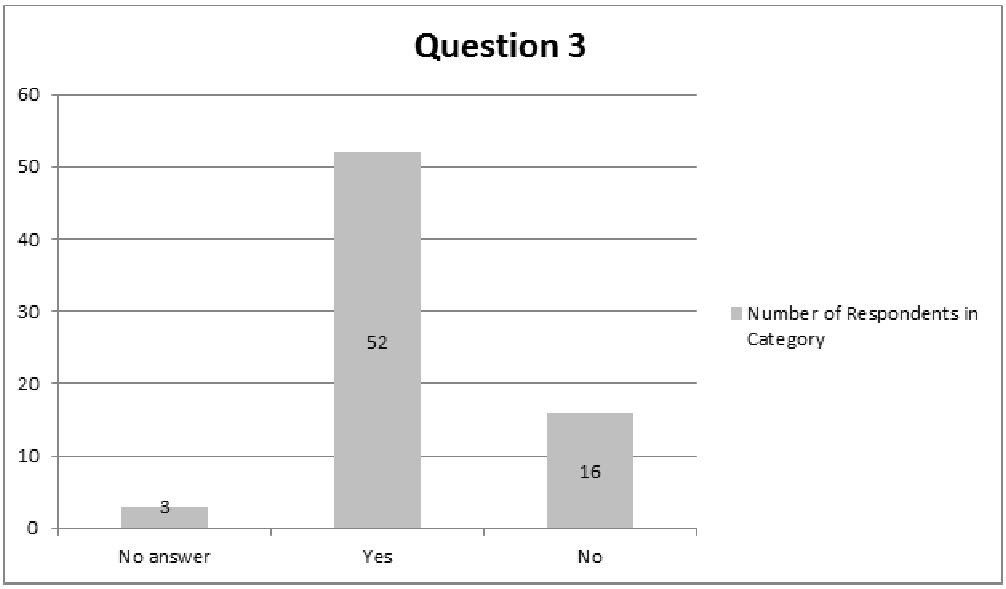


*Figure 3.* Question 3 - Promotion of Health Literacy curriculum component.

This survey question served as evidence that 73% of those responding overwhelmingly agreed a health literacy component was evident in their curriculum; those who agreed were asked to proceed to Question 6. Those responding to the contrary were directed to Question 4, which inquired about the development of a health literacy curriculum. Question 4 was followed by Question 5, which asked the date inclusive of month and year of its development or if no curriculum was being developed a not applicable response was noted as an option. In response to Question 4, 16 respondents, or 2% of the total, indicated there was not a health literacy component embedded in their curriculum. Of the 16, six of the respondents indicated there would be a development of such curriculum in the future. Two of the six noted that a redesign of current curriculum would occur to include the element of health literacy and expand their teaching in this area. Two indicated programs would be implemented in 2013-2014. Two responses were indicated as not applicable. This acknowledgement indicated that there was preparation by those responding to include health literacy in their curriculum.

Question 6 in the survey asked if health literacy curriculum in the School of Medicine was considered as an elective or as a core curriculum component. Responses to this question were noted as possessing a trend toward health literacy as a core curriculum requirement, again reinforcing that health literacy curriculum as a focus for Schools of Medicine in the U.S. (see Figure 4).

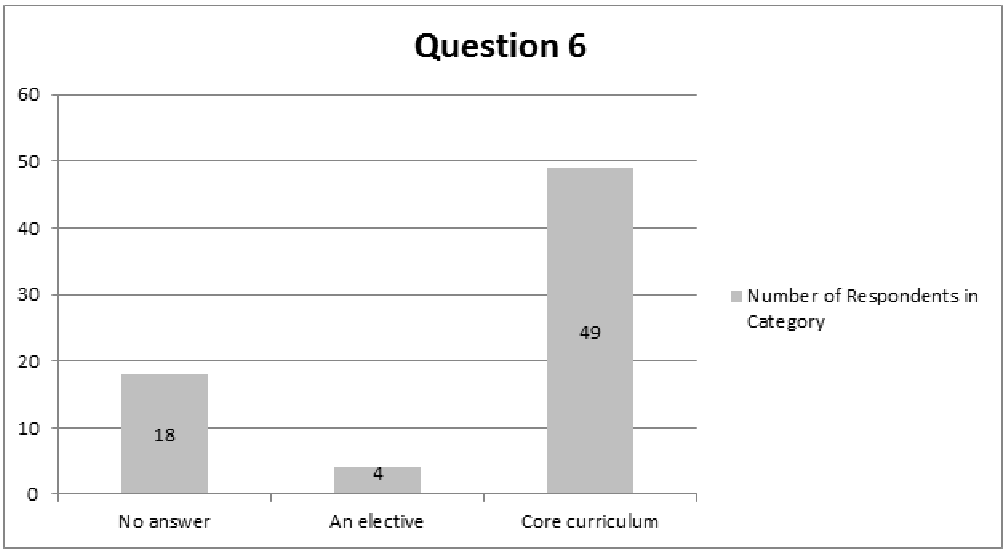


*Figure 4.* Question 6 – Health literacy elective versus core curriculum.

Question 7 requested a response regarding the length of time health literacy curriculum had been in place within their school of medicine. Nearly one half of the 71 respondents indicated curriculum was in place for two years or greater. While some indicated health literacy curriculum was in place for greater than five years, this question supported the existence of such with the Schools of Medicine (see Figure 5).

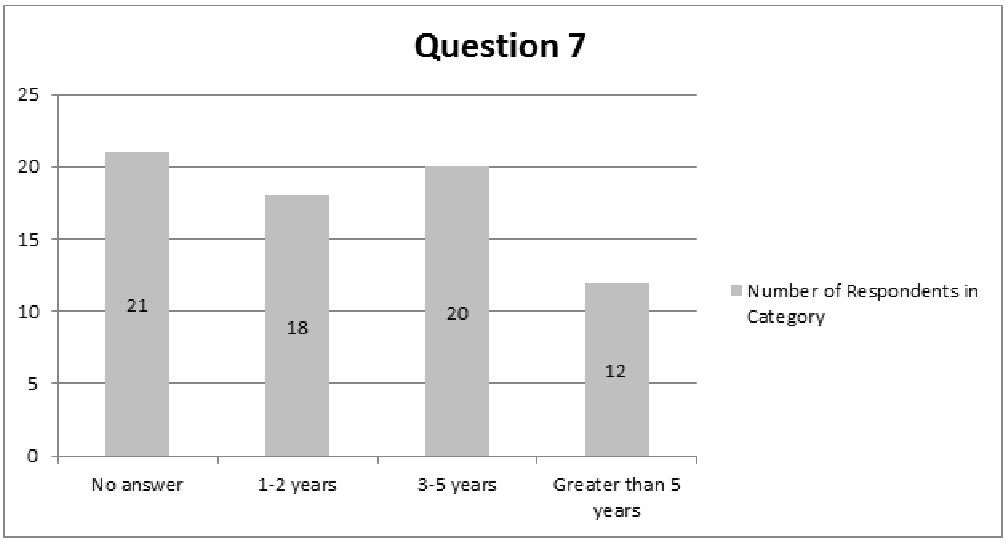


*Figure 5.* Question 7 – Years health literacy has been a curriculum component.

The promotion of health literacy curriculum being introduced to medical students was the highlight of Question 8. Over one half of those responding indicated health literacy was introduced to students during the first year of training (see Figure 6).

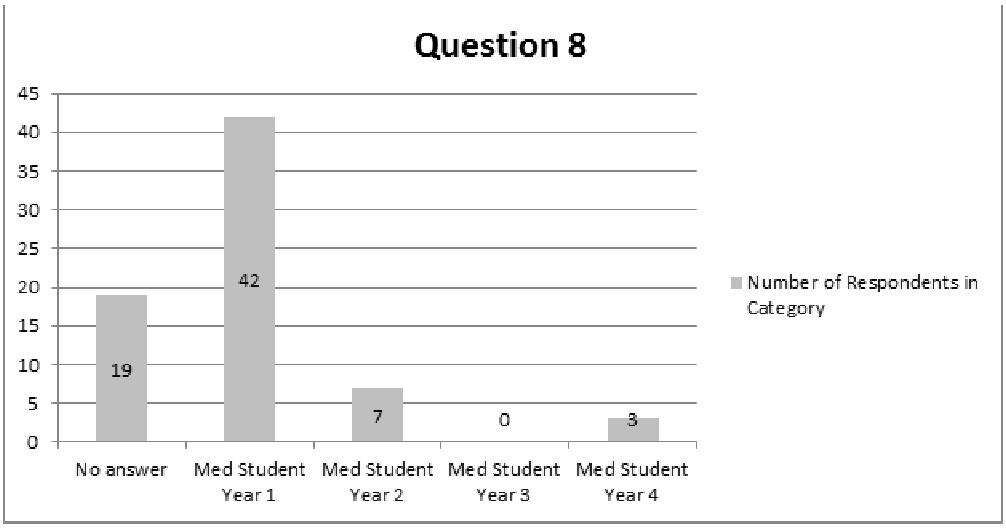


*Figure 6.* Question 8 - Introduction of health literacy curriculum in student training.

Therefore, awareness of the topic began early in the training process. To further substantiate curriculum-building activity regarding the topic, Question 9 was answered affirmatively when asked if health literacy curriculum was a requirement for Medical Students years one through four (see Figure 7).

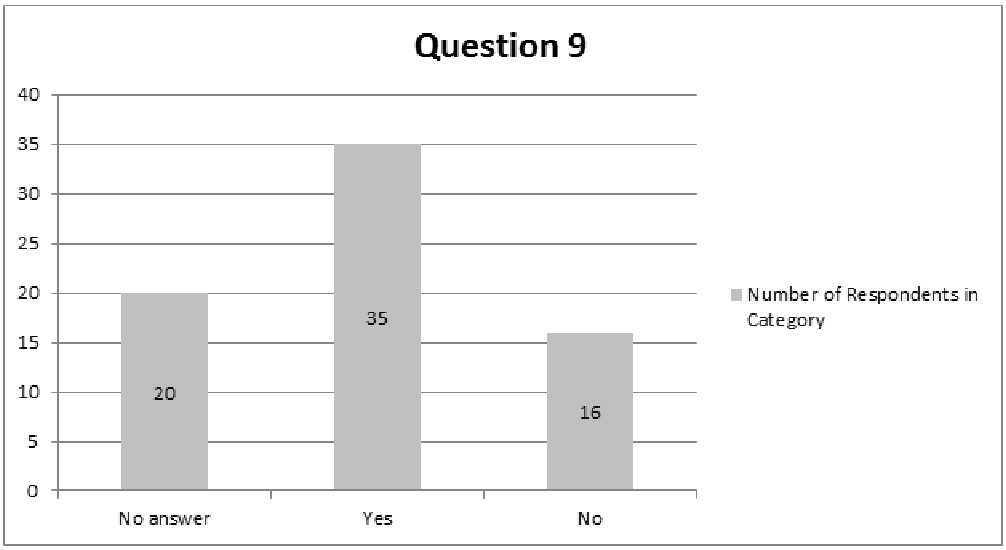


*Figure 7.* Question 9 - Multi-year curriculum requirement.

Question 10 through 14 asked those participants to rank responses ranging from Strongly Agree to Strongly Disagree for the following enquiries. Question 10 asked the respondents if the existing Health Literacy curriculum was developed to reflect the philosophy and goals which guide the School of Medicine. Respondent perspectives regarding health literacy curriculum reflective of the philosophy and goals with that of the School of Medicine had a mean score of 4.22 on a 5-point scale. There were 20 nonparticipants to the inquiry of Question 10. Of the actual observations, agreement regarding this question yielded the majority of this response; however, only 17 participants indicated a Strongly Agree acknowledgement, which could be interpreted as the alignment of the curriculum and the school's philosophy (see Figure 8).

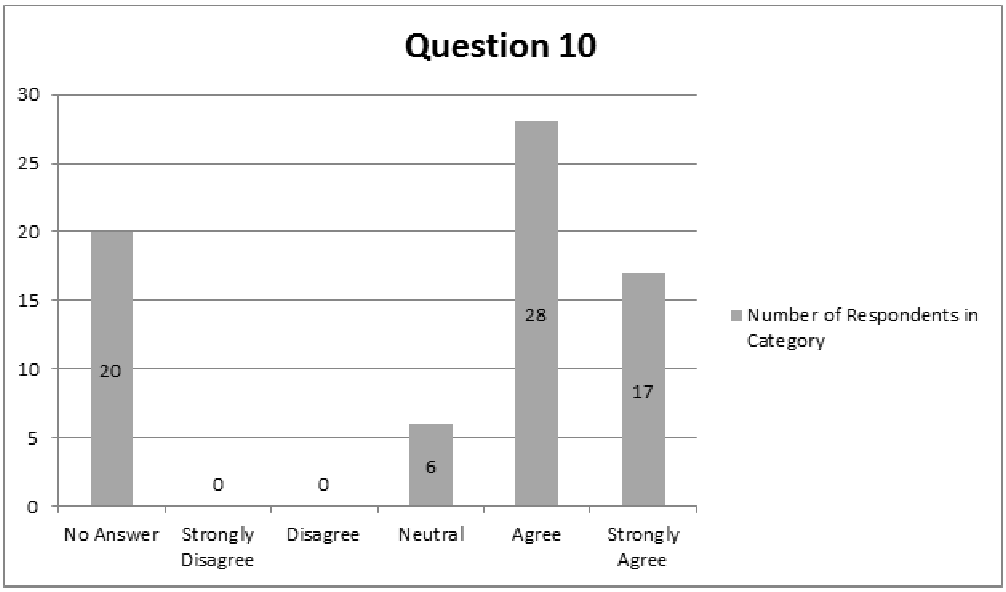


*Figure 8.* Question 10 – Curriculum is reflective of philosophy and goals of the school.

Question 11 probed respondents on the development of health literacy curriculum as the result of the awareness of data that substantiates that health literacy is a major public health concern within the United States. Of the 52 actual participants, the majority agreed the development of such curriculum was indeed a response to evidence which was supported by data indicating health literacy as a major concern within the U.S. (see Figure 9). Specifically, this question ranked a mean score at 4.38, a median score of 4, and a mode of 4 in favor of Strongly Agree.

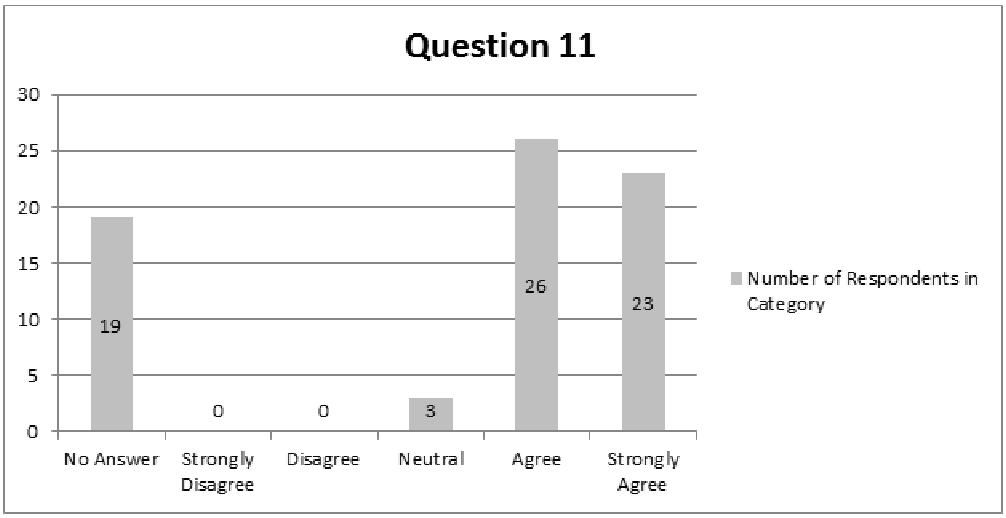


*Figure 9.* Question 11 - Curriculum was developed due to major public health concerns.

Administrative awareness was the focus of Question 12 that inquired as to agreement of awareness of the promotion of Health Literacy within the School of Medicine. Positive responses dropped slightly as a result of this question, with 12 responses as neutral and less than one-half in agreement regarding this inquiry (see Figure 10).

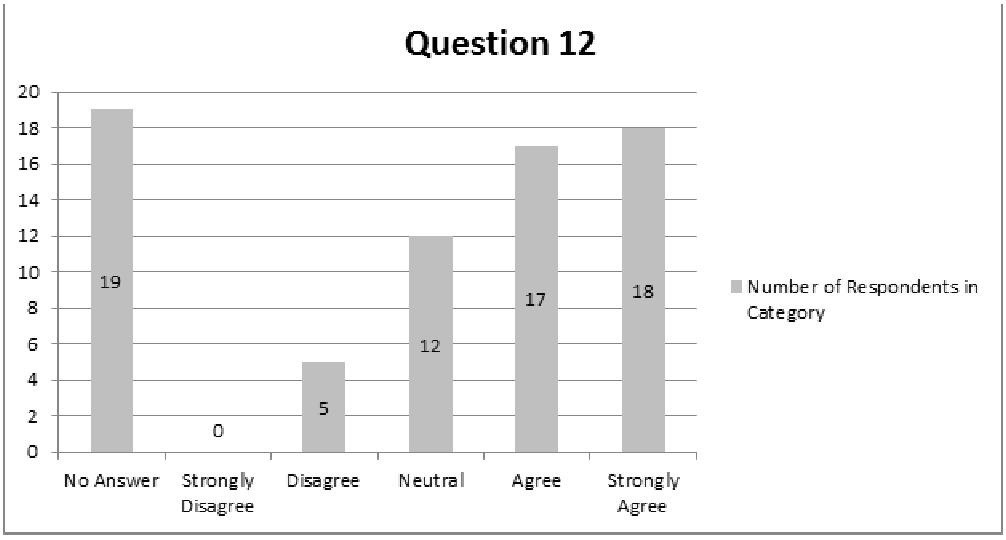


*Figure 10.* Question 12 - Administration is aware of the promotion of Health Literacy.

Respondent views regarding administrative awareness had a mean score of 3.92, a median score of 3.0, however, a mode score ranked at 5. Despite the slight drop in the

average response rate, there remains a positive view of administrative awareness of the importance of health literacy.

Question 13 inquired as to student awareness of the promotion of Health Literacy. More than half of the responses were agree to strongly agree which substantiated the awareness component within the student population Medical Schools (see Figure 11). Specifically, this response is supported by a score mean of 4.0, as well as a score of 4 for both median and mode.

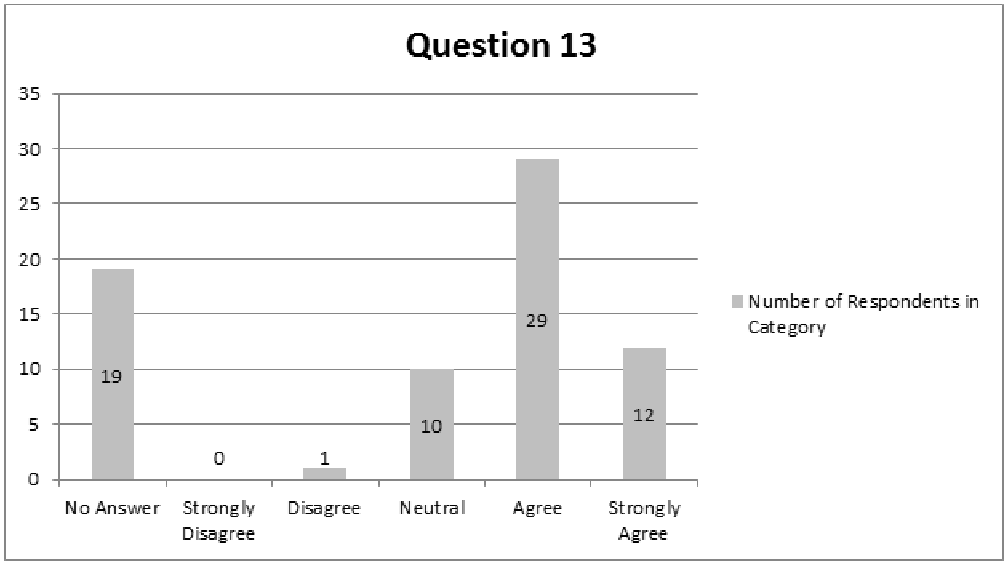


*Figure 11.* Question 13 - Student awareness of the promotion of Health Literacy.

Finally, Question 14 probed respondents as to the building of the process of learning from year to year for medical students regarding health literacy. Over half of those answering noted that the process of learning continued from year to year; however, strong disagreement coupled with disagreement was noted as higher on this question than any other question (see Figure 12). Nonetheless, respondent opinion surrounding this question ranked a mean score of 3.56 on a 5-point scale with a score of 3 for a median score and 4 for the mode, which remains within the positive response range.

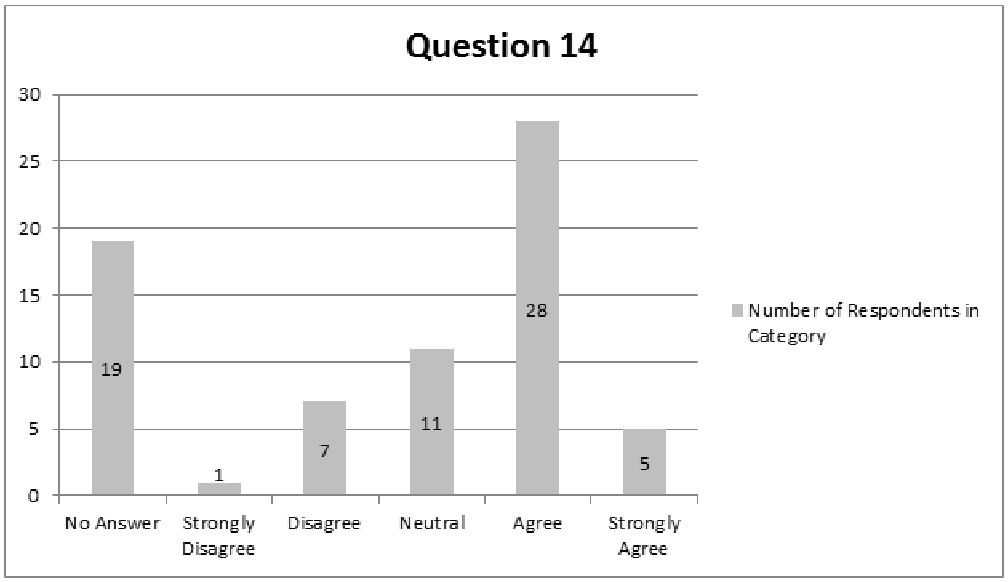


*Figure 12.* Question 14 - Multiyear curriculum and to promote literacy learning from year to year.

Questions 15 and 16 were open-ended narrative responses. Question 15 afforded the opportunity for those responding to the survey to participate in an interview by providing an email address and contact information, thereby also serving as an initial consent to participate of which 100% were queried. Question 16 gave all survey participants the opportunity to share additional information or addendum. Comments were tabulated using qualitative methodology coding techniques to draw meaningful elaborations and collective sentiments from the 13 who chose to comment.

Comments from Question 16 in the survey yielded 13 written responses. The sentiments were grouped into three areas that noted predominant themes of that question. The first theme noted by some was that health literacy was promoted but incorporated or embedded within other course titles or experiences in a global perspective. The second theme that participants expressed was that revamping of the curriculum and or expansion of Health Literacy curriculum was underway or being considered. The third and last

theme found was that integration of health literacy in the curriculum was a crucial element of medical school training.

**Personal Interview**

Personal interviews were conducted in order to further examine the promotion of health literacy curriculum within schools of medicine and so the researcher could further assess the participant's experience and pursue in depth information and follow-up. Personal interview discussions began on March 5, 2012 and were completed with 15 participants from medical schools throughout the United States with representation from four of the top 10 Schools of Medicine. The interviews were composed of six women and nine men. The participants were at their current role in academia between five and 30 years.

The use of telephonic interview for the qualitative portion of this research was employed to obtain factual information and to pursue in depth information regarding the integration of health literacy curriculum in medical school training. Personal interviews were chosen as a follow up to the initial survey to further support and investigate the descriptive quantitative responses. In contrast to electronic survey dissemination, the personal interview allowed the researcher to work directly with the respondent to further express additional detail and share their personal experience involving curriculum development and implementation. Interview questions were electronically sent to those responding following acceptance to participate in order to guide the respondent and serve as a focus to ensure the same information was collected from each respondent. This standardized open-ended interview was used to facilitate both comparison and analysis points yet allowed a degree of flexibility in the responses of the interviewee.

The principal researcher, who also served as the interviewer, began by introducing herself and noting the purpose of the interview, the rationale and the intended purpose of the study. The participants were informed that they agreed to participate in the interview process and the call was being recorded for transcription and coding purposes only. Additionally, participants were reminded the interview questions were emailed to them in advance along with the confirmation of the date and time in which contact was made. The questions were sent in order to allow the most efficient use of their time, and to allow them to gather any additional information to respond to the questions. Notes were taken in order to supplement the recorded conversation. The tape was transcribed immediately upon the conclusion of the interview.

**Analysis of the Data**

Responses of the personal interview discussion were coded in detail to determine the significance of participant's responses to the research questions. All interviews were evaluated by question to list similar topic themes; the researcher then organized those themes to formulate similar categorical relationships. The interviewer began by asking the participant to describe how the promotion of health literacy curriculum was addressed in their medical school. This question was asked to evaluate content of health literacy curriculum. Respondents of 14 of 15, or 94% of schools, unanimously stated that "course work to promote health literacy begins in the first year of medical school training with consecutive coursework in the second year." Additionally, "both promotion and hands on experience was reinforced during years 3 and 4." Coursework included a specific focus on embedding the topic in lecture, in other classes involving body systems and disease impact, assessment and planning, communication courses, patient safety, health ethics,

legal issues medicine, longitudinal studies and interviewing and physical exam. Third and fourth year medical students are exposed to an expanded curriculum, which allows students to introduce an element of practice proficiency. This encompasses additional discussion and practice in face to face interaction in community practice settings, teaching and practicum sessions, hands on patient physical assessment, clinical awareness sessions, and urban-health initiatives, bridge the gap programs and Objective Structured Clinical Examination (OSCE).

The researcher then asked "How the students are made aware of the importance of the promotion of health literacy education in their training". Once again, themes focused primarily around early exposure of the topic. This sentiment was espoused by 90 % of those responding. Direct information given to this researcher about how students are made aware of the importance of the promotion of health literacy education in their training included the following: stressed by individual preceptor and faculty facilitator oversight, in depth problem based learning focusing on the whole patient during the assessment process, clerkship experience, early emphasis and inclusion of the topic as student formulate their medical school training, components of online modules which possess health literacy components in instruction, administration as a driver of and has belief in the subject matter, interdisciplinary practice within the school, validated lesson and learning to encompass a full care spectrum of care and appropriate levels of communication.

The facilitator inquired as to any barriers in implementing this curriculum in their school. Ascertaining promotion of health literacy was the rationale for this inquiry. Responses to this query varied. Of the 15 interviewees, 40%, or six, responded

unequivocally “none.” Other respondents, at 33%, voiced barriers to implementation of the curriculum as time elements, this response was primary associated with the caveat that there are only a number of hours attributed to mandated training. Expertise to teach the subject matter accounted for a 13% response rate, or two of the 15 responses. Additionally, two responses, or the remaining sentiments, expressed where to integrate or embed the topic of health in the subject or coursework of the curriculum.

The organizer then questioned the interviewees as to the key elements of health literacy being taught within the school of medicine curriculum. Again content served as the underpinning for this inquiry. In response to this question, all interviewees noted recognition or awareness as their primary answer. Other areas that emerged as themes included proper assessment of the level of the patient’s ability to understand what was communicated to them, followed by appropriate communication techniques. Also ranked as a primary theme, were the techniques used to validate the comprehension levels of the patient understanding post instruction from the physician. Again, teach back methods were noted as the respondents’ initial response to validate what was being communicated to the patient. Role-play experience was also themed to allow the students a firsthand learning experience as to the issues of literacy. Content directed and didactic curriculum elements focusing on messaging, written and oral communication, along with skills addressing the use of medical jargon, historical cases resulting in legal action were indicated as a second focus and key elements of learning. Instruction encompassing problem based learning, case studies, applied clinical experiences, review of best practices, self-reflection, and presentation were ranked the same.

The researcher surveyed the respondent as to what first-hand experience medical school students received when practicing their own skill in Health Literacy. This question was posed to gauge the impact element of how skills are practiced. Answers to this question varied, although all schools provided a means by which the students practiced their skills in a variety of ways. These opportunities were presented in small group workshops sessions, through individual preceptor learning experiences, classes and coursework practicum, skill building sessions and structured opportunities, application in monitored patient care settings, Learning Edge Academic Programs (LEAP), office clinics and community volunteer opportunities, grand rounds, and OSCE.

Respondents were asked to discuss support and feedback mechanisms built into the program to help improve their practice in this area. This question was posed in order to measure evaluation of the feedback given to students. With reference to this theme, 94% of respondents indicated feedback to students came through both formal and informal processes. Such processes were highlighted as those by faculty, instructor, 360º feedback sessions, peer and self-evaluation. Submission and write up of student experiences were also employed as a means of written analysis. Such evaluation occurred during each exposure to course work or following face-to-face patient encounters.

The facilitator then inquired as to any internal processes put in place for continuous quality improvement in this area. The focus of this facilitator's inquiry was to evaluate the impact regarding any potential changes made to curriculum or coursework as a result of existing quality control processes geared toward improvement efforts. Fifty-four percent reported that accrediting bodies or compliance regulation drives health

coursework in their Schools of Medicine. The evaluation of the criteria used by these accrediting bodies served as the primary measurement to the content of the curriculum. Thirty four percent reported internal curriculum committee oversight but said committees used accrediting body requirements as a guide to continuous quality improvement efforts. Test score fulfillment, along with tracking and trending of pass rates for the Medical Board was listed by 13% of those responding. Two schools are working on consensus as to what process will be put in place to measure CQI efforts.

Finally, any respondents were asked if they had any additional comments to share. Those who participated shared a variety of sentiments regarding comments in open forum responses. Thirty six percent of those commenting indicated that this research topic was timely, worthwhile, required this type of evaluation and should be studied and is an important topic of research in moving forward to advance curriculum efforts. Comments regarding the need for health literacy to extend and include all sectors of health care delivery education in the form of pharmacy, nursing, allied health services were noted. These sentiments collectively represented 24% of the comments. An additional 14% indicated no comment with another 14% simply stating thank for the opportunity to be participate in the project. Further, 12% gave anecdotal statements sharing such information as pilot project participation within their school, and the anticipation of where their school ranked as compared to the overall rankings. Following the opportunity for each respondent to comment the researcher thanked each of the participants and noted that the interview was completed. Individual taped sessions were then transcribed by the researcher and calculated as referenced above.

**Curriculum Content Comparison**

A comparison of the curriculum was completed by the researcher for each school that agreed to a personal interview. The process was conducted per the Internet and included a review of School of Medicine's curriculum including relative components from the course catalog and/or course description. In addition to content, learning objective, subject matter sequence, assessment, course schedule and delivery methods were evaluated. Although all schools had some form of curriculum description on their respective website, unique curriculum information as outlined above inclusive of full content, learning objective and assessment was clearly evident for 87%, or 13 of the 15 schools.

**Summary**

The research questions postulates that medical schools throughout the United States have expanded their curriculum to include health literacy courses in an effort to address health literacy and enhance patient understanding. The researcher's assumption was that medical schools throughout the United States have not expanded their curriculum to include Health Literacy courses in an effort to address health literacy concerns and enhance patient understanding. The research methodology validated the existence of curriculum to include health literacy courses in an effort to address health literacy and enhance patient understanding. Results revealed the existence of such curriculum and an ongoing evaluation of the content with the need for modification of coursework; thus, the insignificance of the research question was rejected. The best discriminators for supporting the research question were questions from the descriptive quantitative research supported by survey Questions 3, 6, 7, 9, 11, and 14.

Chapter 5 is a discussion of the researcher's conclusions drawn from this data and will parallel those findings based upon the study results. In addition to providing a synopsis of the results, potential opportunities will be explored to apply this research and suggest future studies by those in medical education that develop curriculum to address health literacy concerns.

## Chapter Five: Discussion, Implications, and Recommendations

Research for this study involved the collection of data from online surveys disseminated to 154 Schools of Medicine throughout the United States, personal interviews, and a comparison of online curriculum to corroborate both the descriptive quantitative and qualitative results. The triangulation of data determined a veritable view to the status of the medical community, given the nation's efforts to promote health literacy, by adding health literacy courses to medical school curriculum and also to provide vital insight as to the format and course content of health literacy curriculum in Schools of Medicine throughout the United States. Results of a national survey made headline news in 1993, by noting 44 million Americans, or about one-fourth of the adult population, are functionally illiterate (Kirsch et al., 1993). Americans are more educated today than any other time in American history (Kirsch et al., 1993), yet more than one-third of American adults, some 89 million people, lack sufficient health literacy skills (Weiss, 2007). The lack of sufficient health literacy levels contribute to adverse health outcomes, which translates into increased costs for the health care system in the form of both emergency department visits and inpatient care (Weiss & Palmer, 2004). This study served as the foundation for future research with respect to the curriculum that encompasses health literacy in medical school training programs.

According to an article in the Archives of Internal Medicine 1994, research was conducted on the testimony of patient's depositions involved in medical malpractice lawsuits. Upon analysis of the testimony it was determined that a clinician's communication style and attitude are major factors in nearly 75% of malpractice suits (Beckman et al., 1994). The most frequently identified communication errors were an

inadequate explanation of diagnosis or treatment and communication in such a way that patients felt their concern had been ignored (Vincent et al., 1994). The researcher believes improving health literacy is one strategy for improving health and health care in America; it is both a process and an outcome. Creating a truly health literate America is a challenge requiring leadership, strategy, and cooperation. An effort to make Health Literacy a component of health care professionals' training is imperative (Weiss, 2007). The researcher believes if Schools of Medicine throughout the United States are to provide academically robust and assimilated training programs, Health Literacy coursework must be incorporated into the curriculum.

**Discussion**

The research study premised that medical schools throughout the United States have not expanded their curriculum to include health literacy courses in an effort to address health literacy concerns and enhance patient understanding. The triangulation methods were used to gauge the existence of curriculum to include health literacy courses in an effort to address health literacy and enhance patient understanding. Responses to personal interviews yielded positive responses that reflected the existence of such curriculum and ongoing evaluation of the content, as well as a need for modification of coursework. The best discriminators for supporting the conclusions were questions from the descriptive quantitative research supported by survey Questions 3, 6, 7, 9, 11, and 14, as stated in the following paragraph and illustrated in Appendix C (survey tool).

Survey data for Question 3, *Does your School of Medicine currently promote health literacy as a component of your Medical School curriculum?* was obtained from 71 of the 154 Schools of Medicine who participated in the online survey. With a

response rate of 71%, those responding overwhelmingly agreed that a health literacy component was evident in the curriculum. The responses from Question 3 provide evidence to support whether medical schools throughout the United States have expanded their curriculum to include heath literacy courses to address literacy concerns and enhance patient understanding. One-on-one interview sessions were conducted with fifteen individuals who responded and signed the consent form.

With Question 1, *Describe how the promotion of health literacy is addressed in your program*, respondents for 14 of the schools, or 94%, confirmed that course work to promote health literacy began in the first year of medical school training with consecutive coursework in the second year. Additionally, both promotion and hands-on experience was reinforced during years three and four resulting in the researcher not accepting the insignificance of the research question for Question 1. Hence, health literacy programs not only are a component of medical school training curriculum but the finding supported that the curriculum is introduced in year one, and continues in year two.

Question 6 of the online survey, *Health Literacy curriculum is considered as an elective or a part of the core curriculum?* received a 69% response rate. The respondents noted that health literacy was considered as a core curriculum for medical students who are in training. The assertion made by this researcher was that medical schools have included health literacy coursework as part of the core curriculum, and not simply a small component but health literacy coursework is considered as part of the core curriculum. Furthering validating the evidence of core curriculum, Question 4, *What are the key elements of health literacy being taught at your school?* revealed that content-directed and didactic curriculum elements focused on messaging, written and oral

communication; skills addressing the use of medical jargon, and historical cases which resulted in legal action. Instruction encompassing problem-based learning, case studies, and applied clinical experiences, review of best practices, self-reflection, and presentation were ranked the same. When comparing the curriculum components from the course catalog or course description as part of the research, the principle investigator noted these elements were evident in core curriculum study.

Question 7 of the survey, *The School of Medicine's promotion of health literacy curriculum has been in place?* included respondents from 71 schools with a response rate of 70%. Of the respondents, over one-half, or 54%, indicated curriculum was in place for one to two years and an additional 17% reported the curriculum was in place for greater than five years. This question supported the existence of curriculum within Schools of Medicine and the timeline outlining such programs.

Question 9 of the survey further clarified the curriculum requirements by asking participants, *Is the School of Medicine's promotion of health literacy a multiyear curriculum requirement for Medical Students years 1-4?* A total of 49% affirmed the curriculum was present in all four years of training. This further supported the fact that health literacy was indeed included and spanned the four-year period required for the training of medical students.

Question 11, *Was the School of Medicine's promotion of health literacy curriculum developed as a result of the awareness of the data which substantiates that health literacy is a major public health concern in the United States?*, included 52 respondents who agreed the development of such curriculum was indeed a response to evidence, which was supported by data indicating health literacy as a major concern

within the U.S. The survey responses to this question corroborated the statement through the qualitative responses as well, noting that accrediting bodies or compliance regulation that monitor health care data and national issues make recommendations and drive health coursework for curriculum in Schools of Medicine. This was evidenced by the responses from medical school administrators who reinforced this assumption. Respondent feedback included but was not limited to, "The 2013 LCME visit is coming and on its list of compliance competencies it is measured as an area of focus. We have moved to compliance and evidence-based clinical management guidelines as endorsed by ACGME medical based learning." One respondent commented on the development of literacy curriculum by stating that, "Development pieces to drive curriculum for health literacy are those derived from AAAMC Medical Portal Foundational Resources and the Manual of Conceptual Study by Weiss." Another interviewee mentioned, "LCME 2013, has driven curriculum change for the University." Responses from a third Associate Dean indicated, "The Standards of the Medical Academy of Patient Physician Communication and Cultural Literacy serve as ruler to guide our success with standards which we follow as a School of Medicine and curriculum development." Additional sentiments rendered included, "The HRSA (Health Resource Service Administration) guidelines are used to promote health literacy initiatives and disease specific topics of the underprivileged."

This outcome further supported current efforts being made to address this national problem on behalf of the schools. Moreover, qualitative responses were collected for Question 7, *Have internal processes been put in place for continuous quality improvement?* with a slight majority, 54%, who reported that accrediting bodies or

compliance regulation drive health coursework in their Schools of Medicine. The evaluation of the criteria used by these accrediting bodies serve as the primary measurement as to the content of the curriculum. This is reinforced by accreditation standards, which read according to LCME accreditation standards, May, 2012 as follows:

> ED-23. A medical education program must include instruction in medical ethics and human values and require its medical students to exhibit scrupulous ethical principles in caring for patients and in relating to patients' families and to others involved in patient care.
>
> The medical education program should ensure that medical students receive instruction in appropriate medical ethics, human values, and communication skills before engaging in patient care activities. As students take on increasingly more active roles in patient care during their progression through the curriculum, adherence to ethical principles should be observed, assessed, and reinforced through formal instructional efforts.
>
> ED-47. In evaluating program quality, a medical education program must consider medical student evaluations of their courses, clerkships and teachers, as well as a variety of other measures.
>
> It is expected that the medical education program will have a formal process to collect and use information from medical students on the quality of courses and clerkships/clerkship rotations. The process could include such measures as questionnaires (written or online), other structured data collection tools, focus groups, peer review, and external evaluation. (pp. 10-16)

Over half of the survey respondents responded to Question 14, *The School of Medicine's health literacy curriculum establishes a multiyear curriculum to scaffold the learning and promotion of Health Literacy from year to year for medical students?* and reported that the process of learning continued from year to year. Furthermore, this response was validated by Question 1 in the qualitative responses of the participants that stated coursework to promote health literacy begins in the first year of medical school training with consecutive coursework in the second year. Third and fourth year students were exposed to an expanded curriculum, which allowed students to introduce an element of practice proficiency through hands on experience reinforced during those years.

**Implications**

Health literacy remains an important component of social, economic, and health development. The correlation and exponential impact of education and general literacy on health is supported through a variety of research initiatives (Kickbusch, 2001). Health researchers, as well as heath care professionals are concerned about the health issues and patient education levels (Evans & Barer, 1994). In order to impact health literacy efforts, it is necessary to have a systematic approach to continue to educate physicians at large in practice and to enrich the curriculum offered to the field of study of medicine in schools of medicine (Kickbusch, 2001). It is also essential to continue to add the list of initiatives concerning addressing the health literacy policy (Jahan, 2000). Health literacy programs are a major investment; however, health literacy development strategies require long term commitment, strong partnerships, and powerful spokespersons to support such (Kickbusch, 2001). Health literacy requires awareness and the attention of schools of medicine in order to assist in closing the health literacy gap and its impact on overall

health care delivery. The findings of this researcher clearly denote the existence of course curriculum within academia, as well as incremental stages of development within Schools of Medicine within the United States; despite this finding, it is this researcher's belief, which is further supported by this research, that in order to make inroads in the disconnect in communication and healthcare delivery, coursework designed to address health literacy must continue to be developed and added to medical school curriculum. Thus, ongoing curriculum development must continue in order to meet the needs of patients within the health care continuum. Research by Rosencrance (1999) serves to validate such findings regarding education, by suggesting that ongoing efforts must be sustained through investments in education in order to keep pace with the challenges facing our society by preparing for the emphasis on knowledge, learning, and education for the 21st century. Additionally, as supported by researcher findings by the U. S. Department of Health and Human Services, National Institutes of Health, Office of the Surgeon General, Office of Disease Prevention and Health Promotion (2006) and the American Medical Association (1999), it is clearly acknowledged that health literacy is a major public health issue. Furthermore, such research notes health literacy as being identified as a major issue related to the consumers of care within the United States and, as a result, is a major component of the communication disconnection that exists between physicians and patients. The literature acknowledges programs that have educated physicians in response to the literacy mission, launched by the American Medical Foundation, in partnership with Pfizer Incorporated. However, research to date has not readdressed the impetus to hasten comprehensive implementation of health literacy curriculum within Schools of Medicine in the United States.

**Recommendations**

Recommendations for future studies stem from personal communication and collegial discussion with the respondents throughout the data collection time period. The researcher found that unsolicited sentiment was verbalized during the qualitative survey process in that all healthcare training programs, including those involving schools of nursing, schools of pharmacology, and allied training programs should also include health literacy coursework in their curriculum. Secondary sentiments included the dynamics of the healthcare care team and network and the need for everyone working with patients to be able to know about health care literacy, to be able to identify the signs of Health Literacy, to speak in terms that patients understand, and to do as part not only the initial point of contact with the patient but also in subsequent interaction and contact. This particular sentiment was not explored in this research; however, the researcher believes that further research geared toward evaluating the status of the nation's efforts to promote health literacy by adding health literacy courses to these particular areas of health care training would provide vital insight in this area of the health care training sector and lend to improved standardized communication in the health care sector. According to Nemeth (2008), "it is not about whether improvement to communications between and among clinicians and patients can solve issues related to healthcare safety. It is "How can healthcare information be shared better?" (p. 1). Nemeth (2008) also explained,

> Healthcare is a variable, high stakes sector that is molded by a complex array of factors. The "team" encompasses more than a few individuals, from shifts, clinics

> and departments, to clinician's managers, technicians, suppliers, patients, consultants, and other transferring or receiving organizations. (p. 3)

**Conclusion**

The study of the inclusion of health literacy curriculum in medical school training is a new avenue and warrants further discussion. It is the opinion of this researcher that the study of health literacy is under even greater scrutiny, as it appears that unprecedented numbers of illiteracy rates continue to grow. For the purpose of this study, those statistics—reflecting the National Assessment of Adult Literacy, 2003 study which focused on the ability of individuals to understand and use text, documents, and numbers pertinent to commonly encountered health care situations (Kutner et al., 2006)—were used as a comparative model when referring to statistical measures. This research acknowledges that there is an ever-changing demographic landscape of this nation continues to mold its needs, its ability to communicate is imperative, as it continues to endure the challenges attributed to health literacy issues. The review of the current literature and the results of this research validates that communication regarding health literacy is practiced in medical schools throughout the United States. The findings of this study reinforced this nation's medical schools' commitment to combat communication divides relating to health literacy issues.

Curriculum is a vital component in the educational process (Johnson, 2001). As medical schools embark on curriculum expansion efforts to address health literacy training needs, the fundamental issues of the curriculum development process researched by Hussain, Dogar, Azeem, and Azra (2011), outlining what to teach, how to teach, when to teach and the impact of teaching, must be incorporated in order to adequately and

effectually expose medical students to the health literacy issue. Since effective course work design and timely implementation serve as the foundational medium in learning, it is eminent that health literacy course work be implemented in order to provide a comprehensive education and to meet patient needs. As a health practitioner, the researcher believes that as additional literacy curriculum is designed, it is imperative that medical training academic institutions be cognizant of the various levels of understanding of the patient, in order to meet both their needs and ensure that the healthcare delivery system remains efficacious. It is also my belief that maintaining academic focus and integrity in the delivery of a high-quality medical education is a crucial focus of curriculum development. This study provided medical schools with information regarding curriculum development in the area of health literacy and can serve as a catalyst to evaluate health literacy curriculum in other areas of health care related training programs.

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## Appendix A

**Pre survey Demographic Information**

**Northeast Region** _____
**Division I New England** (Maine, New Hampshire, Vermont) _____
**Division II Mid Atlantic** (Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey) _____

**Midwest Region** _____
**Division III East North Central** (Wisconsin, Michigan, Illinois, Indiana, Ohio) _____
**Division IV West North Central** (Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa) _____

**South Region** _____
**Division V South Atlantic** (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida) _____
**Division VI East South Central** (Kentucky, Tennessee, Mississippi, Alabama)_____
**Division VII West South Central** (Oklahoma, Texas, Arkansas, Louisiana) _____

**West Region** _____
**Division VIII Mountain** (Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico) _____
**Division IX Pacific** (Alaska, Washington, Oregon, California, Hawaii) _____

All pre-coded data breakouts will utilize population/demographic segmentation as defined by the US Census (http://2010.census.gov/2010census/).

## Appendix B

Dear Academic Leader:

I am currently enrolled in the Doctoral Program for Instructional Leadership at Lindenwood University in St. Charles, Missouri. My dissertation is entitled “An Evaluation of Physician-to-Patient Communication Training in Medical Schools Across the United States: A Status Report on the Nation’s Effort to Promote Health Literacy by Adding a Health Literacy Courses to Medical School Curriculum”. I believe that valuable and insightful information can be gleaned that will affect the manner in which our nation’s health literacy concerns are addressed through preparation of future medical professionals in the United States.

As part of the research, I am conducting a survey regarding the promotion of Health Literacy Curriculum. The survey tool is attached to this cover letter, along with an electronic privacy and agreement form. The survey is anonymous and is confidential, and it will provide great insight into curriculum development with physician preparation and training.

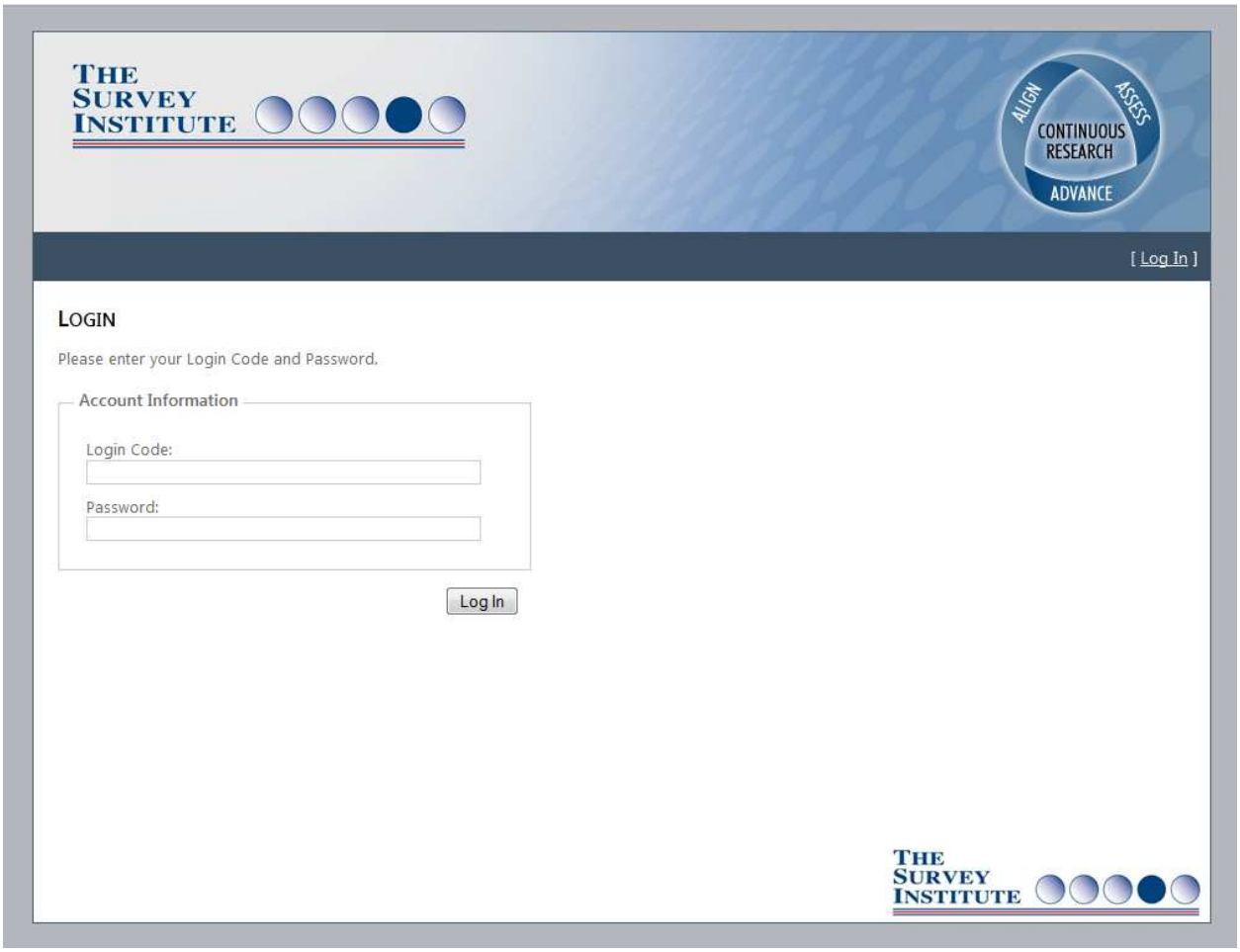
Please take a moment to review the survey, complete the consent and survey process and submit it to the surveyor.

I thank you in advance for your most valuable participation in this important research endeavor.

Sincerely,

Andrea P. Frazier, RN, CCM, MS, MBA

## Appendix C


THE SURVEY INSTITUTE
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Please enter your Login Code and Password.
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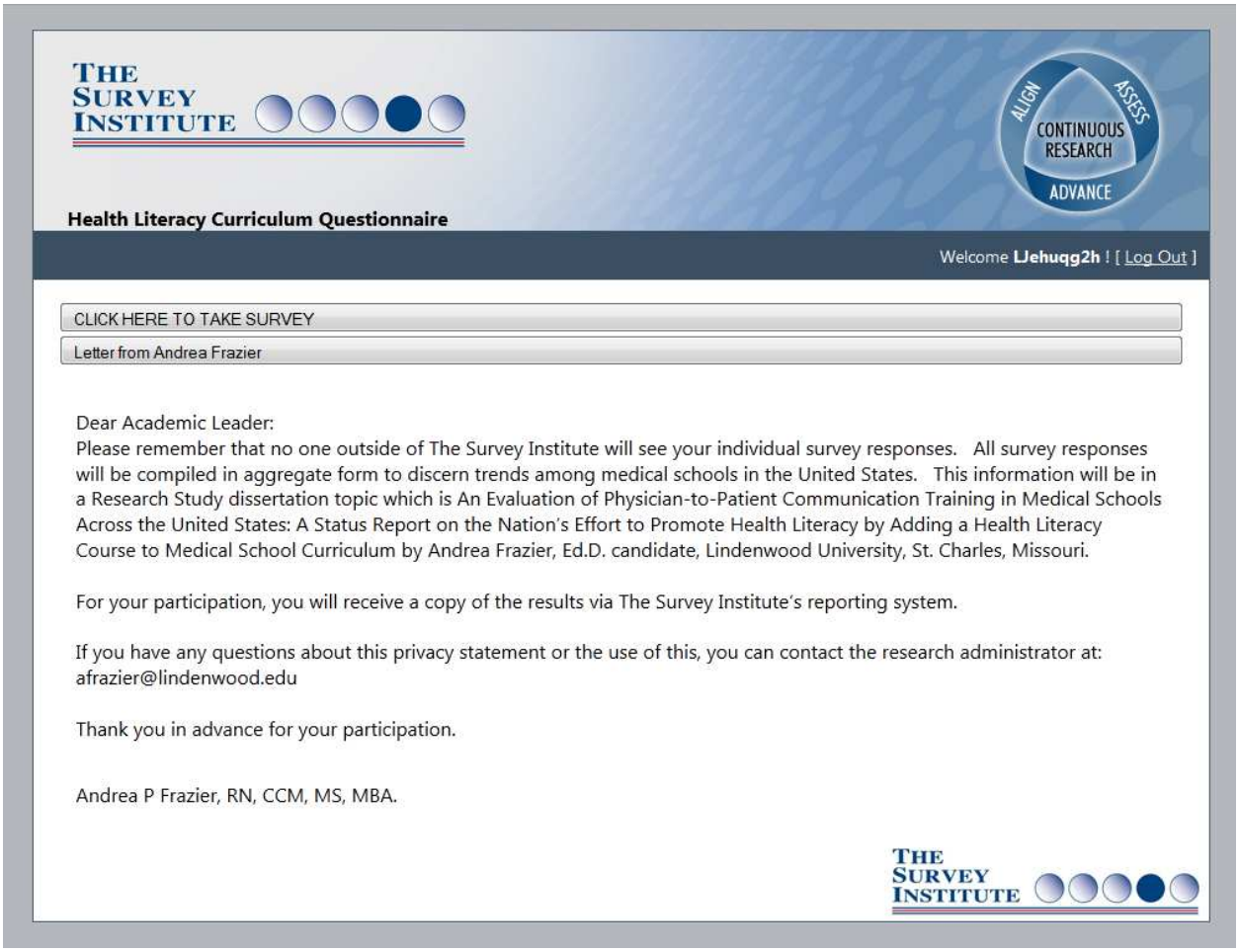
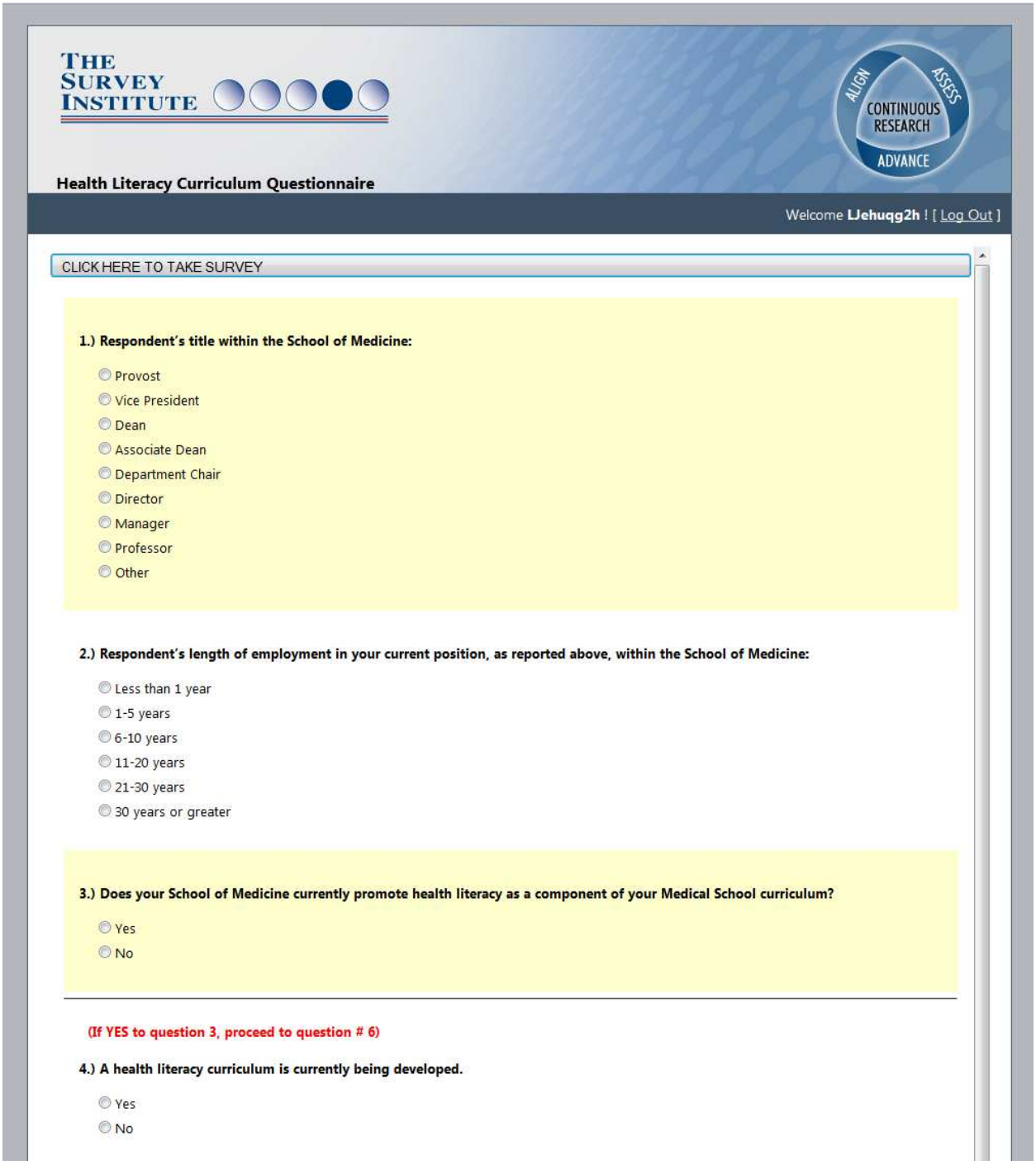

THE SURVEY INSTITUTE
ALIGN
ASSESS
CONTINUOUS RESEARCH
ADVANCE
Health Literacy Curriculum Questionnaire
Welcome LJehuqg2h ! [ Log Out ]
CLICK HERE TO TAKE SURVEY
Letter from Andrea Frazier
Dear Academic Leader:
Please remember that no one outside of The Survey Institute will see your individual survey responses. All survey responses will be compiled in aggregate form to discern trends among medical schools in the United States. This information will be in a Research Study dissertation topic which is An Evaluation of Physician-to-Patient Communication Training in Medical Schools Across the United States: A Status Report on the Nation's Effort to Promote Health Literacy by Adding a Health Literacy Course to Medical School Curriculum by Andrea Frazier, Ed.D. candidate, Lindenwood University, St. Charles, Missouri.
For your participation, you will receive a copy of the results via The Survey Institute's reporting system.
If you have any questions about this privacy statement or the use of this, you can contact the research administrator at: afrazier@lindenwood.edu
Thank you in advance for your participation.
Andrea P Frazier, RN, CCM, MS, MBA.
THE SURVEY INSTITUTE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Health Literacy Curriculum Questionnaire
Welcome LJehuqg2h ! [ Log Out ]
CLICK HERE TO TAKE SURVEY
1.) Respondent's title within the School of Medicine:
Provost
Vice President
Dean
Associate Dean
Department Chair
Director
Manager
Professor
Other
2.) Respondent's length of employment in your current position, as reported above, within the School of Medicine:
Less than 1 year
1-5 years
6-10 years
11-20 years
21-30 years
30 years or greater
3.) Does your School of Medicine currently promote health literacy as a component of your Medical School curriculum?
Yes
No
(If YES to question 3, proceed to question # 6)
4.) A health literacy curriculum is currently being developed.
Yes
No

**5.) The School of Medicine's promotion of health literacy curriculum will be introduced as a component of our curriculum in: (MM/YY or NA if Not Applicable)**

**(If you answered NO to question 3, Stop here!)**

**6.) Health literacy curriculum in the School of Medicine is considered as:**

- An Elective
- As Core Curriculum

**7.) The School of Medicine's promotion of health literacy curriculum has been in place:**

- 1-2 years
- 3-5 years
- Greater than 5 years

**8.) The School of Medicine's promotion of health literacy curriculum is introduced during:**

- Medical Student Year 1
- Medical Student Year 2
- Medical Student Year 3
- Medical Student Year 4

**9.) School of Medicine's promotion of health literacy curriculum is a multi-year curriculum requirement for Medical Students year 1-4.**

- Yes
- No

**10.) The School of Medicine's promotion of health literacy promotion curriculum was developed to reflect the philosophy and goals which guide the School of Medicine.**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

**11.) The School of Medicine's promotion of health literacy curriculum was developed as the result of the awareness of the data which substantiates that health literacy is a major public health concern in the U.S.**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

**12.) The Administration of our University is aware of the promotion of health literacy curriculum within our School of Medicine.**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

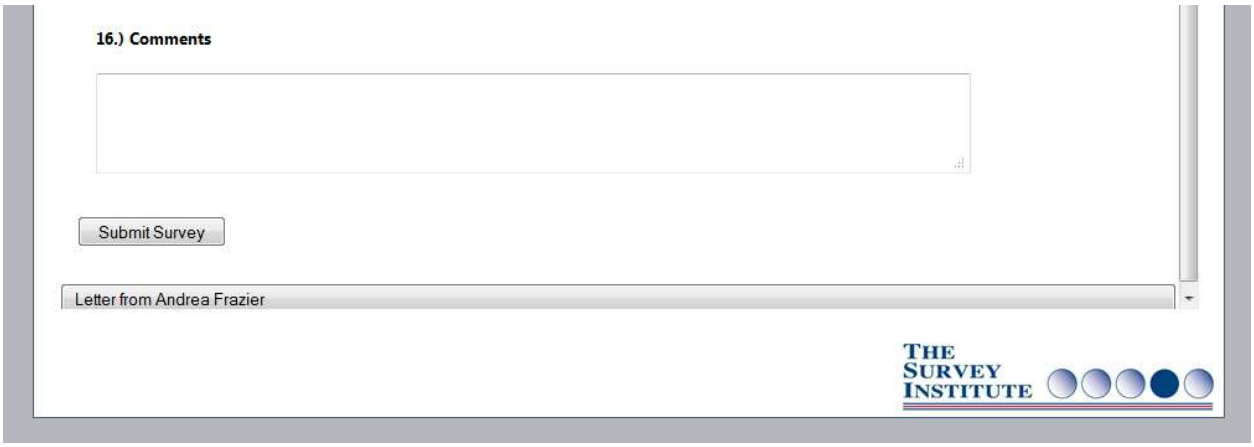
**13.) The medical students within this University are aware of the promotion of health literacy curriculum within our School of Medicine.**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

**14.) The School of Medicine's health Literacy" curriculum establishes multiyear curriculum to scaffold the learning and promotion of health literacy from year to year for medical students.**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

**15.) I would like to be contacted to participate in an interview to discuss health literacy curriculum within a medical school setting. By providing my email contact below I give my consent to participate and permission to be contacted.**


16.) Comments
Submit Survey
Letter from Andrea Frazier
THE SURVEY INSTITUTE

## Vitae

Andrea P. Frazier, RN, CCM, M.S., MBA, is a health care professional with over 28 years of managed care quality, medical management, and case management experience. She received her nursing degree from St. Mary's College and her undergraduate business degree from Sterling Presbyterian College. She obtained her Master's degree in Health Management and MBA from Lindenwood University. Andrea is also a Certified Case Manager, a Certified Professional in Utilization Review, a Certified Managed Care Nurse and a Medical Legal Consultant. She was also named in Who's Who in Medicine and Healthcare for the 1997/1998 year, St. Louis Case Manager of the year for 2011, and a member of Sigma Theta Tau Honor Society of Nursing. Andrea is actively involved in speaking to both physicians and health care majors about the impact of quality on managed care. Andrea is the founder and CEO of A Frazier and Associates, LLC, an independent medical management company dedicated to case management and utilization review services. She is an Assistant Professor and Faculty Advisor for Lindenwood University in Belleville, Illinois where she teaches Quality Improvement, Health Management, Health Care Legal Issues, and Organizational Behavior to graduate and undergraduate students. Andrea also is a former instructor for Washington University School of Health Administration. Andrea also serves as a board member on the Family Resource Center of St. Louis, a non-for profit organization that is dedicated to the treatment and prevention of child abuse and neglect and the St. Louis Alzheimer's Association. She is the proud mother of three children and has six grandchildren. Andrea has been a resident of the St. Louis area for 32 years.