Health Literacy: Approach to Colon Cancer in African Americans

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HEALTH LITERACY: APPROACH TO COLON CANCER IN AFRICAN AMERICANS

A scholarly project submitted in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice

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ABSTRACT


Health literacy is vitally important for African-Americans (AA), with higher incidence and mortality rates of colon cancer compared to Caucasians nationally and in Ohio. Larrabee’s Model for Change to EBP and Self-Efficacy Middle range nursing theory guided this DNP project. A retrospective chart review of AA patients with colon cancer was completed to determine types of teaching methods used by nurses during the clinical encounter. A convenience sample (8%) of AA patients received colon cancer care in the ambulatory setting at the healthcare facility in the Midwest. More than half were female and the remainder were male (65% vs. 35%); with a median age of 52 years. The duration of diagnosis with colon cancer was six months to 1 year (65%); 23% was greater than a year, and 12% was less than one year. Nurses documented patient education in 97% of the encounters. The types of health literacy teaching methods were: explanation (53%), blended (41%) and the use of audiovisual aids (3%). The findings supported the EBP literature of “Teach-Back”, Audiovisual, Written or picture material, and Blended supporting the delivery of health literate education. No associations were made regarding types of health literacy education or patient’s adherence to chemotherapy.
treatment plans of care due to the small sample of AA patients during the review period. It is possible that this health care system may not be the preferred choice for some AA patients seeking colon cancer treatment. Further EBP projects are needed to examine system barriers or internal factors influencing colon cancer treatment affecting AA with colon cancer. Documentation of patient education in the electronic medical record (EMR) offered nurses the opportunity to select one or more teaching methods during the patient encounter, but unfortunately does not define how patients apply health literate education promoting health care decisions. This DNP project identified an opportunity for nursing practice to develop tools that measure or examine health literacy teaching methods linked to colon cancer in AA patients.

Keywords: African-American, Ambulatory Oncology, Colon Cancer, Health literacy
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The completion of this Doctoral Evidence project would not have possible with the support, wisdom and patience of my chair Dr. Barbara Fowler, Thank you! The compassion and commitment to student success she has helped beyond expectations. I had many key stakeholders for this project including Amy Rettig, MS, RN and Todd Tussing, DNP, RN who are both mentors, colleagues and friends.

I would like to acknowledge my family that traveled this journey with me. The love and support has been greatly appreciated. My daughter Paris, has been a rock of support as she endured listening to my reading aloud multiple times and many late nights. You have been my inspiration and motivation to keep going. My husband and son provided encouragement that was ongoing.

I would like to acknowledge Nursing leadership, Carol Colussi MSN, RN and Robin Rosselet, DNP, RN from Ohio State Wexner Medical Center, The Author G. James Cancer Hospital for the support of completing this project.
DEDICATIONS

This Evidence Based Project is dedicated to my best friend and first educator, my mother Julia Jefferson. She was diagnosed with colon cancer. I know she is celebrating with me from heaven above. To nurses everywhere in direct patient care, I dedicate this project to you as an option to seek ways of improving our practice. Lastly, I dedicate this EBP project to my grandson Michael who brings me so much joy and happiness.
I. PROBLEM

The risk of developing colon cancer in one's lifetime is 1 in 20 or 5% (American Cancer Society [ACS], 2015). According to the ACS (2015), colon cancer is the third leading cause of cancer-related deaths in the United States among men and women aged 50 and older. The estimate number of new colon cancer cases in 2015 was 93,090 (ACS, 2015). This projection increased to 97,220 new colon cancer cases for 2018. Based on this projection and missed opportunities for screening persons younger than age 50, the ACS established new screening guidelines for persons aged 45 to 50 and at average risk for colon cancer (ACS, 2018). Previous screening recommendation was for individuals age 50 and older. Despite these findings, the incidence and mortality rates of colon cancer are 30% higher among men than women aged 50 and older (ACS, 2015).

Nationally, African-Americans have a higher incidence rate of a colon cancer than Caucasians (968.3 versus 946.7) per 100,000 people (ACS, 2018). Comparison data also show that African-Americans have a higher mortality rate of colon cancer than Caucasians (41.6 vs. 29.0) per 100,000 people (ACS, 2018). The mortality rates were equally high among African-American males and females aged 50 and older (ACS, 2018). Race or ethnicity, personal history (ulcerative colitis or Crohn’s disease and colonic polyps) as well as family risk factors (close family members with a history of cancer, especially colon cancer) accounted for the higher mortality rates among African-Americans (ACS, 2015).

Ohio Incidence and Prevalence Data on Colon Cancer

In Ohio, colon cancer was the second most common cause of death in 2015 (Ohio Department of Health [ODH], 2018). To better understand the impact of colon cancer in
Ohio, further review of the literature compared the incidence and mortality rates of colon cancer in three Ohio counties with the highest racial/ethnic minority population. The counties selected were Hamilton, Franklin and Cuyahoga. Hamilton County's general population had an incidence rate of 40.1% or 365 cases of colon cancer and mortality rate of 16.3% or 149 deaths per 100,000 people compared to Franklin County's general population with an incidence rate of 38.9% or 429 cases of colon cancer and a mortality rate of 15.2% or 164 deaths per 100,000 people (ODH, 2017). Similarly, Cuyahoga County's general population had a slightly higher incidence rate of 42.4% or 687 cases of colon cancer and mortality rate of 15.5% or 260 deaths per 100,000 people (ODH, 2017).

**Race Specific Incidence and Mortality Rates of Colon Cancer per County**

According to the ODH (2018), the incidence rate of colon cancer for African-Americans compared to Caucasians in Cuyahoga County was 88 vs. 83.4 per 100,000 people. Similarly, African-Americans in Hamilton County had a slightly higher incidence rate of colon cancer than Caucasians 83.2 vs. 81.2 per 100,000 people (ODH, 2018). In Franklin County, the incidence rate of colon cancer was almost equal between African Americans and Caucasians 77 vs. 77.7 per 100,000 people. (ODH, 2018). In 2016, the ODH (2018) reported higher mortality rates of colon cancer for African Americans compared to Caucasians in Cuyahoga County (947.3 vs. 787.3) per 100,000 people, Hamilton County (970.8 vs. 784.4) per 100,000 people, and Franklin County, (901.5 versus 802.3) per 100,000 people (ODH, 208). These findings clearly demonstrate that African-Americans have a higher incidence and mortality rate of colon cancer when compared to Caucasians. Larrabee's Theory of Change to Evidence Based Practice (EBP) and Bandura's Self-Efficacy theory was used to
show that African-American patients with colon cancer were provided with health literacy patient education by nursing staff.

**Significance of Project**

Patient education incorporating health literacy and centered in Evidence-based Practice (EBP) is imperative to improving the health outcomes of all individuals, especially in African-Americans with higher incidence and mortality rates of colon cancer than Caucasians. African-America culture and heritage is rich in traditions that include the significance of biological and extended family, including the church and social networks in communities. Elders and social networks in the community are held as resources for wisdom, guidance, and faith especially during adverse situations, such as illness or death that are viewed as authenticated (McCoy, 2011). African-American culture rooted in family closeness and beliefs about education maintains a learning approach centered in cooperation, collaboration, and cultural relevancy (Wighting, 2005). Although no specific pedagogy has been identified as best for African-Americans, the cultural tradition of family and social networks should be considered when applying health literate education to colon cancer patients.

Health literacy is “the ability to obtain, comprehend, and process basic health information to make healthcare decisions” (Matsuyama, Wilson-Genderson, Kuhn, Moghanaki, Vachhani, & Paasche-Orlow, 2011, p. 1). Low health literacy is linked to lack of health knowledge, personal behaviors, family values and cultural norms including misunderstanding of medication instructions, poor comprehension and mortality (U.S. Department of Health and Human Services [DHHS], 2010). In an earlier report, the Institute of Medicine (IOM) (2004) stated more than 90 million people had limited health literacy.
affecting poor patient outcomes, including late entry into the healthcare system, lack of adherence to treatment plan and lack of knowledge supporting positive health outcomes. When health literacy education is not addressed, “individuals have worse outcomes, low treatment adherence, frequent hospitalizations and higher mortality” (Matsuyama, et al., 2011, p1). Sheridan, Halpern, Viera, Berman, Donahue and Crotty’s (2011) review of the literature found that low health literacy affects 36% of adults in the United States. Cipriano and Polite (2013) cited a study by Albeit that African-Americans have a 50% higher mortality rate and 60% advanced stage of colon cancer at the time of diagnosis compared to Caucasians. Low health literacy impacts the cost of healthcare services and is estimated to cost the nation’s economy between $106 to $236 billion dollars annually, including indirect cost from loss wages and poorer quality of life requiring more healthcare resources (DHHS, 2010). Furthermore, the importance of health literacy information can impact costs by aligning health systems to communicate patient information in a health literate manner (National Academy of Services, 2011).
During an oncology ambulatory clinical encounter, a plethora of disease information and education is provided to patients and families. Patient education should be delivered in a method that supports the patient's level of education and learning style and values, which is often a challenge in populations representing different cultures, socioeconomic backgrounds, personal experiences, cognitive abilities and mental health that influence health literacy (DHHS, 2010). In some situations, written health literacy information may be unclear for patients or caregivers, therefore calling for health literacy information using a blended approach to implementing health literacy information.

The Affordable Care Act (ACA) recommended interventions that would impact health literacy and preventative health services, including screenings for all patients in healthcare systems. In May 2017, H.R. 1628, also known as the American Health Act of 2017, proposed “any alternate benefit plan offered by state Medicaid programs are required to offer wellness and preventative services” to its participants (Congress.gov, 2018). Ambulatory oncology clinics contribute to this mandate by including targeted health literacy information in the plan of care or chemotherapy education to ensure appropriate colon cancer health education for all patients or vulnerable populations.
Purpose and Goals of the Project

The purpose of this EBP project was to conduct a review of the literature on health literacy methods (teach-back, use of audiovisual aids, pictures or written documentation) used by staff in ambulatory oncology clinics to educate African-American with colon cancer. This EBP project used the following PICOT question to perform the literature search: In ambulatory oncology patients with colon cancer (P), how does incorporating health literacy educational interventions (I), compare to no educational interventions (C), influence African-Americans adherence to chemotherapy treatment plan (O) over 3 months (T).
Guiding Framework/ Theory

The nursing theory selected to guide this EBP change was the middle range theory of Self-Efficacy. Bandura's Self-Efficacy theory posits people's behaviors are influenced by myriad factors including healthcare providers, family members, significant others, social networks and social media can determine or influence health outcomes. Healthcare providers offering patients health literate information about their treatment plans enables the patient opportunity to make informed choices with his or her health care decisions. The framework to move this EBP project from start to fruition is the Model for Change to EBP (Larrabee, 2009). This framework was selected due its simplicity and clinical focus that includes a six step process targeted to improve patient outcomes. The steps in the model include "assess the need for change, locate the best evidence, appraise the findings, design a practice change, implement and evaluate the change in practice, followed by maintaining the change in practice" (Larrabee, 2009, p23). The framework includes a PICOT clinical question to guide the literature search for the best evidence. The Model for Change to EBP can be applied to any practice change in an organization. The framework fits with short or lengthy interventions to monitor patient outcomes during the prescribed time. Furthermore, the Model for Change to EBP supports the "integration principles of quality indicators, teamwork and strategies to promote adoption of a new practice" (Melnyk & Fineout-Overholt, 2015, p. 287). The process of combining a nursing theory with an EBP change framework directs the search and critical appraisal of the evidence to identify interventions supporting the practice change.
II. EVIDENCE

Review of the Literature

A literature search was conducted using the Cumulative Index Nursing and Allied Health Literature (CINAHL) and PubMed databases. The key words selected were African-American, ambulatory oncology, colon cancer, and health literacy. Boolean connectors that produced results were OR per selected key word. The search included limits to peer reviewed articles, evidence -based, human, English, adult to middle age population, and the years published from 2010 to 2015. These limits were applicable to search for the most current evidence that mirrored the demographics of patients seen in ambulatory oncology clinics. The search limit of English was applied to eliminate articles written in other languages.

In the CINAHL database, using key words ambulatory oncology AND health literacy AND colon cancer resulted in zero hits. Separating the key words to ambulatory oncology OR health literacy resulted in 17 hits. Most of the articles included mental health literacy, which did not fit the PICOT question. Searching the database with the key words in the order of ambulatory oncology OR health literacy OR colon cancer resulted in 110 hits. Next, an age limit was applied for middle age which listed age 45-65; the number was reduced to 39 hits. After reviewing the abstracts, 11 articles were excluded as the topics (clinical trials of colon cancer and mental health literacy discussed colon cancer treatments) were not related to the PICOT question. Three articles were selected for critical appraisal.

In PubMed’s database, limits applied were year 2010 to current and human subjects. Key words selected were ambulatory oncology OR health literacy, which resulted in 331 hits. To reflect articles that were relevant to the PICOT question the order of the search was revised to reflect colon cancer AND health literacy OR ambulatory oncology clinics as key
words. The limits were adjusted to reflect the last five years, humans, English, and adult
years 19-44 plus 65 and older. This resulted in eight hits. From this search two articles were
selected for critical appraisal. One article was selected to hold for content review and
applicability to a potential intervention. The remaining articles did not address the PICOT
question. Articles selected were evaluated for pertinence and appropriateness to addressing
the PICOT question. Each article can be reviewed in Appendices A-E.

An updated literature review was conducted to assess for newly published content.
PubMed had 361 hits using colon cancer OR health literacy for the years from 2010 to 2018.
This author applied filters for systemic reviews, humans and the last five years. Two articles
were noted for reference review. CINAHL database was used with key words colon cancer
and health literacy from 2010 to 2018. Five articles were generated but did not fit the PICOT
question. When applying OR and filters for peer reviewed, EBP and English, 335 hits were
noted. Although the articles did not fit the PICOT, one article was selected for reference. As
a result of the updated search, a trend was noted with using technology to measure, educate,
and evaluate health literacy. One article referenced how social media is used for patients with
colon rectal cancer. In this systematic review, social media has revolutionized medical
practice as a source for information sharing (Pellino, Simillis, Rasheed, Mills, Warren &
Tekkis, 2017).

Once the critical appraisal was completed on the selected articles, a review for quality
of the literature was completed. The strength of the evidence and levels of recommendation
were determined using The Johns Hopkins Nursing EBP (JHNEBP) tools. Appraisal of the
literature for quality of evidence and recommendation strength resulted in a quasi-
experimental study, three non-experimental studies, one professional opinion article and
three articles based on case reports and quality improvement from experiential evidence. The findings were consistent with the PICOT question indicating that health literacy education influences health literacy rates. Each article introduced a different intervention or evaluation strategy; however all articles shared an outcome that influenced patient’s health literacy.

Guyatt, Oxman, Kunz, Falck-Yitter, Vist, Liberati, and Schunemann (2008) report that the strength of recommendation is a degree of confidence that the intervention benefits outweighs the undesirable side effect. The application of the JHNEBP module is an important tool to analyze the evidence to guide the practice change with confidence. Evidence with the highest level and quality grade indicate interventions with the best patient outcome to improve health literacy. An analysis of research studies allowed this author to determine levels of evidence and quality of the articles to support the outcomes. Data from the articles were appraised to determine the translation pathway of patient education interventions for this EBP project. See Table 1
<table>
<thead>
<tr>
<th>Recommendation Statement</th>
<th>Reference in Support of Recommendation</th>
<th>Rationale</th>
<th>Level of Evidence</th>
<th>Quality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Add weekly sessions and follow-up telephone calls for health promotion behaviors</td>
<td>Meraviglia, M, Stuijbergen, A., Parsons, D., &amp; Morgan, S. (2013). Health promotion for cancer survivors: adaption and implementation of an intervention</td>
<td>The study applies framework of explanatory model for HP with chronic II conditions. Participants were not randomized. Statistical data supports positive impact over 3 time intervals.</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>2. Include written disease specific and video education</td>
<td>Sheridan, Halpern, Viera, Berkman, Donahue &amp; Crotty (2011). Interventions for individuals with low health literacy: a systematic review</td>
<td>Systematic review of evidence includes 22 RCT's and 10 Quasi Experimental findings. No biases Strong evidence to support multiple interventions. Consistent results</td>
<td>III</td>
<td>A</td>
</tr>
</tbody>
</table>
Incorporate patient education that is appropriate for the patient’s literacy level.


Comprehensive literature review

Application of mixed educational strategies to patients’ personalized literacy levels.


Used systematic reviews for inclusion criteria. RCT and Quasi experimental data. Results summarized qualitative. Small sample size in reviews. Interventions clearly defined.

Focused on medications. Inconsistent findings.
<table>
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<tr>
<th>Page</th>
<th>Text</th>
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<tr>
<td>6</td>
<td>Baur, C. (2011). Calling the nation to act: Implementing the national action plan to improve health literacy. Data supported with literature. Summarizes health literacy need and nursing contributions.</td>
</tr>
<tr>
<td>7</td>
<td>DeWalt, D., Bruckso, K., Hawk, V., Brach, Hink, A., Rudd, R., &amp; Callahan (2011). Developing and testing the health literacy universal precautions toolkit. Eight practice setting tested toolkit for health literacy. Identified key tool areas and test findings. Patient outcomes findings relate to Quality improvement.</td>
</tr>
<tr>
<td>8</td>
<td>Application of interventions such as Teach back or Ask me 3 to improve clinical patient and provider communication and outcomes. Ferguson, L., &amp; Pawlak, R. (2011). Health literacy: The road to improved health outcomes. Review of the literature on method to improve health literacy. Evidence-base recommendation for AHRQ toolkit. Conclusion interventions were evaluated with recommended tools.</td>
</tr>
</tbody>
</table>
Level of Evidence

Levels of evidence provided guidance to evaluate the study design of the literature base specific to the clinical question (Melnyk & Fineout-Overholt, 2015). A level of evidence is a ranking method based on the design and methods used in a research study to guide the search for the best evidence on a clinical question (Levin, 2014). The JHNEBP model has five levels of evidence. The highest level in the model is a Level I. This level reviews the evidence from single studies comprised of randomized control trials (RCTs), experimental study or systematic review of RCTs. The next level is a Level II. In this category the studies may have a control group but lacks randomization. This includes quasi-experimental studies and meta-analysis. Level III evidence is non-experimental, quasi experimental qualitative studies with or without meta-analysis (Johns Hopkins Medicine, n.d.). Level IV evidence is opinion based from respected authorities or committees or consensus decisions. Level V the lowest level of evidence and consists of evidence from literature reviews and quality improvement or case reports.

See JHNEBP Table 2
<table>
<thead>
<tr>
<th>Evidence Levels</th>
<th>Quality Guides</th>
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<tbody>
<tr>
<td><strong>Level I</strong></td>
<td></td>
</tr>
<tr>
<td>Experimental study, randomized controlled trial (RCT)</td>
<td>A <strong>High quality:</strong> Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence</td>
</tr>
<tr>
<td>Systematic review of RCTs, with or without meta-analysis</td>
<td></td>
</tr>
<tr>
<td><strong>Level II</strong></td>
<td></td>
</tr>
<tr>
<td>Quasi-experimental study</td>
<td>B <strong>Good quality:</strong> Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence</td>
</tr>
<tr>
<td>Systematic review of a combination of RCTs and quasi-experimental, or quasi-experimental studies only, with or without meta-analysis</td>
<td></td>
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<tr>
<td><strong>Level III</strong></td>
<td></td>
</tr>
<tr>
<td>Non-experimental study</td>
<td>C <strong>Low quality or major flaws:</strong> Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn</td>
</tr>
<tr>
<td>Systematic review of a combination of RCTs, quasi-experimental and non-experimental studies, or non-experimental studies only, with or without meta-analysis</td>
<td></td>
</tr>
<tr>
<td>Qualitative study or systematic review with or without a meta-synthesis</td>
<td></td>
</tr>
<tr>
<td>Evidence Levels</td>
<td>Quality Guides</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>Level IV</strong></td>
<td><strong>A High quality:</strong> Material officially sponsored by a professional, public, private organization, or government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years</td>
</tr>
<tr>
<td>Opinion of respected authorities and/or nationally recognized expert committees/consensus panels based on scientific evidence</td>
<td><strong>B Good quality:</strong> Material officially sponsored by a professional, public, private organization, or government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years</td>
</tr>
<tr>
<td>Includes:</td>
<td><strong>C Low quality or major flaws:</strong> Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the last 5 years</td>
</tr>
<tr>
<td>• Clinical practice guidelines</td>
<td></td>
</tr>
<tr>
<td>• Consensus panels</td>
<td></td>
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</tbody>
</table>
Quality of Evidence

The JHNEBP model applies a letter to the evidence as a quality grade based on the appraisal. The quality of the evidence along with the grade was used to determine merit for recommendation. The grades are letters A, B, or C which are assigned based on the criteria from the appraisal, quality of the article content and reliability of the evidence. An “A” grade indicates high quality, consistent, sufficient sample size, and strong literature search. A grade of “B” is good quality, reasonably consistent, fairly comprehensive literature review. A “C” grade is the lowest quality. This grade has flaws in the evidence which could include limited evidence, insufficient sample size or conclusions cannot be drawn (John Hopkins Hospital, n.d.)

Meraviglia, Stuifbergen, Parsons, and Morgan’s (2013) article was appraised at Level II evidence and graded B. This single study article is listed as a RCT but failed to disclose how the control and intervention groups were assigned. The application of the interventions of weekly sessions along with telephone calls indicated a positive change in health behavior measured at time intervals. This article is free from bias findings or suggestions.
Sheridan, Halpern, Viera, Berkman, Donahue and Crotty (2011) appraised evidence to answer the clinical question. This article was also a RCT study that includes quasi-experimental design. The review of the literature was clearly defined and generalizable results for health literate education influence on patient outcomes. The quality of evidence and quality grade assigned to this study is Level III grade A. The aim of this systematic review was to evaluate the efficacy of interventions designed to mitigate low health literacy. Two independent reviewers determined inclusion in the systematic review. The review includes 38 studies with large sample sizes. Each study was evaluated separately but data were discussed as aggregate. Not all mixed strategies influenced health literacy but the introduction of a video with label reading increased knowledge levels by 23 percentage points. This evidence supports the recommendation that including more than one educational strategy can influence a patient’s health outcome.
Synthesis of the Body of Knowledge

Synthesis of the literature support a blended approach to patient education is the best method to promote health literacy in colon cancer patients. The following summarizes the findings of eight articles. Two articles list the application of the AHRQ toolkit, three articles included verbal communication with telephone calls, four articles supported the use of pictures, four articles supported easy to read written instructions, and four articles supported the use of a video. The most frequent educational interventions were the use of pictures, easy to read written material, and video education tools. However, none were specific to patients with colon cancer. Additionally, no studies in the literature review used a chart review to examine health outcomes or adherence to treatment plans of African-American patients. This EBP project utilized a retrospective chart review to examine types of health literacy teaching methods used to educate African-American patients with colon cancer during each clinic encounter.

Recommendation for Practice Change

A blended approach to patient education is supported by the literature to improve literacy education for colon cancer patients. The literature identified interventions are pictorial education, supported by easy to read materials and audio and visual communication such as DVD or short informational videos. See Table 3
### Table 3

**Table for Strength Recommendation/ Translation Pathway**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Strength of Evidence for Recommendation</th>
<th>References in Support of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add weekly sessions and follow-up telephone calls for health promotion behaviors</td>
<td>Good-Consider pilot</td>
<td>Meraviglia, M, Stuifbergen, A., Parsons, D., Morgan, S. (2013).</td>
</tr>
<tr>
<td>Incorporate teach back or Ask Me Three method to health literacy intervention</td>
<td>Good clinical significance-Consider Pilot</td>
<td>DeWalt, D., BroucksoK,Hawk, V., Brach, Hink,A., Rudd, R., &amp; Callahan (2011).</td>
</tr>
</tbody>
</table>

This EBP project examined types of patient education methods used to educate African-American patients diagnosed with colon cancer. The methods identified were based on the teaching methods documented during the patient’s clinical encounter in exam or infusion locations. Examination of the internal data was salient to determine the current nursing practice applied to patient education in a health literate approach or an opportunity for a practice change. This authors recommends use of more than one teaching method for delivery of health literacy patient education.
III. IMPLEMENTATION

Population of Interest

The population for this Doctoral of Nursing Practice (DNP) project was African-Americans adults diagnosed with colon cancer. Participants selected in the project were from a particular healthcare organization or organizations for cancer treatment. The target age was 50 and older and not informed of disease progression.
Practice Setting

The setting for this EBP project was ambulatory oncology clinics located in Midwest Ohio. Inclusion criteria for this retrospective chart review were African-American patients with a medical diagnosis of colon cancer. **This DNP project included a synthesis of EBP literature and the application in patient education versus an intervention implementation.** Health literacy education occurred in the provider's clinic or infusion suite. Exclusion criteria include non-African-American patients and African-American patients who were previously informed of the disease progression. African-American patient encounters that occurred outside the review period were also excluded. The principle investigator (PI) also completed a 5-item demographic document to identify characteristics of the participants such as age, gender and duration of diagnosis.

See Appendix N

Patients were identified using the organizations de-identified data base on ICD 10 diagnosis codes for colon cancer as well as patients within the inclusion criteria. Resources for the project included support from information technology and nursing leadership in the healthcare organization. The EBP project assessed anticipated facilitators and barriers to move the practice change from start to fruition. Potential facilitators and barriers of the project implementation and sustainability of the change are identified in Table 4. Identification of facilitators and barriers are essential in supporting the efficacy of EBP changes.
<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Barriers</th>
<th>Aid in Project/ Barrier Mitigation Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic library resources librarian and electronic databases</td>
<td>• Help with accessing evidence open to all staff</td>
<td></td>
</tr>
<tr>
<td>EBP mentors Master's prepared</td>
<td>• The organization has EBP mentors that will help staff nurses with EBP practice changes.</td>
<td>• Active participation from project PI</td>
</tr>
<tr>
<td>Executive leadership interest in improving patient outcomes</td>
<td>• Senior leadership support the intervention&gt; improve patient outcomes&gt; improves satisfaction scores&gt; increase meaningful use initiatives.</td>
<td></td>
</tr>
<tr>
<td>Completed project by PI</td>
<td>• Improve patient outcomes in African-Americans with colon cancer</td>
<td>• Principal Investigator seeking publication</td>
</tr>
<tr>
<td>Balancing work time with other duties</td>
<td>• Encourage staff to provide standard of care in their work flow with patient care.</td>
<td>• Lack of documentation of intervention in patient education</td>
</tr>
<tr>
<td>Funding for project</td>
<td>• Complete pro forma budget of cost if this EBP included others to participate</td>
<td>• Seek and apply for research grants if applicable.</td>
</tr>
<tr>
<td>Patient’s resources at home</td>
<td>• Identify resources at home and health literate education based on patient preference if possible</td>
<td></td>
</tr>
</tbody>
</table>
This EBP nursing project will contribute to the body of knowledge in nursing practice and need for delivery of educational methods influencing patient outcomes related to colon cancer. As noted in the facilitators and barriers table to practice change, organizational culture and support are both facilitators and barriers. In an organization with abundant opportunities supporting nurses’ professional development the culture is ready to participate in EBP. This includes senior leadership support and resources with EBP mentors. Organizational culture and support is also listed as a barrier because some healthcare team members may be resistant to changes that alter their practice. This resistance may “impede the flow of new ideas” (Williams, Perillo, & Brown, 2015, p e39).

**Ethical and Legal**

The EBP project did not interrupt the patient’s plan of care or alter any patient decisions. This retrospective chart review had no risk of patient harm or ethical apprehensions. All selected participants had equal opportunity to received health literate education with each ambulatory encounter.
The PI obtained permission from the Institutional Review Board (IRB) at Wright State University and The organization’s Quality Data leadership. No monetary funding cost were identified from internal and external sources for this DNP project. Documentation of teaching methods were retrieved from the patient’s chart during the retrospective chart review.

Measurement Process

This EBP project identified types teaching methods used by nursing when educating African-American patients with colon cancer in the ambulatory setting. Colon cancer health literacy education is a process within the healthcare setting to generate an outcome that patients are provided with health literate education with each encounter. Data reviewed for this retrospective chart review were from ambulatory encounters that occurred during a four month period. Nursing’s role of providing patient education was appraised using data from the electronic medical record (EMR) for non-descriptive findings to evaluate clinical practice.

See Table 5 Outcomes
A financial evaluation was completed prior to this nursing EBP project. The purpose of completing a financial evaluation was to determine the organization’s financial gain associated with the project. The following are “in-kind” expenses considered by the PI that may impact the organization. The expense of nursing time to prepare for participation in this EBP project included time to complete the Collaborative Institution Training Initiative (CITI). In addition to nursing time, there was an associated cost with an increase of office supplies. The supplies include printing paper, pens, printer ink, and staples or paper clips. The project roll out plan involved the principal investigator’s time as “in-kind” services associated with the project.

A financial analysis of expenses and revenue related to this nursing EBP project was used to determine financial feasibility of the project. This was determined by the cost benefit analysis. The cost benefit analysis created a ratio for benefit interpretation. A cost benefit ratio at one or greater is preferred as it is considered to add value (Finkle, Jones, & Kovner, 2013). To determine the ratio, data from the proposed income and expense statement was used. See Appendix O
<table>
<thead>
<tr>
<th>Evaluation Components</th>
<th>Measurement Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity Data</td>
<td></td>
</tr>
<tr>
<td>Nursing Documentation</td>
<td>Define what materials, methods of patient education provided from EMR review (3-4mos.)</td>
</tr>
<tr>
<td>Patient Satisfaction scores</td>
<td>Nurse indicators specific Consistent documentation to patient education</td>
</tr>
<tr>
<td>Criterion-related validity</td>
<td></td>
</tr>
<tr>
<td>(Press Ganey)</td>
<td></td>
</tr>
<tr>
<td>Benchmark data for Organizations of similar size</td>
<td></td>
</tr>
<tr>
<td>Cancer literacy assessment</td>
<td>Measuring health literacy</td>
</tr>
<tr>
<td>findings compared to NVS</td>
<td></td>
</tr>
</tbody>
</table>
Implementation process

The implementation process of this EBP project included a concise outline that measures a scholarly project affecting health literacy in African-American patients with colon cancer. This project is a nursing practice change project based on the evidence. In order to build the change from start to fruition, a nursing practice change framework was applied. The Model of Evidence-Base Practice Change by Rosswurm and Larrabee was selected. This model provides six succinct steps to changing a practice as well as integration of principles of quality improvement (Melnyk & Fineout-Overholt, 2015, p287).

Model of Evidence-Based Practice Change.
The first step is an assessment of the need for a change. In this initial step a problem is identified for a change in practice. The (PI) collected data from internal source (patient's chart) including teaching methods of education for African American patients diagnosed with colon cancer. The proposed nursing change was identified and linked to problems, interventions, or outcomes. The next step involved reviewing the literature for the best evidence. The PI examined different types of evidence sources and concepts. The process of a planned literature search occurred and completed with documented evidence for review. The third step in this model is critical appraisal of the evidence. Critical appraisal defined what the evidence suggest as well as an evaluation of the evidence proposed for a practice change. Included in the role of the DNP student is to develop and evaluate new practice based in theory (White & Zaccagnini, 2011). Part of the appraisal process included synthesizing the evidence including assessing for risks, benefits, and feasibility (Melnyk & Fineout-Overholt, 2015, p. 286). Step four is the actual development of the practice change plan. In this stage the PI defined the change and resources needed for the change. An implementation and evaluation plan is also completed. In the fifth phase, processes and outcomes are evaluated along with conclusion and recommendation for the change. The final step is to integrate and maintain the practice change. Data collected and synthesized in the previous step should be shared with stakeholders and project members. To share outcomes is part of the dissemination process of communicating the EBP findings to internal and external stakeholders. See Figure 1

As the PI planned this project using the Model EBP change, the development of a Gantt chart was used to evaluate progress of the project from start and conclusion.
Milestones not presented in the Gantt chart are represented on the timeline as an estimation of when the event will occur. The milestones are linked to the timeline with directional arrows linking in writing activities with a month and year to complete the task. A Gantt chart depicts the time of projects and tasks to be completed by a predicted timeframe (Dictionary, 2015). The Gantt chart for this EBP project incorporated dates in which activities should occur. Each oblong oval shape represents the six steps in the module in time intervals.

To complete this DNP project, incorporation of the Model for EBP change into a Gantt chart guided the project from start to completion. Application of a Gantt chart served as a road map for this DNP project to address the evidence used to provide health literacy education in African-American patients with colon cancer.
Figure 1 Model for EBP Change

Step 1: Assess the need for change in practice.
- Include stakeholders
- Collect internal data
- Compare external data with internal data

Step 2: Locate the best evidence
- ID types and source
- Review search concepts
- Plan search, review & conduct

Step 3: Critically analyze the evidence
- Appraise and weight evidence
- Synthesize
- Assess feasibility, risks, benefits

Step 4: Design the practice change
- Define proposed change
- ID resources
- Design pilot
- Design implementation plan

Step 5: Implement and evaluate change in practice
- Implement pilot study
- Evaluate process, outcomes, cost
- Develop conclusions & recommendations

Step 6: Integrate and maintain the change in practice
- Communicate recommendation to stakeholders
- Integrate into standards of practice
- Monitor outcomes & processes
- Disseminate results of the project


With permission
Ethical considerations of patient safety were included with this EBP project. The PI completed the appropriate CITI education for Protection of Human Subjects. This EBP proposal was categorized as exempt by Wright State University’s (WSU) Institutional Review Board (IRB) and categorized as quality data from the organization.

IV. EVALUATION

Descriptive research methods and data analysis procedures were used due to the short turnaround time from WSU-IRB for approval to conduct the retrospective chart review. Therefore, this EBP project examined types of health literacy teaching methods used by nurses in oncology clinics for African-American patients with colon cancer. No statistical associations or assumptions were made between types of education and patients during this review. Metrics from the retrospective chart review defined types of health literacy teaching methods used by nurses in oncology ambulatory clinics serving African-American patients with colon cancer during clinic encounters over four months. This time period was selected to provide the PI with an opportunity to have a sufficient sample size of data to review.
Demographics

Data from the retrospective chart review resulted in 711 patient encounters for African-American patients diagnosed with colon cancer and seen in oncology ambulatory clinics. Excluded from this chart review were 646 encounters identified as Caucasian, four encounters reported as more than one race/ethnicity, two were other race/ethnicity, and three encounters identified as Asian race/ethnicity. Twenty-two encounters were African-American but their encounter occurred outside of the review period. The remaining 34 encounters were reviewed for data analysis. The age range was 27 to 77 with a mean age of 51.38 years. The most frequent age or mode was 62 years, with a median age of 52 years. More than half were female 65% and the remainder male 35%. In the sample of African-American patients with colon cancer, 65% were diagnosed within six months to one year, 23% greater than one year, and 12% less than one year.
Discussion

This EBP project used a retrospective chart review to examine types of patient education teaching methods for African-American patients diagnosed with colon cancer during their clinical encounter. However, no associations were made regarding types of health literacy education and patient’s adherence to chemotherapy treatment plans of care. Nurses’ documented patient education in 97% of the encounters, and 3% did not have any documentation of patient education. More than half of the patient education teaching document was explanation (53%), blended teaching methods (41%) and use of audiovisual aids (3%); no patient education documentation was 3%. These findings are consistent with the EBP literature supporting the use of “Teach-Back, Audiovisual, Written or picture material, and Blended” teaching methods to provide patients with health literate education.
Limitations & Recommendations

Limitations identified from this retrospective chart review include the short turnaround time from WSU-IRB review process in analyzing the data resulting in descriptive statistical methods. Another limitation was, the low number of African-American patients seen at this facility during the review period compared to the Caucasian encounters (8% vs 91%); Only 1% identified with a different race/ethnicity. Therefore, this health care system may not be the preferred choice for some African-American patients seeking colon cancer treatment. Further studies or EBP projects are needed to examine system barriers or internal factors, such as family/significant others’ beliefs regarding colon cancer treatment affecting African-Americans at higher rates than Caucasians. It is important to examine African-American patient’s preference for healthcare services providing colon cancer treatment. Although the literature provided different teaching methods promoting adherence to treatment outcomes, nurses may not fully understand the different teaching methods promoting health literacy, such as “Teach Back, Blended methods or Explanation. Future EBP projects are needed to fully develop definitions of teaching methods promoting health literacy targeting high risk or vulnerable populations, namely African-Americans with higher incidence and mortality rates attributed to colon cancer compared to Caucasians. Despite these limitations, this DNP project identified an opportunity for nursing practice to develop tools/instruments that address gaps in health services for African-American patients. A final limitation was documentation of patient education in the electronic medical record (EMR) which offered nurses the ability to select one or more teaching methods used during the patient encounter and document the patient’s verbal response to the education, but these options did not define how patients’ apply health literate education that may change or promote health care decisions.
Providing patient education is critically important in the registered nurse’s role and within the professional scope of practice. Health literacy education should be supported by the highest level of evidence. Future recommendations for health literacy education is for nurses to assess patient’s understanding of the education received from previous clinical encounters to determine if the educational methods were effective. Follow up sessions with patients is paramount to learn how they are applying the health literate education at home.
Conclusion

This DNP project reported the findings of a retrospective chart review using different teaching methods for African-American patients with colon cancer. More than half of the encounters were female (65%) and the remainder were male (35%). Patient outcome of adherence to chemotherapy treatment was not measured from the retrospective chart review because the DNP project did not conduct inferential statistics supporting interpretative data analysis. Future EBP projects should include follow-up patient interviews to determine whether, the patient applied the nursing education at home or a later time period. Future EBP projects should also examine patient's perceptions of the education received in promoting adherence to their chemotherapy treatment plan of care. Completion of this DNP project focused on types of nursing education methods used for African-American patients diagnosed with colon cancer.
V. REFERENCES

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http://dx.doi.org/10.1080/10810730.2011.604391


http://dx.doi.org/10.10007/s10552-013-0225x.


doi: http://dx.doi.org/10.1016/j.nedt.2014.11.012
VI. APPENDICES
Appendix A Evaluation Table: Assessment of colon cancer screening

<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Conceptual Framework of Model</th>
<th>Design Methodology</th>
<th>Sampled Setting</th>
<th>Major Variables of Studies</th>
<th>Measurement</th>
<th>Data Analysis</th>
<th>Finding</th>
<th>Appraisal Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pendlimari, R., Holubar, S., Hassinger, J., &amp; Cima, R. (2011). Assessment of colon cancer literacy in screening colonoscopy patients: a validation study</td>
<td>No conceptual framework</td>
<td>Survey</td>
<td>Convenience sample of patients prior to colonoscopy procedure</td>
<td>The DV in this study was health literacy rate of colon cancer. The IV's are ACCL and NVS test</td>
<td>X squared, proportion, mean, st. deviation and 95% CI. 2x2 Contingency Table</td>
<td>NVS mean was 3.8+/−1.9 ACCL 5.1+/−2.2</td>
<td>ACCL was a valid tool to assess health literacy in colon cancer</td>
<td>Weakness. Small sample No Randomization</td>
</tr>
</tbody>
</table>

Legend: ACCL = Assessment of colon cancer literacy, NVS = New vital sign, LOE = level of evidence
<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Conceptual Framework of Model</th>
<th>Design/Method</th>
<th>Sample/Setting</th>
<th>Major Variables</th>
<th>Measurement</th>
<th>Data Analysis</th>
<th>Findings</th>
<th>Appraisal Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friedman, D., &amp; Hoffman-Goetz, L. (2008). Literacy and health literacy as defined in cancer education research: a systematic review</td>
<td>No framework</td>
<td>Systematic review of the literature</td>
<td>Convenienced sample. English only articles, peer-reviewed, empirical research, published between Jan. 1992-Oct. 2006</td>
<td>DV-education literacy</td>
<td>Aggregate data was analyzed using the Adult literacy survey. This scale grouped the articles to measure them on five literacy levels.</td>
<td>20% of American and 17% of Canadians scored lowest. Sweden with 7.5% scored the least lowest with 32.4% scoring in level 4 or 5 on the reading level scale.</td>
<td>Literacy was not addressed with all cancer to indicate feasibility. Studies indicate comprehension and readability of material impact patients healthcare decision-making</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C  Evaluation Table: Education level, not health literacy associated with information needs of colon cancer patients

<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Conceptual Framework of Model</th>
<th>Design/Method</th>
<th>Sampled Setting</th>
<th>Major Variables Studies</th>
<th>Measurement Data Analysis</th>
<th>Finding</th>
<th>Appraisal Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matsuyama, R., Wilson-Genderson, M., Kuhn, L., Moghanaki, D., Vachhani, H., &amp; Paasche-Orlow, M. (2014).</td>
<td>No Framework</td>
<td>Survey and health literacy assessment</td>
<td>Conveniences sample of newly diagnosed 62 AA and 76 non-Hispanic White adults with solid tumor cancers. Participants were selected from MD office and community hospital.</td>
<td>DV is education need. No intervention study</td>
<td>REALM TOFHLA TINQ Bivariate analysis &amp; regression analysis to determine CI</td>
<td>Informat ion need measure d 4.3 with CI of 95% out of 5 for greatest need.</td>
<td>Health literacy was linked to educatio n level has an impact on higher informat ion needs for patients with cancer.</td>
</tr>
</tbody>
</table>

Legend: REALM=rapid estimate of adult literacy, TOFHLA=test of functional health literacy, TINQ=Toronto informational needs questionnaire, CI confidence interval, LOE=level of evidence
<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Conceptual Framework and Purpose</th>
<th>Design/Method</th>
<th>Sample/Setting</th>
<th>Major Variables Studied</th>
<th>Measurement Data Analysis</th>
<th>Findings</th>
<th>Appraisal: Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheridan, Halpern, Viera, Berkman, Donahue, &amp; Crotty, (2011). Interventions for Individuals with low health literacy: A Systematic Review</td>
<td>No conceptual framework</td>
<td>Systematic review with inclusion and exclusion criteria</td>
<td>English only articles</td>
<td>IV is health literacy DV: Comprehension comparison, pictorial information(symbols), Color traffic symbols, video, application of self-management interventions. Mixed-strategies include label reading and video, 8-10 hrs of instruction with Rx medication adjustment, increased frequency of visits</td>
<td>Health Literacy measured using: REALM, Numeracy scale, adapted from Lipkus &amp; Schwartz, DR Numeracy Test, WRAT, Woodcock Johnson, S-TOFHLA, TOFHLA, WRAT-R</td>
<td>Numeracy scale varied with p value on a 3 to 7 pint scale. 2 RCT studies with RRR has a p=.002. studies with OR noted at CI of 95%. REALM &amp;TOFHLA &lt; 12 grade literacy</td>
<td>More meta-analysis. Mixed strategies had better outcomes than single. Not all intervention were successful at mitigating low health literacy (Sheridan et al., 2011, p. 50).</td>
</tr>
<tr>
<td></td>
<td>Purpose: define which interventions mitigated low health literacy.</td>
<td></td>
<td>38 studies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:** RCT randomized control trials; S-TOFHLA short form test of functional health literacy; REALM rapid estimate of adult literacy; TOFHLA test of functional health literacy; WRAT-R wide range achievement test-revised, LOE level evidence
### Appendix E Evaluation Table: Interventions to improve health outcomes for patients with low literacy

<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Conceptual Framework and Purpose</th>
<th>Design/Method</th>
<th>Sample/Setting</th>
<th>Major Variables Studied</th>
<th>Measurement</th>
<th>Data Analysis</th>
<th>Findings</th>
<th>Appraisal: Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pignone, M. DeWalt, D., Sheridan, S., Berkman, N. &amp; Lohr, K. (2005). Interventions to improve health outcomes for patients with low literacy: a systematic review</td>
<td>No conceptual framework</td>
<td>Systematic Review was to identify interventions to improve health outcomes for patients with low literacy</td>
<td>20 studies (18 US, 2 NON-us, 9 RCT)</td>
<td>IV=no intervention or standard intervention</td>
<td>REALM, WRAT</td>
<td>Video correlation r=0.65, P=.0001 (per 1 study). 8/11 women with low literacy understood 80% of objectives (per 1 study). REALM &amp; WRAT &lt; 8th grade literacy</td>
<td>Meta-analysis of data. 10 studies</td>
<td>Weakness: No harm risk. Applicability to general population. Limited intervention studies. Strengths: Healthcare providers’ apply a variety of teachings to benefit HL. LOE: I &amp; IV (Melnyk &amp; Fineout-Overholt, 2015, p. 92)</td>
</tr>
</tbody>
</table>

**Legend:** RCT randomized control trials; REALM rapid estimate of adult literacy; WRAT wide range achievement test; HL health literacy, LOE level of evidence.
Appendix F  Critical Appraisal of Selected Articles

Rapid Critical Appraisal of Descriptive Studies, Pendlimari ET AL

1. Why was the study done?
   a. Was there a clear explanation of the purpose of the study and, if so, what was it? Yes the purpose of this study was clear defined to validate the assessment of colon cancer literacy (ACCL) compared with a standard health literacy test known as NVS (Newest Vital Sign).

2. What is the sample size?
   a. Were there enough people in the study to establish that the findings did not occur by chance? For this descriptive study there were enough participants. Participant selection is from a convenience sample of patients having a colonoscopy. A total of 61 people completed the ACCL and the NVS survey.

3. Are the instruments of the major variables valid and reliable?
   a. How were variables defined? Were the instruments designed to measure a concept valid (did they measure what the researcher said they measured)? The variables in this study are DV health literacy of colon cancer. The independent variables used to measure the DV are the NVS and the ACCL. The IV variables measured what they were intended to measure.

   b. Were they reliable (did they measure a concept the same way every time they were used)? Yes, both assessment tools were reliable. The test was not repeated during this validation study.

4. How were the data analyzed?
   a. What statistics were used to determine if the purpose of the study was achieved? Statistics used to compare X square tests for sensitivity and specificity. All stats were performed using JMP version 8.0 for windows.
Results were reported as frequency (proportion), mean, standard deviation, and odds ratio with 95 % CI.

5. Were there any untoward events during the study?
   a. Did people leave the study and, if so, was there something special about them? Yes, one subject was excluded for not completing the survey prior to colonoscopy testing; one excluded due to prior history of colon cancer, and one physician was excluded due to extreme discrepancy between scores.

6. How do the results fit with previous research in the area?
   a. Did the researchers base their work on a thorough literature review? No, based on the article the key words are: colon cancer, patient education, health literacy, ACCL, cancer-specific education patient assessment. The article does not identify databases used in preparing for the validation study.

7. What does this research mean for clinical practice?
   a. Is the study purpose an important clinical issue? The purpose of this study has clinical significance. These tools could be used to address future patient knowledge of colon cancer when developing educational program to promote health literacy.
Appendix G  Rapid Critical Appraisal of Descriptive Study Matsuyama et al.

1. **Why was the study done?**
   a. Was there a clear explanation of the purpose of the study and, if so, what was it?

   Yes, the study was to examine if there is an association with race, health literacy and self-report needs for information regarding health care and disease. The hypothesis is patients with lower health literacy would have higher information needs based on race.

2. **What is the sample size?**
   a. Were there enough people in the study to establish that the findings did not occur by chance?

   The sample size was selected from an oncologist office to include patients diagnosed with solid tumor cancers that were staged II-IV. The sample was convenience from one provider's office. The sample size was N=138. Included in the sample were 62 African Americans, 76 non-Hispanic White patients with cancer. The female participants were 35 AA and 51 non-Hispanic White. The male participants were 27 AA and 25 non-Hispanic White.

3. **Are the instruments of the major variables valid and reliable?**
   a. How were variables defined? Yes the instruments used to evaluate the data are valid and reliable to the variables in the study. The instruments used were the REALM, TOFHLA, and the Toronto Informational Needs Questionnaire (TINQ). The REALM was used to test functional literacy. TOFHLA was used to measure health literacy assessment. And the TINQ was used to assessment information needs specific with breast cancer. Application of this tool eliminated disease specific questions and made the test general to all cancers.

   b. Were the instruments designed to measure a concept valid (did they measure what the researcher said they measured)? Yes the instruments measured what it said it would.
c. Were they reliable (did they measure a concept the same way every time they were used)? Yes, the results were measured the same with every variable in the study.

4. How were the data analyzed?
   a. What statistics were used to determine if the purpose of the study was achieved? The statistics used to determine if the purpose of the study was achieved were bivariate & regression analysis to determine CI's of the data. Information needs were measured 4.3 with a CI of 95% out of 5. Participants with the greatest informational needs were 4.3, CI 95% and the least need for psychosocial was 3.7, CI 95%

b. 

5. Were there any untoward events during the study?
   a. Did people leave the study and, if so, was there something special about them? The article does not indicate any participants left the study. The study design included consenting the participants, completed the self-reported surveys followed by $25 dollar participation allotment. This was a one-time encounter. Participants excluded were patients with stage 0-1 cancer diagnosis due to the information needs may be fewer.

6. How do the results fit with previous research in the area?
   a. Did the researchers base their work on a thorough literature review? The findings are summarized from “research indications”. The article does not list a literature search was completed.

7. What does this research mean for clinical practice?
   a. Is the study purpose an important clinical issue?
      The research in the study indicates there is clinical significance for health care professional to consider the education literacy does correlate with health literacy and patient informational needs. This is helpful when providing health information to patients with low literacy levels to ensure they understand health care needs to make appropriate health care decisions.
Appendix H  Rapid Critical Appraisal of Systematic Reviews of Clinical Interventions/Treatments Friedman et al

1. Are the results of the review valid?
   a. Are the studies contained in the review randomized controlled trials? No, the articles listed in this systematic review were not based on randomization.

   b. Does the review include a detailed description of the search strategy to find all relevant studies? Yes, the author outlines a detailed search strategy. Keywords used were cancer education, health literacy, literacy and review. Databases used were Medline, Psych Info, CSA Sociological abstracts, Social Sciences Citation index, and CINAHL. The search results in 78 articles for review. Inclusion criteria included published articles from January 1992 to October 2006. English language, peer reviewed journals age eighteen and over, and available via the university library.

   c. Does the review describe how validity of the individual studies was assessed (e.g., methodological quality, including the use of random assignment to study groups and complete follow-up of the subjects)? Yes, the review describes how the articles were assessed but lacks randomization. This was a systematic review of the literature.

   d. Were the results consistent across studies? Yes, the results were consistent at identifying there are inconsistency with defining literacy and health literacy.

   e. Were individual patient data or aggregate data used in the analysis? Yes, aggregate data was used to describe the results of the review. The data was analyzed using the International Adult Literacy Survey. This survey grouped the articles on a Likert scale to measure five levels of literacy.

2. What were the results?
   a. How large is the intervention or treatment effect The intervention or effect size was not identified since this was not a review of RCT's
b. (OR, RR, effect size, level of significance)? The statistical analysis is unknown as this was a systematic review of the literature.

3. Will the results assist me in caring for my patients?
   a. Are my patients similar to the ones included in the review? Yes
      The patients discussed are similar to the ones proposed to include for review on health literacy.

   b. Is it feasible to implement the findings in my practice setting? Yes
      Adopting health literacy in the practice of nursing is feasible to the current practice setting

   c. Were all clinically important outcomes considered, including risks and benefits of the treatment? No
      Risks and benefits were not directly identified. A consensus regarding consistency with terminology among health care providers was identified in the conclusion.

   d. What is my clinical assessment of the patient and are there any contraindications or circumstances that would inhibit me from implementing the treatment? Unknown
      Currently there are no known barriers that would inhibit implementing improving health literacy with colon cancer patients.

   e. What are my patient’s and his or her family’s preferences and values about the treatment that is under consideration? Yes
      Patients and families value being provide health care information. It is paramount to the education of screenings, education, understanding of cancer prevent and adherence to treatment.
### Appendix I JHNEBP Appraisal

#### Level I (Study Design)

<table>
<thead>
<tr>
<th>RCT or Experimental</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

#### Level II
- Quasi Experimental: X

#### Level III
- Non-Experimental
- Qualitative: X X X

#### Level IV
- Non-Research Clinical Practice Guidelines
- Consensus or Position statement: X

#### Level V Non Research
- Literature review
- Expert Opinion
- QI
- Financial Evaluation
- Case Report
- Community Standard: X X X
- Consumer Preference: X X X


1- Meraviglia, et al., 2- Sheridan, et al., 3- Pignone, et al., 4- Geboers et al., 5- Matsuyama et. al., 6- Baur, et al., 7- Dewalt, et al., 8- Ferguson & Pawlak
### Appendix J Synthesis Table

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Study Design</th>
<th>Level of Evidence</th>
<th>Quality Rating</th>
<th>Intervention(s)</th>
<th>Clinical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>RCT</td>
<td>II</td>
<td>B</td>
<td>1:1 Support Pictorial information Easy read material Video narrative Written information</td>
<td>++</td>
</tr>
<tr>
<td>38 studies</td>
<td>SR</td>
<td>III</td>
<td>A</td>
<td>2:2 Support Easy read material Video tapes Computer program In person instruction</td>
<td>++</td>
</tr>
<tr>
<td>20</td>
<td>SR</td>
<td>III</td>
<td>B</td>
<td>Written Material Video adapted to pts.</td>
<td>++</td>
</tr>
<tr>
<td>17 Reviews</td>
<td>SMR</td>
<td>III</td>
<td>C</td>
<td>HL screening REALM testing WRAT-R testing STOFHLA testing</td>
<td>++</td>
</tr>
<tr>
<td>138 participants</td>
<td>Quasi</td>
<td>IV</td>
<td>B</td>
<td>Written material Visual media Web sites Pictorial Speak in lay terms</td>
<td>++</td>
</tr>
<tr>
<td>ND</td>
<td>QI</td>
<td>V</td>
<td>B</td>
<td>Clear communication Teach back/ Ask me 3 Telephone calls f/u Brown bag</td>
<td>++</td>
</tr>
<tr>
<td>6 Networks 473 professionals</td>
<td>NE</td>
<td>V</td>
<td>B</td>
<td>Ask me 3 Teach back Layman terms Pictures 1 or 2 syllable words AHRQ toolkit</td>
<td>++</td>
</tr>
</tbody>
</table>

- Dewalt et al
- Meraviglia et al
- Sheridan et al
- Pignone et al
- Geboers et al
- Matsuyama et al
- Baur et al
- Ferguson Pawlak

**Intervention(s):**
- 1:1 Support
- 6 week sessions
- 2 month f/u Telephone calls
- Telephone calls f/u
- Ask me 3 Teach back
- Layman terms
- Pictures / video
- 1 or 2 syllable words
- Easy reading material
- AHRQ toolkit

**Clinical Significance:**
- ++
- ++
- ++

**Statistical:**
- ↑
- ↑
- ↑
- ↑
- ↑
- ↑
- ↑
- ↑
- ND
Significance

Legend: SR=Systematic Review, SMR=Systematic Meta Analysis, QI=Quality improvement, ND=Not Defined, NE=Nonexperimental, HL=Health literacy, REALM=Rapid estimate of Adult literacy, WRAT-R=Wide range Achievement test revised, TOFHLA=test of functional health literacy. Arrow up=positive change, Arrow across=No change
## Appendix K Recommendation based on Synthesis of the Evidence

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Number of Sources/ Levels</th>
<th>Overall Quality Rating</th>
<th>Synthesis of Findings Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level II</td>
<td>1</td>
<td>B</td>
<td>Synthesis of level II evidence indicates the personal connection with the health provider and patient will impact health literacy. Adding to the body of evidence that mixed education strategies should be included to impact health literacy.</td>
</tr>
<tr>
<td>Level III</td>
<td>3</td>
<td>A &amp; B (2,3,4)</td>
<td>The evidence suggests there are multiple interventions to impact health literacy. Selection to be determines on the persons’ level of understanding and patient preferences.</td>
</tr>
<tr>
<td>Level IV</td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Level V</td>
<td>5</td>
<td>B 62</td>
<td>Review of the evidence suggests two approaches to evaluate health literacy encompasses use of different interventions individually or</td>
</tr>
</tbody>
</table>
Appendix L  Health Literacy and Colon Cancer

Demographic Data
All information will be circled by principle investigator (PI) during retrospective chart review

1. Letters will be used to protect patient confidentiality __________

2. Gender (circle): Female _______ Male_________

3. Age in years: Circle : less than 50  50-59  60 and older

4. Race: Circle all that Apply
   a. Asian
   b. Black or African America
   c. White/ Caucasian
   d. American Indian or Alaskan Native
   e. Pacific Islander
   f. Hispanic/ Latino
   g. Mixed race/ ethnicity or bi-racial

5. When was the patient diagnosed with Colon Cancer?
   a. Less than 6 months __________
   b. 6 months to 1 year ago ________________
   c. Greater than 1 year ________________
Appendix M  Proforma Budget

DNP capstone project financial analysis (Health Literacy and Colon Cancer)

Proforma Budget

1 RN time for IRB training 15 hours each@ $35.00/hr
   $525.00 (in-kind)
Paper and other Supply for increase printing of materials
   $40.00
Non-productive work time for project roll-out 40 hours each@ $35.00/hr
RN’s (in-kind)
   $1400.00
Total Expenses
   $1965.00

Proforma Income

Productivity in Nursing time RVU=.5 for 30 minutes additional education
Approximation of 50 Units of Service (UOS) during 3 months
   $875.00
(.5*50=25 UOS, billable@ 35.00 per UOS)

Press Ganey Scores (Benchmark Data)
   96 percentile= est. 90% reimbursement of Value Base Purchasing
   (.90*35.00=31.50, 31.50* 25(uos)=787.5)
   $787.50

Proposed Grant funding for project
   $500.00
Total Revenue for project
   $2162.50

Cost Benefit Analysis in Dollars
Benefit (revenue) $2162.50
Cost (Expenses) $1965.00
$2162.50/$1965.00= 1.1 (ratio)
Appendix N  Data Collection sheet

The Principal Investigator (PI) will complete the following information from a retrospective chart review. Each question will be circled by the PI based on the findings from the chart review.

Letter assigned ____________

Date of chart review: ________________

1. Was patient education completed by the nurse? yes no

2. Did the nurse use a teaching method listed? yes no
   Teach-back  Audiovisual  Written or picture material  Blended

3. If yes, the PI will circle the type of method used
   Teach-back  Audiovisual  Written or picture material  Blended
Appendix O Johns Hopkins School of Nursing

Thank you for submitting the requested information. You now have permission to use the JHN EBP model and tools.

Click here to download the tools. Reminder: You may not modify the model or the tools. All reference to source forms should include "©The Johns Hopkins Hospital/The Johns Hopkins University."*

We offer an excellent online course about our model/tools. It is an engaging online experience, containing interactive elements, self-checks, instructional videos, and demonstrations of how to put EBP into use. The course follows the EBP process from beginning to end and provides guidance to the learner on how to proceed, using the tools that are part of the Johns Hopkins Nursing EBP model. Take a sneak peek of the course.

Click here for more information about our online course. Group rates available, email ijhn@jhmi.edu to inquire.

Do you prefer hands-on learning? We are offering a 5-day intensive Boot Camp where you will learn and master the entire EBP process from beginning to end. Take advantage of our retreat-type setting to focus on your project, collaborate with peers, and get the expertise and assistance from our faculty. Click here to learn more about EBP Boot Camp.
Appendix P  McGraw Hill Publishing

PERMISSION LICENSE: PHOTOCOPY
DUPLICATION USE Request ID/Invoice Number: MO 1417

Date: July 11, 2016

To: Judith
   Jeffereson
   Gordon
   Wright
   State
   University
   3339
   Retriever Rd
   Columbus
   OH
   43232
   United States
   "License"

McGraw-Hill Education

Material Author:

Larrabee
Title: Nurse to Nurse: Evidence-Based Practice
Edition: 1
ISBN: 9780071590839
Description of material: Page 22

(ONLY 1 page) Fee: "Waived"

Purpose of Reproduction
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I. A SIGNED COPY OF THIS AGREEMENT should be sent to McGraw-Hill Global Education Holdings, LLC, Attn: Permissions Department, Wells Fargo Bank, Lockbox #6167, PO Box 8500, Philadelphia, Pa. 19178-6167.
WSU IRB STUDY EXEMPTION LETTER

Exemption date: February 18, 2019
Exemption category: 4iii

PI: Judith Jefferson-Gordon, Doctor of Nursing Practice program

IRB#: 06624
Title: Health Literacy: Approach to Colon Cancer in African-Americans

The WSU IRB has reviewed and determined that the above project is exempt from IRB review. This review and exemption approval were processed in accordance with federally defined categories of exempt review per 45 CFR 46.101 and WSU IRB policies.

The WSU IRB also determined that all specific criteria for waiver or alteration of authorization in accordance with 45 CFR 164.508 were met for this study that will involve the following protected health information or PHI:

Age, gender, race/ethnicity and medical diagnosis of colon cancer, Initials.

Because your study involves PHI you are required to submit an amendment for WSU IRB Office approval prior to any study staff changes, collection of additional data and/or increasing the number of medical records or biospecimens involved in this study.

Continuing review is not required for exempted studies. However, should your study significantly change, please contact the WSU IRB office prior to initiating those changes to assess whether the study will or will not continue to be exempt.

We appreciate the opportunity to evaluate this research and wish you success with the project. Thank you,

The Wright State University IRB OHRP
#IRB00000034
## Appendix R OSU Data Release

### Required Information

#### Requestor Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Response</th>
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<tbody>
<tr>
<td>Requestor Name:</td>
<td>Jefferson-Gordon Judy</td>
</tr>
<tr>
<td>Requestor Title:</td>
<td>Nursing-A4</td>
</tr>
<tr>
<td>Requestor Department:</td>
<td>JamesCare East - Exam (96821)</td>
</tr>
<tr>
<td>Requestor Phone Number:</td>
<td>614-685-9035</td>
</tr>
</tbody>
</table>

#### Project Information

- **Project Title:** Health literacy: Approach to Colon Cancer in African American
- **Today's date:** 11/8/2018
- **If the request is time sensitive, please include important deadlines:** Start data review the first week of December
- **Provide background information regarding the program, study, or initiative related to this request—including specific aims, study time period, population, etc.:** This data will be used as part of my Evidence base project for my DNP program at Wright State University

#### Request Details

<table>
<thead>
<tr>
<th>Where will the data be released?</th>
<th>Internal Database/Registry</th>
</tr>
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<td></td>
<td>D External Database/Registry</td>
</tr>
<tr>
<td></td>
<td>0 Publication of research/study</td>
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<tr>
<td></td>
<td>D Regulatory Agency (e.g. CMS, TJC)</td>
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<td></td>
<td>D Insurance Company (payer)</td>
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<td></td>
<td>D Other</td>
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| Does this request involve a vendor contract? | D (check if yes) |

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<th>Business units involved in your project:</th>
<th>D University Hospital</th>
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</thead>
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<td>D University Hospital East</td>
</tr>
<tr>
<td></td>
<td>D Richard M. Ross Heart Hospital</td>
</tr>
<tr>
<td></td>
<td>b2i James Cancer Hospital</td>
</tr>
<tr>
<td></td>
<td>D OSU Harding</td>
</tr>
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<td></td>
<td>D Dodd Hall</td>
</tr>
<tr>
<td></td>
<td>D Primary Care</td>
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<td>D Specialized Care Network</td>
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<th>Level of data restriction (see HIPAA Glossary):</th>
<th>D De-identified data as defined by HIPAA</th>
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<tbody>
<tr>
<td></td>
<td>0 Limited data set as defined by HIPAA</td>
</tr>
<tr>
<td></td>
<td>0 Full protected health information (individually identifiable health information)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provide a complete list and description of data being published and/or reported</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Attach spreadsheet, data dictionary, or data collection tool to the right.</th>
</tr>
</thead>
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<td>ili No file attached</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Data source(s)</th>
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</thead>
<tbody>
<tr>
<td>b2i Medical record review (prospective/retrospective)</td>
</tr>
<tr>
<td>D Information Warehouse</td>
</tr>
<tr>
<td>D Internal database/registry</td>
</tr>
</tbody>
</table>
Do you need assistance obtaining the data? If so, please fill out this Date Request Request Form.

Provide a complete list of data elements or data being released

OR

Attach spreadsheet, data dictionary, or data collection tool to the right.

Is data part of a research study?

0 Other
D Unknown - Assistance Requested

gender, race, age, date of diagnosis, education completed by nurse, teaching method listed

IA No file attached

Additional attachments

W No file attached

0 Yes.

Provide a description of study and findings.

Please attach IRB approval form

if No file attached

-OR-

Enter IRB no. and specify whether OSU IRB or WIRB

0 OSUIRB 0 WIRB

@ No, not applicable

D Unknown.

Please complete QI Research Determination Tool

Please attach a pdf of the QI Research Determination Tool.

N No file attached

If applicable, identify the quality committee responsible for oversight and addressing opportunities for improvement.

Please route the form to the appropriate Nursing Director, Nursing Quality Director, Clinical Department Chair, or Administrator to ensure they are aware of the data being released, resources required (if any), and have an opportunity to address any questions or concerns.

Executive Sponsor (Nursing Director, Quality Director, Clinical Department Chair, or Administrator):

Colussi, Carol

Press this button if you need to finish the form later

Press this button if you've completed the form

Press this button if you need to resubmit the form (you've been requested to provide more information)

Executive Sponsor Comments

Sponsor Comments: Great thesis!

Approve/Reject: Approve

Leader Name: i:01\wlosum\colussi03

Date Approved: 2018-11-08T16:06:03