2022

Improving Patient Health Literacy: Implementation of Health Literacy Tool & Hematology Oncology Patient Education Checklist

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Improving Patient Health Literacy: Implementation of Health Literacy Tool & Hematology-Oncology Patient Education Checklist

**Purpose:** Increase health literacy and communication using a tool with a discharge checklist to facilitate communication and understanding among patients, physicians, and nursing staff.

**Background and significance:** In the United States, 90 million people are affected by low health literacy impairing their ability to understand and comprehend health information (Institute of Medicine et al., 2004). Another 40 million Americans have difficulty reading complex texts that makes reading health information difficult (Institute of Medicine et al., 2004). The Affordable Care Act emphasizes the need for increased self-care as a key strategy for improving health care costs and improving the quality of care (Kaiser Family Foundation, 2018).

With low health literacy, patients cannot provide effective self-care strategies such as understanding when to go to the emergency room and how often to take their medication. Low literacy costs the United States $225 billion each year (Literacy Statistics, 2010). Successful implementation of the Affordable Care Act includes an aspect of health literacy such as: making successful adherence to medication regimens, understanding medical information, and successfully communicating with providers on medical decisions (Kaiser Family Foundation, 2018).

Hematology oncology patients need to understand their complex health information to be able to manage their care outside of the hospital.

**Intervention and Implementation Plan:**

Nurses were provided a brief training session on health literacy and the discharge education checklist project. After completion of training, nurses were instructed to provide leukemia patients the health literacy assessment quiz at the time of admission. Based on their health literacy
score, the physicians, nurses, and other interdisciplinary team members adapted patient education to meet the patient’s needs. Discharge education was completed throughout the hospitalization and was documented in the patient’s discharge checklist. At the time of discharge, patients are provided the same health literacy quiz to assess their level of health education provided during their hospital stay, and discharge checklist items are completed. **Results and Implications:** As a result of the health literacy training, discharge education checklist, and health literacy toolkit, leukemia patients had an increase in their health literacy from the time of admission to the time of discharge. The increase in health literacy was achieved with an average of 2.1 points higher from pre and post-test scores. Future recommendations include the continuation of starting discharge education at the time of admission, implementation of health literacy interventions with the addition of in-depth training for nursing staff, and consideration of expanding this intervention to all patients on an inpatient oncology floor. **Conclusion:** Providing patients early discharge education reduces their risk of mortality and improves their quality of life by allowing improvement in patient self-care through better understanding of their medical treatment. Leukemia patients are better educated about their health and early identification of low health literacy is screened so that interventions can be implemented by nurses, physicians, and other interdisciplinary team members. **Keywords:** health literacy, discharge education, health information, literacy skills, health outcomes, communication, hematology-oncology.
Clinical Implication

Literacy is the ability to understand, evaluate, use, and engage with written text so that an individual can achieve a goal and develop knowledge (Centers for Disease Control and Prevention, 2019). Understanding health information is an important aspect of a patient’s health outcomes. People with lower health literacy are more likely to report poorer health than those with better literacy skills (Centers for Disease Control and Prevention, 2019). Health literacy is an important aspect of hematology-oncology patients' discharge planning. Literacy allows these patients to be able to understand health information and make informed health decisions based on a new diagnosis. In 2003, the National Assessment of Adult Literacy (NAAL) conducted by the U.S. Department of Education, discovered that 36% or about 80 million Americans scored either basic or below basic for having limited health literacy (National Assessment of Adult Literacy, 2006). Common health tasks such as reading a prescription bottle and understanding health information can be difficult for these individuals. Low health literacy is associated with poor communication between patients and healthcare providers resulting in poor health outcomes, increased hospitalization, and higher rates of disease and mortality rates (National Assessment of Adult Literacy, 2006).

Problem Description

Hematology oncology patients have a complicated journey to recovery. These patients are unique because they have a compromised immune system requiring specific patient education to prevent infection and to regain a healthy immune system. Such education includes restricting fresh fruits, vegetables, and flowers, limiting sick visitors, and understanding complicated medication regimens. Lack of proper education and instruction complicates and
slows the patient's recovery. For patients to be successful in their treatment, it is essential for
providers to recognize the needs of this patient population early during their hospital admission
to prepare for successful discharge home.

Individuals providing health information such as nurses, doctors, and caregivers should
provide patients with resources needed to safely return home, provide effective self-care, and
prevent readmission (Centers for Disease Control and Prevention, 2019). Improving health
literacy associated with cancer-related attitudes, knowledge, and behaviors helps improve patient
trust, self-efficacy, and decision-making (Simmons et al., 2017).

**Significance of the Problem**

In the United States, 90 million people are affected by low health literacy impairing their
ability to understand and comprehend health information (Institute of Medicine et al., 2004).
Another 40 million Americans have difficulty reading complex texts that makes reading health
information difficult (Institute of Medicine et al., 2004). During hospitalization, a patient
receives an abundance of health information from written material such as discharge teaching,
medication prescriptions, and verbal instructions from nurses and doctors. The overload of
information can be overwhelming and challenging to understand medical terminology. Medical
terms such as Q4H, TID, JP drain, and PO can be difficult for someone without a medical
background to know leading to confusion about when to take new medications, when to call their
physician with concerns or when to go to the emergency department. The Affordable Care Act
emphasizes the need for increased self-care as a key strategy for improving health care costs and
improving quality of care (Kaiser Family Foundation, 2018). To play an active role in their
health care, patients need to understand health information and medical treatment that is
provided to them (Institute of Medicine et al., 2004). Fulfillment with the Affordable Care Act
includes successful adherence to medication regimens, understanding medical information, and successfully communicating with providers on medical decisions (Kaiser Family Foundation, 2018).

Health literacy is particularly crucial for hematology-oncology patients because they need to understand their health information for making informed decisions during hospitalization and post-discharge for self-care. Post-discharge is a vulnerable period for patients on new medications, new diagnoses, and new information which is when increasing patients' health literacy about their disease and its management is critical.

Health literacy is essential to improve patient outcomes and thus reduce costs of health care. (Institute of Medicine et al., 2004). Low health literacy has a direct correlation with patient outcomes. The relationship between health literacy and patient outcomes is positive to reduce patient complications and readmissions for in-patient treatments (DeWalt, Berkman, Sheridan, Lohr, & Pignone, 2004). Low health literacy is strongly associated with higher mortality rates and recurrent preventable readmissions (Literacy Statistics, 2010).

**Current Practices**

Current discharge practice at UTMC medical oncology inpatient unit includes providing a packet of written medical information and a quick verbal explanation of post discharge instructions by the nurse. This method of discharge teaching does not allow the patient time to process information which can result in confusion, misunderstandings and inappropriate self-care interventions. When this occurs, patients may decide to ignore the health problem and delay seeking care resulting in adverse outcomes.
Available Knowledge

Virginia Commonwealth University developed two different health literacy tools used for oncology patients. The tools were used in a wide range of oncology patients to help assess their health literacy along a continuum. The two health literacy tools used were a 30-question health literacy tool that was used to measure health literacy along a continuum. A 6-question health literacy tool was used to quickly determine if the patient had limited health literacy. The study found that the two tools accurately assessed the patients’ health literacy.

For the study conducted at UTMC, the data will be collected looking at pre and post-admission questionnaires given to the participants based on a psychometrically sound instrument designed to measure cancer health literacy developed by the Virginia Commonwealth University Cancer center (Dumenci et al., 2014). These questions cover medications, diagnosis, nutrition, and infection prevention.

The pre-admission questions take less than 5 minutes to complete and allow the health care providers and nursing staff to measure the patients' health literacy level. Once the patients' health literacy level is determined, the health care personnel adapt patient discharge information in terms they understand (Dumenci et al., 2014).

Evidence-Based Practice Model

The Iowa Model of Evidence-Based Practice was used to guide this project in decision making. The steps in the Iowa Model are to start by identifying the clinical issue and why this issue needs a solution (Buckwalter et al., 2017). The clinical issue is low health literacy during discharge. During the discharge process, patients receive education material that they do not understand. Patients are unable to understand their discharge papers due to medical jargon, not
enough information, and/or complicated text. The Joint Commission on Accreditation of Healthcare Organizations encourages written material to be presented at or below a 5th-grade reading level because the average Medicare beneficiary reads at a 5th-grade level (Stossel, Segar, Gliatto, Fallar, & Karani, 2012). This includes information displayed to the patient in easier to read text and simplified information to address all patient’s healthcare needs.

The next step in the Iowa Model is deciding the purpose (Buckwalter et al., 2017). The purpose is to improve hematology oncology patient outcomes through improving health literacy and communication. Poor outcomes for hematology-oncology patients include not enough resources, readmission to the hospital that results in more infection and medical expenses, and poor management of medications and health. This is a priority for patients because their discharge information is important for the safety of their health and to allow hematology-oncology patients to resume treatments and recover by prevention of their poor outcomes.

During the Iowa Model process next is to form a team (Buckwalter et al., 2017). The patient education checklist team includes the DNP student, nurse manager, nurses, physicians, case manager, and DNP chair. This team was formed to help identify the clinical issue, find a solution, implement the patient education checklist, and evaluate the outcomes. Next, we will conduct a systematic search to determine the quality and risk of implementation of the patient education checklist (Buckwalter et al., 2017). Once we had sufficient evidence using the protocol for discharge implementation we created an evaluation plan.
Literature Review

The literature review was conducted from May 2020-July 2020 using MESH terms, Boolean connectors, and subject headings in PubMed, CINHAL, and Cochran. Criteria for exclusion included pediatric populations and outpatient settings. Key terms included: patient safety, quality improvement, patient discharge, checklist, standard, medical errors, health literacy, etc. Studies that were included were populations of adults, studies of cardiovascular, renal, and oncology patients, and studies that included nurses, doctors, and other interdisciplinary team members. The studies included in my literature review were 7.

The evidence found from the literature review helped provide recommendations for implication of the discharge checklist and health literacy tool. The use of an electronic discharge checklist allows physicians to remember to perform a discharge task more efficiently than from memory (Garg, Lee, Evans, Chen, & Shieh, 2015). Next, a timeout discharge checklist was found to be an efficient tool to improve discharge that resulted in at least one change to discharge documentation or a good catch (Gao et al., 2018). Song et al (2013) found to improve quality of care and optimization of care planning to heart failure patients (Legallois et al., 2019). A discharge checklist also improved discharge care planning that helped improve patient outcomes, quality of care, and improved nursing competency (Soong et al., 2013). A discharge checklist was found to improve safety for the interdisciplinary team before the patient leaves the hospital (Drake, McBride, Bergin, Vandeweerd, & Higgins, 2017). Lastly, discharge medication checklist allowed for a reduction in medication errors and provided medication education prior to discharge (Byrne, Sierra, & Tolhurst, 2017). Overall, different forms of a discharge checklist
have been proven to provide improvement in quality of care, patient outcomes, discharge planning, and reduction in medication errors in many different settings and populations.

**Intervention Purpose and Goal**

The purpose of this intervention was to implement a health literacy tool with a discharge checklist to facilitate communication and understanding among patients, physicians, and nursing staff. The goal of this intervention was to improve discharge education and health literacy to hematology-oncology patients with a complex diagnosis and long-term medical care improvement in their health literacy and self-care management. This will allow patients the ability to make informed decisions about their health and improve their mortality.

**Setting and Population**

The setting for this practice improvement project is the University of Tennessee Medical Center’s inpatient hematology-oncology unit that serves East Tennessee and is a referral center for Southern Kentucky and Western Carolina. The Tennessee hospital is the region's academic medical center and Magnet recognized. The Cancer Institute is the largest provider of cancer care in the region offering a wide range of cancer specialties and services. The setting of the intervention will take place on a 30-bed oncology floor. The population of interest includes newly diagnosed hematology-oncology in-patients who are seeking long-term chemotherapy treatment. During chemotherapy induction, the newly diagnosed patient will receive chemotherapy treatment for 14-30 days. During this time, patients are confronted with enormous amounts of health information, tests, treatments and procedures. As a result, the patient may see
many different doctors and interdisciplinary team members throughout their stay adding to the complexity of their health care and stress.

The U.S. Department of Health and Human Services had outlined health literacy as the ability to obtain, process, and understand health information that an individual needs to make for their health decisions. The relationship of health literacy and an individual’s health is that as health literacy improves so does the patient’s ability to take responsibility for their health through self-care. The population selected for this intervention reads at a fifth-grade reading level or lower (Literacy Statistics, 2010). This included males and females over the age of 18, English speaking, and those diagnosed with acute lymphoblastic leukemia and acute myeloid leukemia in an inpatient setting.

Methods

For implementation on the patient education checklist, nurses using the health literacy assessment and patient education checklist were provided training. Health literacy training included a discussion on how to transition from using medical jargon to patients and using simple and easy-to-understand text and words when presenting discharge information. The education sessions took place in the nurse’s breakroom. Each session lasted about an hour and addressed any nursing concerns. Additionally, teaching was given on how to use the patient education checklist and health literacy assessment tool, about how it will be used, documented, and stored.

The health literacy assessment was completed upon admission into the hospital and reviewed by the health care workers. The patient education checklist was administered on each
patient marking off content as the discharge education was provided. These documents were kept at the nurse's station along with the patient charts to assess the patient's readiness to discharge. At the time of discharge, the patient should have all discharge education checked off and documented in the patient’s education in their electronic medical record.

At discharge, patients were given the assessment tool again to assess their health literacy before being discharged. Patients concerns, and misunderstandings were identified and were addressed prior to discharge.

**Outcome Measures**

The outcome measures used for the patient population, were their initial health literacy assessment that was provided at the time of admission and their pre-discharge health literacy assessment that was provided before discharge. Additionally, nurses' satisfaction with the health literacy assessment tool was obtained with 90% satisfaction.

**Data Collection**

Data collection was obtained through the collection of patients' health literacy assessments and chart reviews over three months. During chart review, those that were not included in the study were those with that were non-English speaking, those younger than 18, those with a mental disability, those that were sent to the ICU, and those that did not complete the intervention.

**Analysis**
For analysis, SPSS software was used for statistical analysis of the data. Using Paired Samples Statistics and Correlations for post-test scores and pre-test scores and the study demographics that include gender and age. The Paired Sample T-Test was used to determine the statistical significance of the pre and post-test scores.

**Ethical Considerations**

Before implementation of the initiative, The University of Tennessee institutional review board (IRB) approval was sought and approved for use of human subjects without the use of consent. Consent was not required because consent was already obtained in clinical practice and the initiative was already part of usual nursing care.

To address human subjects' concerns, the project was ensured through the Institutional Review Board for determination. Regulations for human subjects ensured the rights, safety, and welfare of human research subjects to follow federal state laws/regulations.

**Results**

There was an average score for pretests of 5.92 out of 10 resulting in 50% of participants answering half the questions incorrectly. The post-test score average was 8 out of 10 questions resulting in 2.1 points higher than pretest scores. Pretest scores and posttest scores were positively and strongly correlated ($r=.901, p<.001$).

**Conducted a Paired Sample T-Test**

The Paired Samples t-Test compares the means of two measurements taken from the same individual, object, or related units.

**T-Test**

*Paired Samples Statistics*
The average score for pretests was 5.92 and the average score for posttests was 8.

**Paired Samples Correlations**

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<tr>
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<td>.000</td>
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Pretest scores and posttest scores were positively and strongly correlated ($r = .901, p < .001$).

**Paired Samples Test**

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<tr>
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<th>Mean Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>Sig. (2-tailed)</th>
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<tbody>
<tr>
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<td>1.756 2.411</td>
<td>14.01 11 .000</td>
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</table>

There was a significant average difference between pretest scores and posttest scores ($t_{11} = 14.015, p < .001$)

On average, posttest scores were 2.1 points higher than pretest scores (95% CI [1.76, 2.41]).

**Study Demographics**

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<td>54%</td>
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</tr>
<tr>
<td>Male</td>
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</tr>
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<tr>
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</tr>
<tr>
<td>Post-test Score</td>
<td>12</td>
<td>8.00</td>
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</table>

**Limitations**
The use of a health literacy tool and discharge checklist increased the patients understanding of health information for discharge. Before implementation, there was no standardized assessment tool used for health literacy on patients coming into the hospital. There was higher mortality and a greater chance of risk for injury, rehospitalization, and confusion.

Because there was no prior documentation of health understanding before the use of the intervention, we had no comparison of this standard process. We found that the use of the health literacy tool and discharge checklist was easy to use, understand, minimal cost, and served as an education tool for documentation. Provider and staff documented a structured process for health literacy and discharge allowed for awareness of the patient’s level of education and endorsed better communication among the patients and health care team.

Limitations of this study include being limited to a small number of patients, a limited number of providers, evolving hospital regulations during a pandemic, and high nursing-patient ratios. The intervention took place during the COVID-19 pandemic affecting the patient population as hospital regulations changed. These regulations changed how people get in and around the hospital and who was allowed to come into the hospital. Since these patients are immunocompromised, discharge education prioritized the avoidance of the emergency department and identifying medical emergencies, so they are able to know what to do or who to call. Making sure these patients were aware of their risks was a primary goal for this intervention. Another limitation of the intervention was that on most days' nurses had a 6:1 ratio. This limited the time they were able to spend with each patient to provide education. Limiting patient time may mean that they may not be able to go in-depth into the patient’s education due to limited time or interruptions.
Conclusion

Research has proven that providing patients education before discharge improves their health outcomes but despite research, it has neglected to account for health literacy barriers that the patient may have. The implementation of the health literacy tool and discharge checklist provides a standard process for communication between healthcare providers and patients. The identification of health literacy barriers early in a patient’s hospitalization, allows for improvement in the patient’s education to reduce mortality and optimal communication between their health care team.
References


