5-2022

Reducing Medication Non-adherence with Improved Health Literacy Interventions: An Evidence-Based Practice Quality Improvement Project

Unity Wiles
Sacred Heart University, wilesu@mail.sacredheart.edu

Follow this and additional works at: https://digitalcommons.sacredheart.edu/dnp_projects

Part of the Geriatric Nursing Commons, and the Public Health and Community Nursing Commons

Reducing Medication Non-adherence with Improved Health Literacy Interventions: An

Evidence-Based Practice Quality Improvement Project

Unity Wiles RN-BC, MBA, MSN

A DNP Project Proposal Draft submitted in partial fulfillment of the requirements for the degree

of Doctor of Nursing Practice

Constance H. Glenn, DNP, MSN, APRN, FNP-BC, CNE: Project Faculty Advisor

Michele Derbyshire RN, MSN: Project Mentor

Sacred Heart University Davis and Henley College of Nursing

May 2022

This is to certify that the DNP Project Final Report by

Unity Wiles

Has been approved by the DNP Project Team on

April 14, 2022

For the Doctor of Nursing Practice degree

DNP Project Faculty Advisor: Dr. Constance Glenn, DNP, APRN, FNP-BC, CNE

Practice Mentor: Michele Derbyshire MSN, RN

Acknowledgments

Table of Contents

List of Tables

List of Appendices

Abstract

Introduction

Health literacy is the ability to obtain, process, and understand basic health information and services needed to make appropriate healthcare decisions and follow instructions for treatment. Patients with low health literacy have been predicted to have poor health outcomes. The inclusion of the single-item literacy tool into the admission process of this project involved the patient-centered-care characteristics of improved patient experience, lower health cost, improved clinical experience, and better outcomes.

Purpose

 The National Action Plan to improve Health Literacy seeks to engage organizations, professionals, policymakers, communities, individuals, and families in a linked multi-sector effort to improve health literacy. Low health literacy can result in patients' misunderstanding of instructions regarding their medications, disease trajectory, and health decision-making process. Low health literacy can also cause patients to have feelings of shame, thereby hindering them from seeking assistance as needed.

This paper focused on adults 65 years and older who were prescribed cardiovascular medications. Incorporating the single-item literacy tool into the admission process in a medical-surgical unit in a small community hospital was central to the project. The use of the tool determined the health literacy comprehension of the patient. It also alerted the staff to the need for appropriate education regarding the medication indication, side effects, and adverse drug reactions. A few limitations were noted during the process that was unexpected and unavoidable.

The rapid staff turnover due to the Covid -19 pandemic, the size of the facility, and the staff's lack of understanding of the literacy tool were issues of concern.

Method

Major databases used in this project included the Cochrane Database of Systematic Reviews, CINAHL, PubMed, and MedLine. Keywords: older adults, medication adherence, health literacy, and health decision-making.

Evaluation

The project outcome was calculated by the data obtained from the pre and post-survey beginning at the patient's admission. The problem identified in the project had outcomes measured by the tool implemented.

Discussion/ Conclusion

The single-item literacy tool implied the need for our medical-surgical unit to address the readmission of older adults due to medication non-adherence resulting from inadequate health literacy. Implementation of the single-item literacy tool showed some improvement in patients' medication adherence and a decreased rate of hospital readmission during the study period. Staff involvement in patients' education could avoid unnecessary hospitalizations, decrease healthcare costs, and improve quality of life.

Introduction

Health literacy encompasses the ability to obtain, process, and understand basic health information necessary to make appropriate decisions regarding care and treatment. It is predicted that patients with low health literacy have poor health outcomes as patient/provider communication is impaired. Various factors contribute to low health literacy and many tools are available to identify and improve such factors. This project aimed to study health literacy regarding cardiovascular medication non-adherence in an older adult population while utilizing a single-item literacy tool in the admission process in a medical-surgical unit at a small community hospital in Connecticut. Incorporation of the tool aimed to improve patient experience, lower health costs, clinical experience, and patient outcomes.

The paper discusses the health literacy problem in adults 65 years and older. It also looks at the effect of including a single-item literacy tool in the admission process for these patients in a medical-surgical unit. The PDSA cycle was used to test change in this unit by implementing the single-item literacy tool. The change anticipated improvement of the patients' medication adherence and health literacy level. The single-item literacy tool was a success during the three months of implementation in the medical-surgical unit at the hospital.

Phase 1: Problem Identification and Evidence Review

The National Action Plan to Improve Health Literacy seeks to engage organizations, professionals, policymakers, communities, individuals, and families in a linked multi-sector effort to improve health literacy (U.S. Department of Health and Human Services, 2020). Low health literacy levels are predictors of disparaging health outcomes (Chesser et al., 2016). Due to the stigma of low health literacy, some patients may experience feelings of shame, thereby not admitting their difficulties or seeking assistance when needed (Seo et al., 2016). The objective of this project is to have a literacy screening and medication adherence assessment completed within 24 to 48 hours after admission in order to alert the RN of the need for additional education regarding the patient medications with the potential to reduce readmissions and improve patient safety.

It is challenging for healthcare providers in the acute care setting to detect some of the health literacy problems in their patients as their initial goal is to stabilize the patients' immediate health issues. Healthcare decisions can be limited if the patient has literacy problems and is unable to make health decisions due to a lack of understanding and inability to make their needs known.

Description of Local Problem

The medical-surgical unit in this facility encounters older adults who were admitted repeatedly as a result of non-compliance with medication regimens due to low health literacy. During the initial interview, the RN noted the patients' lack of knowledge of their medications' indications, side effects, and adverse effects. The patients sometimes stated that they could not understand the medical language. During admission, usual care is for an admission packet to be

given to each patient on arrival at the unit. The nurses documented that it was handed to the patient but not reviewed during their admission process. However, the nurses on the unit had not been returning to review the packet with the patients and determine their understanding of the information. The result was that patient care was not optimized.

Focused Search Questions

The elements of the clinical question of interest for this project were addressed in the following PICOT format: How does providing patients age 65 years and older (P), with health / diagnostic information on admission (I) and assessing/ confirming understanding(C), improve medication compliance, health literacy and engagement in the health decision-making process (O) during hospitalization and over a three month period (T)?

External Evidence

Seven studies were reviewed for this project. The databases that were searched included Cochran Database of Systematic Reviews, CINAHL, PubMed, and Medline. The searches were limited to those published in English and after 2015. The articles were only in the English language. The keywords included older adults, medication adherence, health literacy, and health decision-making. They met the search criteria and were included in the evidence review. The strength of the evidence ranged from 3 level I studies, 1 level II study, 1 level IV study, and 2 level VI studies. The quality of the studies was medium. Studies in articles such as Health literacy and the older adult (Scott, G.A.,2019), Health literacy and health outcomes of adults in the United States: Implications for providers (McDonald & Shenkman, 2018), and Association between health literacy and medication self-management among community health center patients with uncontrolled hypertension (Persel et al., 2020), suggested that older adults with low health literacy were at risk for medication non-compliance and compromise health outcomes.

Gerontology and Geriatric Medicine and the Institute for Healthcare Advancement highlighted

the importance of addressing health literacy in older adults. Other articles in this evidence review

looked at the efficacy of screening patients for health literacy and being involved with health

decision-making.

Internal Evidence

No internal evidence had been gathered at this facility before the initiation of the project

to address this problem in the medical-surgical unit. The seven goals to improve health literacy

in my organization and the assessment techniques to develop strategies to help my patients

understand their disease processes were discussed with the Chief Medical Officer of my facility.

The seven goals included the following:

- **Goal 1:** Develop and disseminate health and safety information that is accurate,
  accessible, and actionable.

- **Goal 2:** Promote changes in the healthcare delivery system that improve information,
  communication, informed decision-making, and access to health services.

- **Goal 3:** Incorporate accurate and standards-based health and developmentally
  appropriate health and science information and curricula into child-care and education
  through the university level.

- **Goal 4:** Support and expand local efforts to provide adult education, English-language
  instruction, and culturally and linguistically appropriate health information services in the
  community.

- **Goal 5:** Build partnerships, develop guidance, and change policies.

- **Goal 6:** Increase basic research and the development, implementation, and evaluation of
  practices and interventions to improve health literacy.

- **Goal 7:** Increase the dissemination and use of evidence-based health literacy practices and interventions (CDC, 2019).

 On admission, each patient (100%) was presented with an information packet, however, the nurses did not document how they incorporated these interventions into their workload.

Evidence Appraisal, Summary, and Recommendations

The level of evidence for the 7 studies was a mix of levels 1,2,4,6 and 7. The use of health literacy is an important factor in the process of medication adherence and health decision-making. Low health literacy is often associated with poor outcomes. Appendix A shows the search method and the results of the articles reviewed. Appendix B shows the evidence summary table and the quality of the evidence reviewed. The quality of the evidence on health literacy and medication compliance in older adults was good. Several studies indicate that low health literacy in older adults is a barrier to good health outcomes and it limits the patients' involvement in their health decision-making process. Patients with a higher level of knowledge about the therapeutic purpose of dosage and regimen are seven times more likely to adhere to their medication. Appendix C is the evidence synthesis table. The level of evidence was high in three of the systematic review, or meta-analyses. The other studies were in the categories of the randomized controlled trial (RCT), Case-control study, QI or EBP project, and Expert opinion. Appendix D is the outcome synthesis table for factors that affected older adults (i.e. health literacy, decision-making preferences, medication adherence, and non-adherence).

Based on the evidence, many factors may contribute to the patients' non-adherence to their medication regimens such as language barriers and lack of understanding of the medical diagnosis. All of the evidence recommended that more investigation be done on the various

interventions that could be tailored to patient-centered care, thereby enhancing their health

literacy.

Phase 2: Project Planning

Project Goals

1. To implement a single-item literacy tool into the admission process for adults 65+ to determine the appropriate method of education for them.

2. To educate staff on single-item literacy tools for the older adults during the admission process and evaluate staff compliance.

Framework

Nurses identify important and clinically relevant practice questions that can be addressed

through the EBP process (Melnyk & Fineout-Overholt, 2019). This facility did not have a

specific Evidence-Based Practice Model to use for projects. Even though The Iowa Model of

Evidence-Based Practice focus on frontline practice issues that are meaningful to staff and

patients (Duff et al., 2020), the Plan-Do-Study-Act (PDSA) Cycle was executed in the project

instead because the PDSA cycle provided a rapid method for testing change by planning, trying

out a new process, observing the results of the process, and acting on what was learned during

the project.
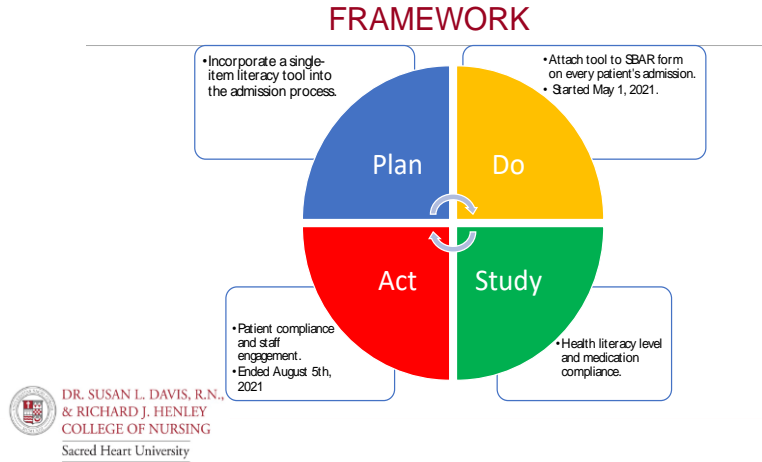
Context

This facility is a small community hospital in Connecticut. The hospital is known for its distinction as the flagship facility for the Planetree Philosophy. The Planetree model of care embraces the human-center approach, kindness, caring, and respect for both patients and caregivers. It has a capacity of 160 beds and provides medical, surgical, behavioral health services, health education, disease prevention, as well as outreach programs to the Naugatuck Valley region. This facility has several satellite clinics and offices in the surrounding towns to attend to the emergent care of all patients, but admitted patients range in age from 18 years and older. It also provides primary care to all residents in the region. The medical-surgical unit was the setting for this intervention. The participants included patients admitted for services who met the criteria as described in the problem section.

Intervention

The intervention for this project was to include a single-item literacy screening tool (SILS) in the admission process for adults 65 years and older. The primary nurse included the tool in the admission process of the patient. The SILS asked, "How often do you need someone

to explain the reason you are taking a specific medication and the side effects of the medication? The possible answers were 1-Never, 2-Rarely, 3-Sometimes, 4-Often, 5- Always. Scores greater than 2 indicated that the patient had a problem understanding his/ her medication purpose and side effects. Patients who scored 2 or more, were provided education on their medications' indications, side effects, and adverse drug reactions. The goal was to determine the patient's literacy level according to the tool and improve medication adherence. This part of the project was the initial phase.

Evaluation

The data collection began in May 2021. The tool was used on all adults, 65 years and older. An audit of the tool began the week after the intervention was implemented. The audit was completed by collecting the SIL screening tools, scoring, and analyzing them. The patients were re-evaluated by discussing their medications before discharge from the facility or during the post-discharge follow-up phone call. Adherence to their medication regimen after discharge was tracked by the transitional care team during the discharge phone call and the patient survey.

Key stakeholders

The project manager, nurses, and patients on the medical-surgical floor were the key stakeholders in this project. The other stakeholders included senior leadership of the hospital, nurse managers, and other members of the interdisciplinary team. To obtain cooperation from the nursing staff, daily reminders were made during shift huddles and the input from the staff was encouraged for improvement.

Sustainability

For this project, it was noted that many of the older patients had issues with their medication compliance. To assist the patients to change their medication administration

behavior, the nurses had to be interested in implementing change in the intervention they provided to the patients. First, changes were implemented in the nurses' documentation during the patients' admission. This change involved a single health literacy screening question which usually had an impact on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores of the medical-surgical unit. The nursing staff was able to see how the health literacy tool promoted positive health outcomes in their patients. A few implementation strategies were needed to continue the earlier phases of the implementation (Cullen et al., 2018). Patient and staff education as well as proper documentation were a part of the implementation phase.

In this project, creating awareness and interest in the patients' outcomes and safety was an important phase to the sustainability of the process. Nurses were in a pivotal role and were perfectly positioned to screen and document the patients' health literacy. They had to be motivated to incorporate the health literacy tool into their daily routine. With much enthusiasm from the staff and continuous communication from senior leadership, incorporating the health literacy screening tool in the admission process was sustained. Education and documentation were two strategies used to fulfill the goal of the process as shown in the sustainability goal. Resistance to change or psychological biases and time concerns made it difficult for clinicians to let go of outdated practices. (Cullen et al., 2018). Improvements in health practice that address low health literacy are needed to reduce disparities in health status (Healthy People, 2030).

Secondly, to sustain this project, an action plan was initiated to include continuing education for staff, evaluation of the process by the multidisciplinary team, and support from the stakeholders involved. Updates on the health literacy screening tool as well as changes to the process were done daily in the shift huddle. This allowed the staff to have input on the process

they implemented daily. Improvement on the process was posted in the staff common area for all

to see, and the single-item literacy tool was included in the SBAR form for ease of use.

Timeline

Nov 2020-Mar 2021

- Evidence table plan (Evidence Synthesis, Outcome Synthesis)

- Meeting with preceptor and educators

- Standard Committee Meeting

- Determine implementation method

- Meeting with floor staff

- Began trial implementation of the Single Item Tool on the unit for one week

May-Aug 2021

- Began implementation of the Single Item Literacy Tool on the unit

- Three months of data collection

- Pre & Post data assessment

Aug- Oct 2021

- Sustainability plan determined

Jan- Mar 2022

- Present final DNP Project

Resources

1. Stakeholders:

    a. Patients, staff nurses, nurse managers, nurse educators, and ancillary staff on the

    medical-surgical unit.

2. Capital:

    a. The amount of money needed to purchase the stationery for the project.

3. Material :

    a. Printed material for education on the project.

Table 1.

Differentiating Quality Improvement and Research Activities Tool

Question	Yes	No
1. Is the project designed to bring about an immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on the delivery of care?	X	
5. Are findings specific to this hospital?	X	
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X
14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?		X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

Phase 3: Implementation

The single-item literacy tool was designed for the medical-surgical unit at the facility. It was introduced in May 2021 and incorporated into the admission process. The data from this process were collected for three months. The patient population included adults 65 years and older, who were taking cardiovascular medications.

The Plan-Do-Study-Act (PDSA) cycle was used to promote the process implementation. The plan was to have the team members incorporate the single-item literacy tool at the time of a patient's admission to determine the patient's understanding of the side effects and adverse drug reactions of the medications he or she was taking at home. The medical-surgical RNs and floor staff focused on patients, 65 years and older, who had a cardiovascular disease like hypertension. Information regarding the perspectives and thought processes of the staff involved in the plan was initially received at the weekly shift huddle.

The Plan-Do-Study-Act cycle was applied in the various phases as explained below. Plan:

In the planning phase of the project, the DNP student met with her preceptor, and nurse educator to discuss the logistics of the different stages of the project. After the project's goal discussion, it was determined that the hospital did not have a process or protocol in place to help patients who met the inclusive criteria of this project adhere to their medication regimen. Next, the project topic was presented to the Standard Committee at the organization, and the approval to proceed was granted (See Appendix H). Lastly, the project's team met with the nurse manager on the medical-surgical unit and the nursing team to obtain their perspectives, input, and questions about the project.

The plan was to have the team members incorporate the single-item literacy tool into the admission process at the time of patients' admission to determine the level of education that was

appropriate to help the patients understand the side effects and adverse effects of the medications

they were consuming. The RNs and floor staff were to ask the patients the following question:

"How often do you need someone to explain the reason you are taking your medication and the

side effect of the medication?" The possible answers were: 1-Never, 2-Rarely, 3-Sometimes, 4-

Often, and 5-Always. If the patient scored 2 or more, patient education on the medication

indication, side effects, and adverse drug reactions would be conducted. See Appendix E for the

single-item literacy tool that was developed by the project manager and used for the data

collection.

Do:

During the first week of May 2021, the project commenced with the nurses adding the

single-item literacy tool to their patients' admission process. The process started with a pre-

survey of the patients' understanding of their medications, side effects, and adverse effects. The

information collected was placed in an envelope and delivered to the nurse manager's office for

safekeeping daily.

Study:

The goal of the project was to implement a single-item literacy tool into the admission

process as an attachment to the SBAR form. The results were analyzed and showed

improvement in the medication adherence in the population that was studied. A total of 50

patients were included in the project. At the end of the project, 2 of the patients had passed away

and the DNP student was able to do a post-survey on the remaining 48 patients. The pre-survey

data revealed 32 patients with a single-item literacy score of 1, 10 patients with a score of 2, 6

patients with a score of 3, 1 patient with a score of 4, and 1 patient with a score of 5. The post-

survey results determined that 41 patients scored 1, 4 patients scored 2, 1 patient scored 3, 1

patient scored 4, and 1 patient scored 5. The information collected on the patients will be secured

electronically by the team and discarded six months after the completion of the project.

The admitting staff did encounter some problems when trying to extract the information

from the patients. Some of the patients either did not know the medications they were taking, did

not have their medication lists with them on admission, or they were too ill to answer

appropriately.

Due to the situation created by the Covid-19 pandemic in most healthcare facilities and

the high turnover of nursing staff in the medical-surgical unit, the staff had to be re-oriented to

the new process by the end of the first month of the project implementation. The team members

were diligent in carrying out the new process and there seemed to be a change in the patients'

outcomes. After the patients were discharged home, a follow-up phone call was made to each of

the patients involved in the process and the response to their experience was positive concerning

their medication adherence. See Appendix E.

Act:

After the project concluded and the data was tallied, it was noted that the addition of the

single-item literacy tool was beneficial. Incorporating the single-item literacy tool with the

current RN SBAR tool during the admission process made an impact on the patients' adherence

to their medication regimen. The nursing staff continued to use the single-item literacy tool with

all their patients.

Phase 4: Evaluation

Health literacy comprehension is linked to literacy and entails people's knowledge, motivation, and competencies to access, understand, appraise, and apply health information to make the judgments and make the decision in everyday life concerning healthcare, disease prevention, and health promotion to maintain or improve quality of life during the life course (Bonaccorsi et al., 2017). After three months of data collection for the patients' admitted to the medical-surgical unit, an analysis was made regarding the patients' scores on the single-item literacy tool. Even though staff education was provided before the project start date, the staff was slow to catch on. They were forgetting to attach the questionnaire to the SBAR forms during the first week. Additional education was provided during the first month of the project to ensure compliance.

The staff showed some deficit in applying the single-item literacy tool to their patients' admission until a provision was made with extra education and re-orientation. The return on investment for the use of this single-item literacy tool was noted in a decrease in the rate of readmission of the patients in this project and the positive response received from the patients during the discharge follow-up phone calls. Ninety-six percent of the patients were contacted. This is important for the implication in the HCAHP score for the medical-surgical unit.

During the three months (May 2021 to July 2021) duration of the data collection for this project, 498 patients were admitted, and 470 patients were discharged home. Of the 498 patients admitted, 272 were 65 years and older. 125 patients had cardiovascular-related diagnoses while the remaining 147 patients were significant for other diagnoses such as joint replacement, back pain, bowel surgeries, COPD, and alcohol withdrawal. Fifty patients who met the criteria of 65 years or older with cardiovascular diagnoses were given the pre-survey which included the question presented in the single-item literacy tool that was specific to the project. The results

were tallied, and the scores were recorded to reflect the primary findings. At the end of the three

months, forty-eight patients were contacted for follow-up after being discharged. Two of these

patients were deceased before the end of the project. The total admissions and discharges are

indicated in Appendix G.

For the follow-up assessment, the DNP student spoke with each patient or their caregiver

personally. The majority of the patients' (n=31) scores remained at 1. A few of the patients

(n=8) score changed from 2 to 1. A couple of the patients (n=2) score improved from 3 to 2.

Some patients (n=3) made a mild change from 3 to 1. One patient (n=1) remained at a score of 5

due to severe dementia in conjunction with cardiovascular disease. One patient (n=1) score

stayed at 4 and another patient (n=1) also remained at 3.

Confounding Factors

In this study, a few confounding factors that affected the patients' understanding of their

medications' indication, side effects, and adverse reaction were as follow:

   a. Poor vision acuity.

   b. Lack of medical knowledge.

   c. Staff unawareness of patients' educational background.

   d. Patients' shame and inability to alert staff of their knowledge deficit.

   e. Low socioeconomic status

   f. Cognitive decline.

Limiting Factors

The limitations observed during this project were as follow:

   a. The staff's inability to determine the patients' normal cognitive status and

       literacy/educational level.

b. Rapid staff turnover due to the Covid-19 pandemic and the use of travel/ temporary nursing staff.

c. Wearing masks that could muffle the sound.

d. Patients' inability to see or read the staff's lips due to the use of the masks.

e. The size of the hospital limited the number of patients to be seen.

f. Staff nurses were under pressure dealing with a poor nurse to patient ratio during the Covid pandemic.

g. Frequent changes in the PPE requirements cause staff to not have time to address health literacy issues with their patients.

h. The addition of new nurses to the team who struggled to adjust to the ever-changing responsibilities of being an RN led to a lack of engagement for the staff.

Phase 5: Dissemination

Dissemination of the health literacy screening tool in this project was effective as it was shared with both the internal and external stakeholders. First, an orientation session was designed for the internal stakeholders which included the nursing staff, nurse managers, unit clerks, medical team, surgical team, pharmacy, respiratory team, staff educators, and the senior leadership of the hospital. Once the internal staff received their education on the process, then, the patients, their families, and the community were included. Including stakeholders in the change process was critical to the success of the process. Engaging the stakeholders positively influence their perception of the process.

The external stakeholders, which included the patients, their families, and the community at large are affected by their health literacy. Information regarding

medications and patients' conditions were written at an educational level that was

appropriate for the patients and their families to understand. A poster presentation will be

made at the Susan L. Davis & Richard J. Henley College of Nursing on April 22, 2022.

The results of the project will be presented to the Hospital's Standards Committee and the

project poster will be displayed in the facility's lobby during nurses' week in May 2022.

A manuscript will also be sent to the Geriatric Nursing Journal for review and

publication.

Conclusion

Health literacy is an important factor in the process of medication adherence and

health decision-making. Low health literacy is often associated with poor outcomes.

Several factors contribute to patients' non-adherence to their medication regimen. Some

patients had difficulty admitting to others their knowledge deficit due to feelings of

shame and the stigma of low health literacy. Other patients seemed preoccupied with the

physical stress of their illnesses preventing the staff from assessing their literacy level

upon admission.

The study was limited to a medical-surgical unit, using a small patient sample

size. The project was done during the surge of the Covid-19 pandemic, which minimally

impacted the nurses' engagement at the beginning of the project.

In the project performed on the medical-surgical unit at this small community

hospital, the inclusion of the single-item literacy tool in the admission process on the unit

was a challenge in the beginning. However, with the help of the medical-surgical nurses,

nurse manager, and the interdisciplinary team on the unit, this process seemed to show

improvement in the patients' understanding and compliance with their medication

regimen. Staff engagement in patient education was important in the positive patient

outcome that was noted in the feedback received from the patients during the post-survey

discharge phone call. The readmissions rate of the patients captured in the project was not

analyzed at this time. This is an area to be included in further studies as we evaluate the

total quality improvement of patient care in the medical-surgical unit. This project

seemed to have had some success in the short term. However, research is still warranted

to further define other barriers that older adults encounter due to their healthcare literacy.

References

Bazargan, M., Smith, J., Yazdanshenas, H., Movassaghi, M., Martins, D., & Orum, G. (2017).

    Non-adherence to medication regimens among older African-American adults.

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5526276/#:~:text=Poor%20adherence%

    20to%20prescribed%20medications,and%20mortality%20in%20this%20population.

Bonaccorsi, G., Grazzini, M., Pieri, L., Santomauro, F., Ciancio, M., & Lorini, C. (2017).

    Assessment of Health Literacy and validation of single-item literacy screener (SILS) in a

    sample of Italian people.

    https://healthliteracy.bu.edu/documents/204/ANN_17_03_05.pd.

Cawthon, C., Mion, L. C., Willens, D. E., Roumie, C. L., & Kripalani, S. (2014). *Implementing*

    routine health literacy assessment in hospital and primary care patients.

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4072202/

Centers for Disease Control. and Preventions. (2019). *National action plan to improve health*

    literacy. https://www.cdc.gov/healthliteracy/planact/national.html

Centers for Disease Control and Prevention. (2020). *What is health literacy?*

    https://www.cdc.gov/healthliteracy/learn/index.html

Chesser, A. K., Woods, N. K., Smothers, K., & Rogers, N. (2016). *Health literacy and older*

    adults A systematic review. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5119904/

Cullen, L., Hanrahan, K., Farrington, M., DeBerg, J., Tucker, S., & Kleiber, C. (2018). *Evidence-*

    based practice in action: Comprehensive strategies, tools, and tips from the University of

    Iowa Hospitals and Clinics. Indianapolis, IN: Sigma Theta Tau International.

Duff, J., Cullen, L., Hanrahan, K., & Steelman, V. (2020). *Determinants of an evidence-based*

    practice environment: An interpretive description.

https://implementationsciencecomms.biomedcentral.com/articles/10.1186/s43058-020-00070-0

Lee, Y.-M., Yu, H. Y., You, M.-A., & Son, Y.-J. (2017). *Impact of health literacy on medication adherence in older people with chronic diseases*. https://www.sciencedirect.com/science/article/abs/pii/S1322769615000773

Melnyk, B. M., & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th ed.). Woltes Kluwer.

McDonald, M., & Shenkman, L. J. (2018). *Health literacy and health outcomes of adults in the United States: Implications for providers*. https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1689&context=ijahsp

Muscat, D. M., Morony, S., Trevena, L., Hayen, A., Shepherd, H. L., Smith, S. K., Dhillon, H. M., Luxford, K., Nutbeam, D., & McCaffery, K. J. (2019). *Skills for shared decision-making: Evaluation of a health literacy program for consumers with lower literacy levels*. https://pubmed.ncbi.nlm.nih.gov/31687658/

Office of Disease Prevention and Health Promotion. (2020). *Health literacy*. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/health-literacy

Patton, D. E., Hughes, C. M., Cadogan, C. A., & Ryan, C. A. (2017). *Theory-based interventions to improve medication adherence in older adults prescribed polypharmacy: A systematic review*. https://pubmed.ncbi.nlm.nih.gov/28025725/

Persel, S. D., Karmali, K. N., Lee, J. Y., Lazar, D., Brown, T., Friesema, E. M., & Wolf, M. S. (2020). *Associations between health literacy and medication self-management among*

community health center patients with uncontrolled hypertension.

https://pubmed.ncbi.nlm.nih.gov/32021120/

Scott, G. A. (2019). *Health literacy and the older adult*.

https://www.clinicaladvisor.com/home/features/clinical-features/health-literacy-and-the-

older-adult/

Seo, J., Goodman, M. S., Politi, M., Blanchard, M., & Kaphingst, K. A. (2016). *Effect of health*

literacy on decision-making preferences among medically underserved patients.

https://journals.sagepub.com/doi/abs/10.1177/0272989x16632197

U.S. Department of Health and Human Services. (2020). *National action plan to improve health*

literacy. https://health.gov/our-work/health-literacy/national-action-plan-improve-health-

literacy

Vesely, M. (2017). *Improving adherence through patient health literacy*.

https://www.amerisourcebergen.com/insights/pharmacies/improving-adherence-through-

patient-health-literacy#:~:text=Health%20literacy%20is%20believed%2

Wainwright, B. (2019). *How to increase employee commitment*.

https://www.effectory.com/knowledge/how-to-increase-employee-commitment/

Wilson, B., & Austria, M.-J. (2019). *What is evidence-based practice?*

https://accelerate.uofuhealth.utah.edu/explore/what-is-evidence-based practice

Appendix A.

Evidence Search Plan

PICOT Question:

How does providing patients age 65 years and older (P), with health / diagnostic information on admission (I) and accessing/ confirming understanding (C), improve medication compliance, health literacy, and engagement in health decision-making process (O) during hospitalization and over a three month period (T)?

1. Intervention question was the type of PICOT question used in this project.

2. The level of evidence that best answer the questions are Randomized Control Trials (RCT) and Systematic reviews.

3. The databases used for the search are CINAHL, Cochrane, Medline with Full Text, and PubMed.

4. Keywords from my PICO question to search the databases included: Adults, older adults, medication adherence, health literacy, medication compliance, health decision-making.

5. The search was streamlined using MeSH terms like older adults, medication adherence, health literacy, and medication compliance, and boolean connector "AND".

6. The criteria for article selection included: older adults, 65 years +, medication compliance, medication adherence, English language, from 2015 to 2020, human, full-text article.

7. Search in table format.

Table 1.
Cochrane Database of Systematic Reviews Search Terms and Search Results

Search Terms	Number of hits	Number of articles reviewed	Duplicates	Number of articles selected
Older adults	154	6	2	0
Older adult and medication adherence	2	1	0	0

Table 2.
Medline with Full Text.

Search Terms	Number of hits	Number of articles reviewed	Duplicates	Number of articles selected
Older adults	7539			
Older adults, medication adherence, and health literacy	2	2	1	1
Older adults, health literacy and medication compliance	2	2	2	0
Older adult and health literacy	67	10	0	6

Table 3.
PubMed

Search Terms	Number of hits	Number of articles reviewed	Duplicates	Number of articles selected
Older adults	639			
Older adults, medication adherence, and health literacy	10	6	2	3
Older adults and health literacy	199	10	2	3

Table 4.
CINAHL

Search Terms	Number of hits	Number of articles reviewed	Duplicates	Number of articles selected
Older adults and medication adherence	30	9	0	6
Older adults, medication adherence, and health literacy	3	3	3	0
Older adults and medication noncompliance	0	0	0	0
Older adults and health literacy	57	10	2	5
Older adults, health literacy, and health decision-making	1	1	0	1

Appendix B.
Evidence Summary Table

PICOT Question:
How does providing patients age 65 years and older (P), with health /diagnostic information on admission (I) and assessing/ confirming understanding (C), improve medication compliance, health literacy, and engagement in health decision-making process (O) during hospitalization and over a three-month period (T)?

Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth to practice/project, quality of evidence
1	Seo, 2016	-Examine the relationship between health literacy and decision-making preferences in a medically underserved population	RCT, Level II	Primary care clinic	Adequate health literacy: The patient who pronounced 7-8 words correctly Limited health literacy: Patients with 0-6 correct responses	Using REALM-R	Patients with low health literacy may have difficulty understanding medical information and lack the self-efficacy to be actively involved in their care. Due to the stigma of health literacy. Some patients may experience feelings of shame, thereby not admitting their difficulty or seeking assistance when needed.	Strong suggestions indicate that interventions to promote shared decision-making are important for patients with limited health literacy. The quality of evidence is moderate due to limited information given on how patient-provider relationships affect decision-making preferences among patients with varying health literacy levels.

							- Interventions to promote shared decision-making may be particularly important for patients with limited health literacy.	

Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth practice/project, quality of evidence
2	Scott, 2019	The impact of low health literacy	Case study, Level VI	Emergency Dept.	Health Literacy: the ability to obtain, process, and understand basic health information and services needed to make appropriate healthcare decisions and follow instructions for treatment Numeracy: the ability to understand and use numbers—is especially important concerning medication dosages.	The financial burden to the health care system at $92 billion annually in the United States	Older adults with poor health literacy have overall poorer health status and higher mortality than those with adequate health literacy	The use of recommended strategies to improve communication with patients with lower health literacy. The article states how to understand the learning needs of older adults. The quality of the article is moderate. The level of evidence was medium, so the strength is moderate.

3	McDonald, 2018	To explore health literacy in adults in the U.S. and review health outcomes	Editorial, Level VII	The United States	Health illiterate: -Difficult to read prescriptions, medication labels, patient education, medical forms, appt slip, and discharge instructions.	Various tools (screening tools)	-Limited health literacy is a serious problem in the United States -Poor patient outcomes are associated with being health illiterate -The benefits of being health literate include greater patient safety, fewer hospitalizations, a greater ability to care for oneself, and better overall health status	Health literacy is essential to taking control of and managing one's health. High quality of evidence and the level was at VII, making it a moderate study.

Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth to practice/project, quality of evidence
4	Bazargan, 2017	To examine the association between adherence to drug regimens and an array of medication-related factors	Meta-analysis and systematic review, Level I	400 community-dwelling, underserved, older adult, self-identified African Americans, from 16 predominately African American churches located in Los Angeles county.	Adherence to drug regimens	Comprehensive brown bag medication assessment.	Patients with a higher level of knowledge about the therapeutic purpose of the dosage regimen were almost seven times more likely to adhere to their medication.	High quality of study and level of evidence at 1. This gives me the confidence to incorporate this into my practice.

Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth to practice/project, quality of evidence
5	Muscat, 2019	To evaluate the impact of a program to improve health literacy for share decision making in adults	RCT, Level I	308 participants at Technical and Further Education (TAFE) Institutes during 2014.	Shared decision making (SDM) is the embodiment of patients and health professionals working together to make healthcare decisions	There were no general measures to assess the health literacy SDM in this article.	SDM content increased participants' health literacy skills for SDM.	Patients' involvement in their care. The quality of the study was high and the strength of the study was high.

		with lower literacy							

Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth to practice/project, quality of evidence
6	Patton, 2016	To determine the effectiveness of theory-based interventions aimed at improving medication adherence in older adults prescribed polypharmacy and explore the extent to which psychological	Systematic review, Level I	2294	Adherence -the extent to which a person's behavior-taking medication following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider Non-adherence	Varied	Older adults aged 65 years, commonly suffer from multi-morbidity. The treatment of multi-morbid older adults often leads to the prescribing of multiple medications referred to as polypharmacy	Evidence is not robust on theory-based evidence.

		theory informed their develop ment					

| Article number	First author, year	Purpose	Evidence type, level of evidence	Sample, setting	Major Variables Study and their Definitions	How major variables were measured	Findings that help answer question	Worth to practice/project, quality of evidence
7	Persell, 2020	To examine the association between health literacy and several medication self-management constructs among a population of adults with controlled hypertension.	Cross-Sectional Study, Level IV	1460 participants, 12 community health centers in the Access Community Health Network (ACCESS) in Chicago, IL.	Low health literacy	Direct comparison of the medication reported by participants with the active medication list in the HER from the same date.	Low health literacy was associated with worse medication self-management.	Clinicians need to have a high level of awareness to detect and address low health literacy, medication errors, and reconciliation problems. There is strong evidence regarding the association between health literacy and medication self-management. More work needs to be done to allow the clinician to apply this to their practice. The quality of the article is medium, and the level of study is IV giving it a moderate strength.

Appendix C.

Level of Evidence Synthesis Table

Article Number	1	2	3	4	5	6	7
Level I: Systematic review or meta-analysis				X	X	X	
Level II: Randomized controlled trial	X						
Level III: Controlled trial without randomization							
Level IV: Case-control or cohort study							X
Level V: Systematic review of qualitative or descriptive studies							
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project		X					
Level VII: Expert opinion			X				

Article Number	1	2	4	3	5	6	7
Health Literacy	ND	20-30%	NE	NE	80%	NE	13.5%
Decision Making Preferences	ND	NE	NE	NE	75%	NE	NE
Medication Adherence	NE	NE	12-30%	NE	NE	NE	NE
Non-adherence	NE	NE	69-73%	NE	NE	25-75%	NE

Appendix D.   Outcome Synthesis Table

NE, not evaluated; ND, no statistically significant difference

Appendix E.
Single-Item Literacy Tool Score

Single-Item Literacy Tool Score

Pre-survey Score and # of Patients   Post-survey Score and # of Patients
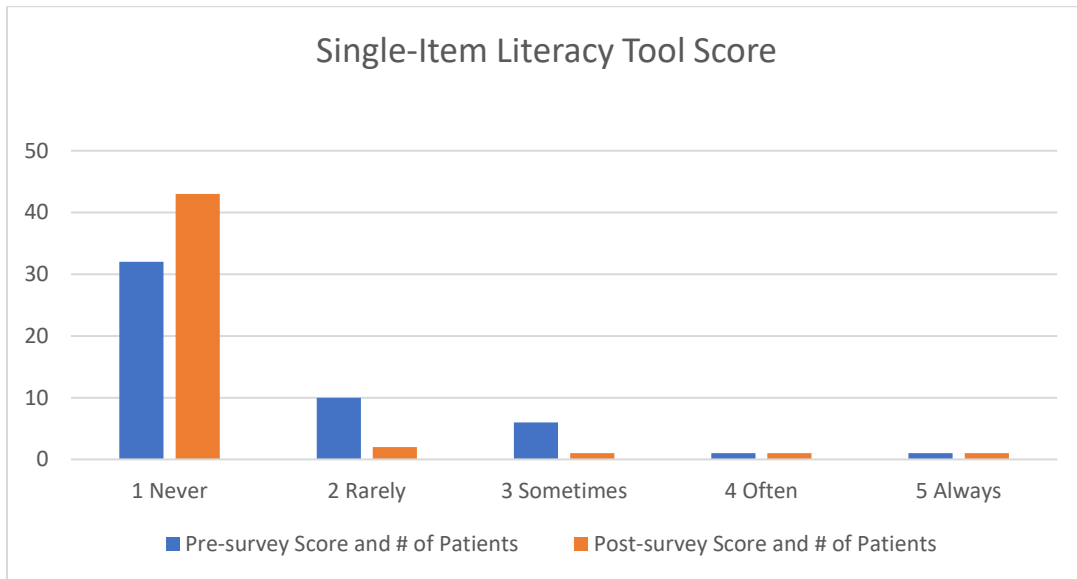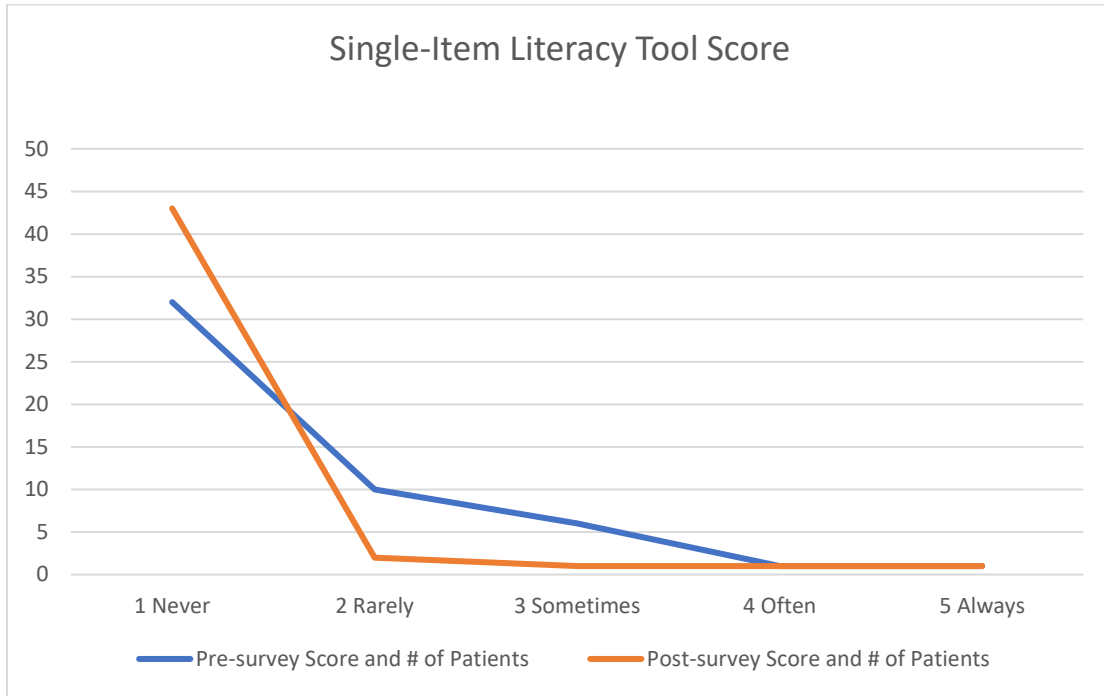
Appendix F.

Single-Item Literacy Tool

This is the question to be added to the SBAR:

How often do you need someone to explain the reason you are taking your medication and the
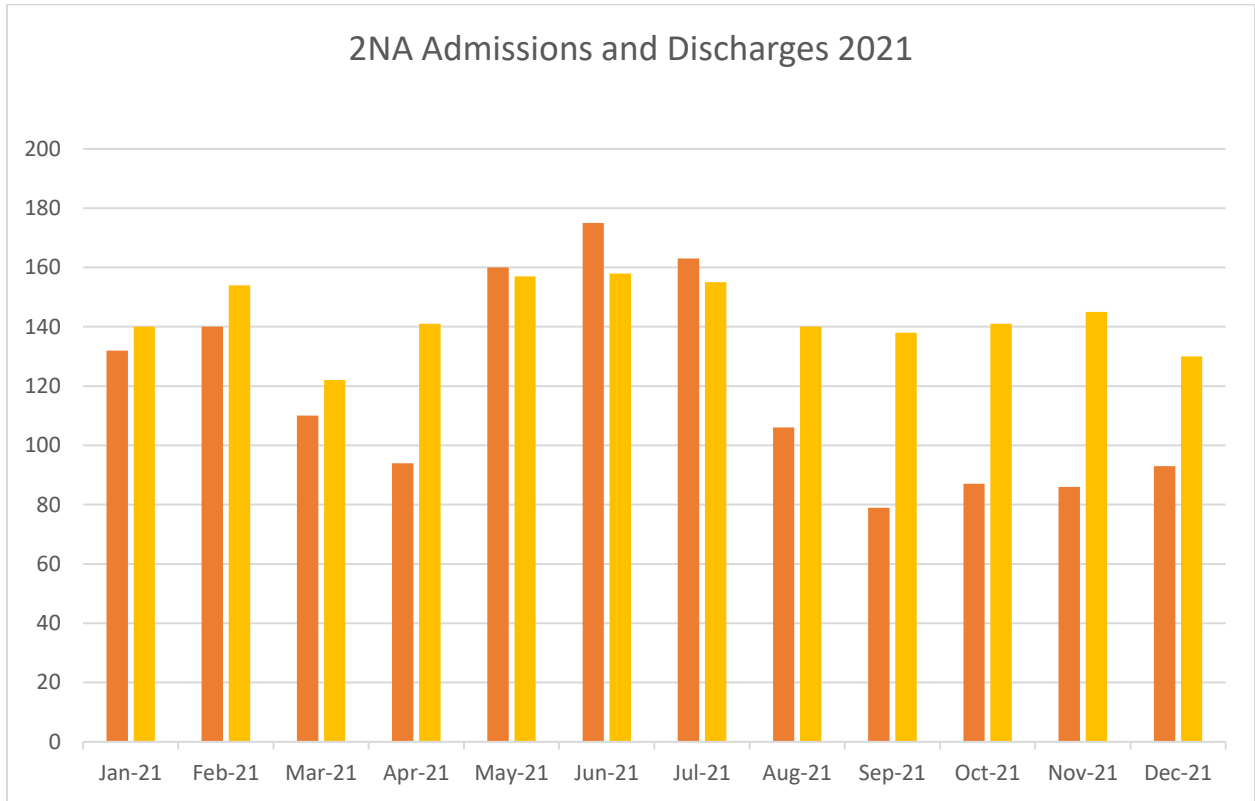
side effect of the medication?

Possible answers:

1-Never   2-Rarely   3-Sometimes   4-Often   5-Always   --------------
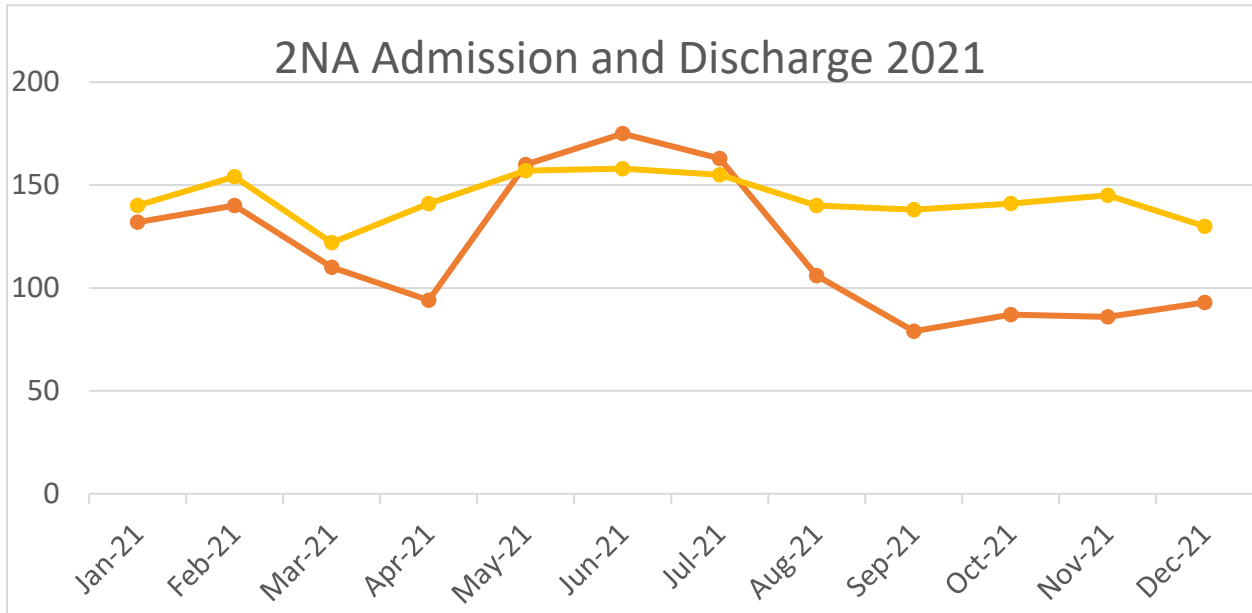
If the patient scores 2 or more, patient education on the medication indication, side effects, and

adverse drug reactions should be conducted.

Appendix G

2NA Admissions and Discharges

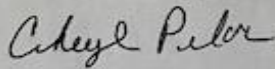Orange = Admissions
Yellow = Discharges

Appendix G cont'd

2NA Admission and Discharge 2021

Orange = Admissions
Yellow = Discharges

Appendix H.

June 24, 2021

To Whom It May Concern:

Unity Wiles, RN presented her school project "Single Item Literacy Tool" to the Hospital's Nursing Standards Committee on January 5, 2021. It was very well received by the committee and approved to be introduced, supported and executed on the inpatient floor of 2 North. Any questions regarding this matter, please feel free to contact me at cpilon@griffinhealth.org or (203) 732-7520.

Cheryl Pilon

Cheryl Pilon
Patient Care Division Secretary
Nursing Standards Committee Recorder