

The Effect of Teach-Back on Readmission Rates in Rehabilitation Patients

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Abstract

Purpose: Thirty-day readmissions often occur in rehabilitation patients and can happen for many reasons. One of those reasons is when patients do not fully understand how to effectively manage their health after discharge. The purpose of this evidence-based quality improvement project was to determine if implementing the teach-back intervention from the Agency for Healthcare Research and Quality's (AHRQ) Health Literacy Universal Precautions Toolkit would impact 30-day readmission rates among adult rehabilitation patients.

Methods: Data were collected from the electronic health record of rehabilitation patients. The comparative group included all rehabilitation admissions for 8 weeks prior to the intervention. The implementation group was composed of the rehabilitation admissions for 8 weeks post-implementation. All patients were then followed for 30 days postdischarge to capture readmissions.

Results: The total sample size was 79 ($n = 43$ in the comparative group, $n = 36$ in the implementation group). There was a 45% decrease in the mean percentage of the 30-day readmission rate in the implementation group as compared with the comparative group.

Conclusion: Based on the results, using the teach-back intervention from AHRQ's Health Literacy Universal Precautions Toolkit may impact 30-day readmission rates.

Keywords: Teach-back; readmissions; Agency for Healthcare Research and Quality's Health Literacy Universal Precautions Toolkit; discharge instructions; rehabilitation.

Introduction

Many patients in rehabilitation units face limitations in cognitive or physical capabilities that impact their understanding of their healthcare needs and management of their health after discharge. This gap in patient understanding, or health literacy, presents a significant challenge in ensuring patients can effectively manage their health once they leave the rehabilitation setting. Hahn et al. (2017) found that a multifaceted approach ensured patients were informed partners in their health care and,

as a result, have better mobility, less sadness, better social function, and better overall health. Patients who self-manage their conditions have better success transitioning to a home setting, reducing their risk of returning to the hospital (Sanon, 2019). Patients and caregivers who have a comprehensive understanding of their medical needs are more likely to maintain their functional status and safety after leaving the hospital, a factor that contributes to a lower risk of readmission within 30 days (Daras et al., 2018).

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Problem Description

Thirty-day readmissions are common among rehabilitation patients with one study showing a readmission rate of up to 42.5% (Ohta & Sano, 2021). Patients with chronic conditions are more likely to be readmitted (Hong et al., 2020). Readmissions can occur for many reasons, including lack of functional independence, reduced cognitive level, polypharmacy, body mass index, or dependent conditions (Ohta & Sano, 2021). Rehabilitation patients and their caregivers need extensive training and a complete understanding of their care plan to manage their care at home.

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Clinicians often underestimate their patients' learning needs and overestimate their ability to communicate effectively with patients. Approximately 40%–80% of medical information given during office visits is lost immediately; of the retained information, about 50% is retained incorrectly (Agency for Healthcare Research and Quality [AHRQ], 2020). Poor patient recall and misunderstandings are abundant, especially with patients facing chronic and complex medical conditions.

At the acute care hospital where this project took place, the inpatient rehabilitation unit had a 13.6% quarterly 30-day readmission rate, exceeding the organization's readmission goal of less than 10%. Upon further review of the rehabilitation unit discharge process, nurses provided printed discharge instructions along with verbal instructions; however, it was not clear to nurses if the patient fully understood the information. Thus, a feasible solution to improve readmission rates using an evidence-based education process was sought. The teach-back intervention from AHRQ's Health Literacy Universal Precautions Toolkit was explored as an intervention to decrease readmissions from the inpatient rehabilitation unit.

Literature Review

A literature search was conducted using electronic databases such as EBSCO, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, and Science Direct. Keywords used to search were teach-back, readmission, reduce readmissions, and discharge instructions. Results were included if they were peer-reviewed, written in English, provided in full text, original research, used the teach-back intervention, and published from 2016 to 2021. Articles were reviewed by title and were excluded if they did not include rehabilitation patients or the teach-back intervention. Case series, case reports, and expert opinions were also excluded. A total of 15 articles met the inclusion criteria for the literature review (Supplemental Material, Table, <http://links.lww.com/RNJ/A50>).

Even though teach-back is not a new concept, the available literature on using teach-back in a hospital-based rehabilitation unit is limited. Much of the literature includes specialty acute care, emergency care, pediatrics, and chronic diseases. Patients with ambulatory care sensitive conditions, defined as hypertension, Type 2 diabetes, heart disease, asthma, and chronic obstructive pulmonary disease, were found to have increased emergency department use (Hong et al., 2019). These diseases are all chronic conditions that patients must learn to self-manage to reduce hospital and emergency room visits (Hesselink et al., 2021; Hong et al., 2019). It has been noted in patients with heart disease and

diabetes that these individuals benefit from the teach-back intervention (Hong et al., 2020). In 648 emergency department patients with ambulatory care sensitive conditions, the teach-back intervention demonstrated a positive influence on increased knowledge retention and reducing emergency department visits in these patients (Hesselink et al., 2021; Hong et al., 2019, 2020).

Chronic conditions such as heart disease, chronic obstructive pulmonary disease, Type 2 diabetes, breast cancer, and asthma remain the most significant risks for repeated hospitalizations (Talevski et al., 2020). Implementing the teach-back education method for these patients significantly improved self-management, compliance, and self-care behaviors upon discharge, reducing hospitalizations and readmissions (Boyde et al., 2017; Dastoom et al., 2016; Hesselink et al., 2021; Mesbahi et al., 2020; Rahmani et al., 2020). Positive outcomes were found in disease knowledge, comprehension and retention, self-care practices and medication adherence, decreased healthcare expenditures, overall quality of life and hospital readmissions of patients with chronic conditions (Boyde et al., 2017; Farahaninia et al., 2020; Hong et al., 2020; Talevski et al., 2020). In patients with chronic conditions such as heart failure, total joint replacement, and coronary artery bypass graft, the teach-back intervention effectively reduced 30-day readmissions by 45%, ultimately reducing medical costs and unnecessary hospital resources (Hong et al., 2020; Oh et al., 2019).

Patients who receive organ transplants undergo life-changing surgery. Transplant recipient patients require extensive teaching to understand the signs and symptoms of transplant rejection, possible infection, the extensive medication regimen, and any follow-up laboratory work and appointments they need to maintain their health (Hu et al., 2020; Mollazadeh & Maslakpak, 2018). Transplant patients who received the teach-back intervention demonstrated positive results in discharge readiness, transitional care quality, an understanding of their care plan, better patient satisfaction, reduced readmissions, and a lower emergency visit rate (Hu et al., 2020; Mollazadeh & Maslakpak, 2018).

A discharge bundle including the teach-back intervention was implemented with approximately 25,000 pediatric inpatients and their caregivers. This intervention demonstrated an increase in caregivers' ability to provide their child's care and reduced pediatric hospital readmissions (Shermont et al., 2016). Similarly, women considered postmenopausal were randomly assigned, with 40 patients to the control group and 40 to the intervention group (Bahri et al., 2018). The intervention group received the teach-back intervention regarding self-care

during menopause. Knowledge was measured and demonstrated a significant increase in those who received the training (Bahri et al., 2018). The teach-back intervention was a low-cost, effective way to implement teaching with patients (Boyde et al., 2017; Hong et al., 2020; Mesbahi et al., 2020).

Specific Aims

The goal of implementing the teach-back intervention to inpatient rehabilitation patients was to provide them with resources to maintain their care in the home environment. The primary aim of this evidence-based quality improvement project was to determine if implementing the AHRQ's Health Literacy Universal Precautions Toolkit teach-back intervention would impact 30-day readmission rates in adult rehabilitation patients. The project was implemented between March and August 2023 in a rural Pennsylvania inpatient rehabilitation unit.

Methods

Setting

This project was conducted at a 205-acute care bed hospital, Level 2 trauma center with a 28-bed rehabilitation unit located in rural Pennsylvania. The organization is one hospital that is part of a larger health system that expands across the state. The rehabilitation unit has selective admission criteria, and consultations by the psychiatrists are performed prior to a patient being admitted. The inpatient rehabilitation unit has Joint Commission Gold Seal of Approval and is certified in stroke, brain injury, and spinal cord injury care.

Participants

A convenience sample was used to select patients for this project. The convenience sample was based on admissions to inpatient rehabilitation, obtained from the electronic health record, and who met the inclusion criteria. All persons who met the inclusion criteria of admission to inpatient rehabilitation, age of 18 years or greater, and a home discharge disposition were included in the project. Patients younger than 18 years old on admission and those whose discharge disposition was not a home setting were excluded. This project was reviewed by the institutional review board of the hospital and was determined not to be human subject research. As such, this project did not require institutional review board oversight.

Evidence-Based Practice Model

The Iowa Model of Evidence-based Practice to Promote Quality Care was used to integrate the evidence for this

project into practice. The Iowa model assists an interprofessional team in implementing patient-centered care changes by using an algorithm and begins with a clinical trigger that establishes a clinical question (Iowa Model Collaborative, 2017). A team is formed, and the literature is reviewed to determine if there is a solution to the problem. If sufficient evidence exists, a plan is developed to pilot the intervention. Data are analyzed to find whether there is clinical or statistical significance. Results are disseminated and determined if the project should move to practice or if another intervention should be considered.

Intervention

A core interdisciplinary team was formed to develop, implement, and support the effective achievement of the project objective of implementing teach-back for nurses for use in rehabilitation patients during their hospital stay. The team included the nurse manager, nurse educator, manager of rehabilitation services, staff nurses, and the discharge planning team of the RN case manager and a social worker. Approximately 37% of nurses were certified in rehabilitation nursing. Team members were involved in evaluating the current discharge processes and developing a systematic plan to implement AHRQ's Health Literacy Universal Precautions teach-back toolkit into the discharge practice.

The AHRQ's Health Literacy Universal Precautions Toolkit provides methods of simplifying communication and confirming comprehension regarding healthcare needs (AHRQ, 2020). This toolkit consists of 21 tools, each three to five pages in length, that focus on improving spoken and written communication, self-management and empowerment, and supportive systems (AHRQ, 2020). AHRQ also provides free educational materials regarding the Health Literacy Universal Precautions Toolkit such as learning modules, PowerPoints, worksheets, and quick start guides. Of the tools provided in the toolkit, Tool #5, the teach-back intervention was identified as a method that may impact 30-day readmission rates.

Teach-back is a method of education that promotes a continuous cycle of education by encouraging patients to explain, in their own words, the education they have received (AHRQ, 2020). This education may include disease management, medication, and self-care. Explaining the information in their own words allows patients to demonstrate what they have heard and received and how they comprehend the information regarding their medical care and needs (AHRQ, 2020). Teaching and then asking questions in a manner that asks patients or caregivers to formulate their own words about the information should increase their depth of comprehension.

The first step was to provide education to all nurses on the rehabilitation unit. Free education materials from AHRQ's website were used to explain, demonstrate, and provide examples of the teach-back intervention. A 30-minute interactive educational module created by AHRQ that provides examples of performing the teach-back intervention was used for staff education (AHRQ, 2021). Because the module is a free, open resource, staff were able to complete the module as many times as they needed to understand the teach-back process. In addition, a one-page educational flyer was distributed as a quick reference for staff (AHRQ, 2023). This educational module and one-page flyer were provided to nurses on all shifts. Upon completion of the education, the nurses completed a Microsoft form attesting to completing and understanding the teach-back content. Supporting materials were compiled throughout the project to provide continuous learning opportunities about the teach-back intervention, which were located in the staff mail room and easily accessible by all nurses on all shifts. Staff were encouraged to ask questions throughout the project duration to ensure the intervention was being implemented consistently and accurately.

An admission report of patients who were admitted to the inpatient rehabilitation unit was generated to determine eligibility for inclusion in the study. Patients in the intervention group received the teach-back intervention throughout their admission and the duration of the project. When a patient was admitted to the unit, staff would educate the patient about their plan of care using the teach-back intervention. After providing education, the patient and caregiver (if available) were required to teach the information back to the staff member in their own words, allowing the patient and caregiver to demonstrate comprehension versus memorization. The utilization of the teach-back method for education was documented in the nursing progress note.

Measures

The primary outcome of interest was the 30-day readmission rate from patients in the rehabilitation unit. Readmissions were defined as "the percentage of acute inpatient stays during the measurement year that were followed by an unplanned acute readmission for any diagnosis within 30 days" (Centers for Medicare & Medicaid Services, 2020, p. 4). Readmissions were reported as a percentage by dividing the number of readmissions by the total number of patients in the group and multiplying this by 100. Patients were tracked using an electronic spreadsheet for 30 days after their discharge using their medical record number. The electronic

spreadsheet was stored on an encrypted, password-protected computer. An existing report from the electronic health record was used to determine if patients were readmitted during the 30-day time frame. The report included demographics (age, gender, ethnicity, length of stay [LOS]), the medical record number, admission date, discharge date, and readmission date. Patients in the intervention group were compared to patients in the previous 8 weeks (comparative group). Patient identifiers were stored separately from the analytic file.

Results

All data were analyzed utilizing IBM SPSS Statistics, Version 28. Descriptive statistics were used to analyze the data. The total sample was 79 participants, with $n = 43$ in the pre-intervention group and $n = 36$ in the post-implementation group. A summary of patient demographics is found in Table 1. Patients in the pre-implementation phase were predominately female ($n = 27$, 63%), White ($n = 38$, 88%), and not Hispanic or Latino ($n = 41$, 95%). The average age was 67.8 years ($SD = 16.8$) and ranged from 27 to 92 years. The average LOS was 11.6 days ($SD = 5.6$) and ranged from 3.9 to 26.8 days. The post-implementation group included patients who were predominately male ($n = 19$, 53%), White ($n = 31$, 94%), and not Hispanic or Latino ($n = 35$, 97%). The average age of the post-implementation group was 66.5 years ($SD = 15.4$) and ranged from 25 to 95 years. The average LOS was 14.8 days ($SD = 6.7$) and ranged from 5.7 to 29.1 days.

The 30-day readmission rate was 11% during the 8 weeks prior to the intervention for the comparative group. After implementing AHRQ's Health Literacy

Table 1 Patient Demographic Characteristics ($N = 79$)

Characteristic	Comparative Group ($n = 43$)		Intervention Group ($n = 36$)	
	M (SD)		M (SD)	
Age (years)	67.8 (16.8)		66.5 (15.4)	
Length of stay (days)	11.6 (5.6)		14.8 (6.7)	
	n	%	n	%
Gender				
Female	27	63	17	47
Male	16	37	19	53
Race				
White	38	88	34	94
Black or African American	2	5	1	3
Other	2	5	1	3
American Indian/Alaska Native	1	2	0	0
Ethnicity				
Not Hispanic/Latino	41	95	35	97
Not indicated	2	5	1	3

Universal Precautions teach-back toolkit into the discharge practice, the 30-day readmission rate was 6%. This was a mean percentage difference of 45% fewer readmissions.

Discussion

The aim of this evidence-based quality improvement project was to determine if using the teach-back intervention from AHRQ's Health Literacy Universal Precautions Toolkit impacted 30-day readmissions among adult rehabilitation patients. The clinical trigger that warranted an evidence-based change was the 30-day readmission rate in the rehabilitation unit that was above the organization's 10% or less goal. There was a 45% decrease in readmissions after implementing AHRQ's Health Literacy Universal Precautions teach-back toolkit into the discharge practice. During the same time frame, the national readmission average was 14% (AHRQ, 2021b). These results are similar to others published in the literature. This was noted in a study of chronic conditions such as heart failure, total joint replacement, and coronary artery bypass graft noted that the teach-back intervention effectively reduced 30-day readmissions by 45%, (Hong et al., 2020; Oh et al., 2019). Another study with heart failure patients noted that the teach-back intervention group had 56.2% fewer readmissions than the control group, with an increased ability to self-manage their health (Dastoom et al., 2016). There was a direct correlation between those who received teach-back and answered 75% more accurately the self-care questions asked during the follow-up phone call.

The decrease in readmissions suggests that intentional teach-back during the discharge process enhances patients' and caregivers' ability to manage their care in the home setting. Previous studies have shown that teach-back can help improve patient outcomes and satisfaction by building trust with healthcare providers and engaging in their disease or diagnosis management (Hong et al., 2020). Patients who received teach-back positively affected their self-care ability, resulting in fewer readmissions (Mesbahi et al., 2020). Patients who are more prepared to transition to home have improved comprehension of their needs upon discharge, reducing their chance of being readmitted to the hospital setting (Sanon, 2019).

Sustainability is a crucial part of research and quality improvement projects. The first recommendation for sustainability was to revise the unit policy to include using the teach-back intervention for patient education. This would ensure that patients received the same interactions from their healthcare providers during their stay. Although the purpose of this project was for nurses to incorporate teach-back in the discharge process, therapy has its

own discharge education process, including return demonstration of activities. Including therapy in the discharge process would enhance the interdisciplinary approach and help reinforce the ideas each discipline was teaching the patient and caregiver. This would be an intracollaborative unit approach between the disciplines employed in the unit.

A second recommendation for sustainability was to add education regarding the teach-back intervention to the annual competencies for all direct care staff. For the rehabilitation unit, this would include the other members of the interdisciplinary care team such as the therapists (physical, occupational, speech, and recreational), neuropsychologists, and psychiatrists. This ensures that all staff are educated upon hire and annually regarding the teach-back intervention. This may include developing role-playing activities at annual education and competency days. The unit educator would develop these scenarios and build them into the annual education and competencies required of the staff. The administration team of the unit would also need to approve the additional competencies for annual education. This could be done at a unit level as competencies needed for each specific unit at this facility are determined by the specialty of patients they admit. This would help reinforce the patient education method as part of their daily workflow while continually making them comfortable with this type of patient education.

Limitations

There were some limitations associated with this project. One notable limitation of this project was the singular focus on the teach-back intervention. Using teach-back as the primary intervention did not account for the multifaceted nature of readmissions, as they can be influenced by many factors. As such, our findings may be influenced by other confounding variables.

One theme noted throughout the project was that even with the structured utilization of the teach-back toolkit, there was no standardized delivery method because of the individual nature of each nurse performing the discharge process. Patient education could vary from nurse to nurse. Although nurses were encouraged not to prompt patients during the teach-back process, it could have occurred. Examining ways to standardize how teach-back is implemented and delivered to patients may achieve better results. Artificial intelligence may have a future role in a patient's discharge process (Ando et al., 2022; Patel & Lam, 2023). Using artificial intelligence models may communicate with patients in a style or level that is better understood.

This project used a convenience sampling method. All patients admitted to the inpatient rehabilitation unit were provided with the intervention, and confounding

Key Practice Points

- Tailored discharge education is needed for rehabilitation patients to decrease 30-day readmission rates.
- Implementing the teach-back intervention can reduce the likelihood of 30-day readmissions.
- Given the positive outcomes of the teach-back method, rehabilitation units should consider incorporating this evidence-based strategy into their discharge planning protocols.

variables such as primary diagnosis and comorbidities were not collected. This may affect the generalizability of the results. The project sample was predominantly White (94%), which aligns with the county demographics comprised of 92% White (U.S. Census Bureau, 2021); however, a more diverse sample is needed for future research.

Unit capacity was a limitation of this quality improvement project. The unit has 28 licensed beds; however, some beds were closed because of ongoing construction. This lowered the average daily census and, therefore, lowered the sample size. Another limitation affecting the data analysis was that readmission data were only collected from this health system. If a patient had a readmission at any facility within this large healthcare system, the data were captured; however, it may not account for admission to a facility outside this healthcare system.

Implications for Rehabilitation Nursing

Implications for rehabilitation nursing practice include using a communication process with patients that improves their ability to understand their medical care and needs while improving their outcomes upon transition to home. Given the challenges faced by many patients in understanding their discharge instructions because of cognitive or physical limitations, it is imperative for rehabilitation nurses to adopt strategies that can enhance the patient's comprehension of their care postdischarge. This project highlights the potential utility of the AHRQ Health Literacy Universal Precautions Toolkit teach-back intervention in achieving this goal. The teach-back method promotes interactive communication where the patient explains back in their own words the medical instructions given to them. Nurses should tailor their communication style according to the patient's needs. This approach not only helps in identifying areas of confusion or misunderstanding but also boosts the patient's confidence in their ability to manage their care postdischarge. The teach-back method, by its very nature, empowers patients. When they can articulate their understanding of their care needs, it can foster a sense of ownership over their health outcomes.

Rehabilitation nurses can further this empowerment by providing consistent feedback and encouragement. A 45% decrease in the 30-day readmission rate suggests that when patients are well-informed about their health conditions and care regimen, they are more likely to adhere to prescribed treatments and recognize potential complications early on, potentially reducing the need for readmission.

Conclusion

Thirty-day readmissions are a measurable patient outcome at facilities across the United States. This affects hospital reimbursement, patients and families accrue additional healthcare expenses, and patient outcomes are reduced when they are readmitted. Nurses must implement processes that promote patient success in discharge to a home setting. The most successful patients know their resources, understand their healthcare needs and diagnosis, and can self-manage their health care. The literature demonstrates that patients better prepared and educated while hospitalized are more successful in the home setting. This project improved patient outcomes by reducing 30-day readmissions and improving the inpatient rehabilitation patients' successful transition to home settings at discharge. The nurses were eager to learn and then translate that intervention to the patients to improve their patient outcomes. Nurses were vested in their patients and learning while engaging in conversations about how their impact at a direct care level impacted the patient, unit, and facility overall.

Conflict of Interest

The authors declare no conflict of interest.

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1. ARN members can access the discount by logging into the secure "Members Only" area of <http://www.rehabnurse.org>.
2. Select the Education tab on the navigation menu.
3. Select Continuing Education.
4. Select the Rehabilitation Nursing Journal article of your choice
5. You will appear at nursing.CEConnection.com.
6. Log in using your Association of Rehabilitation Nursing username and password. The first time you log in, you will have to complete your user profile.
7. Confirm the title of the CE activity you would like to purchase
8. Click start to view the article or select take test (if you have previously read the article.)
9. After passing the posttest, select + Cart to add the CE activity to your cart.
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